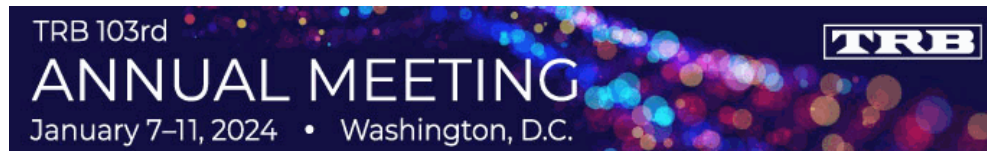


Sessions and Events



Spotlight Sessions



TRB has spotlighted a number of sessions that are being presented by our sponsors or cover timely issues and topics.

Poster Sessions



Convention Center, Lower Level, Hall A

Poster Sessions provide an opportunity to interact with authors in a more personal setting than the conventional lecture. The papers presented in these sessions meet the same review criteria as lectern session presentations. For a complete list of poster sessions, see the "Sessions, Events, and Meetings" section in the printed program. The full description for each poster session—including the titles and locations of individual posters—is available via the mobile app. A floor plan of the posters also on the mobile app.

Continuing Education Credits



Professional Development Hours (PDHs) may be claimed for attending the TRB Annual Meeting. Each hour of participation earns one PDH. Attendees must maintain their own record of attendance and can do so using the form in the printed program. At the request of a licensing or certifying agency, TRB will confirm an individual's meeting registration; however, TRB is not able to confirm attendance at specific sessions. Please note that, at this time, neither TRB nor the Annual Meeting is certified with the state licensing boards of Florida and New York.

Certification Maintenance (CM) credits—approved by the American Planning Association (APA) for retaining American Institute of Certified Planners (AICP) certification—are offered for some sessions at the TRB Annual Meeting. Persons seeking AICP CM credits must record their credits directly with APA. In the Annual Meeting mobile app, tap the "Program" icon on the home screen and then tap "CM Sessions" for a list of sessions approved for CM credits. Also, on the Annual Meeting Interactive Program, you can click the "Features" drop-down menu in the left column, then check only the box for "AICP Certification" to filter just for sessions with approved CM credits.

Sunday, January 07 (Sessions 1001 - 1078)

1001

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 102B

Pedestrian Safety on Urban Arterials

Sponsored By Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation

The Federal Highway Administration recently completed an international study of approaches to reduce pedestrian fatalities and injuries on urban arterials. In this workshop, we will take a deep dive into the study findings regarding key innovations leading to major successes in preventing pedestrian fatalities, including road safety audits and other safe system approaches. We will organize breakouts around these key practices to discuss barriers and opportunities to extend implementation in the United States and worldwide.

Improving Pedestrian Safety on Urban Arterials: U.S. Takeaways from a Global Benchmarking Scan

(P24-20836)

Shari Schafflein/Federal Highway Administration (FHWA)

Envisioning a Safe Pedestrian Network: Opportunities with the Movement and Place Framework (P24-20837)

Darren Buck/Federal Highway Administration (FHWA)

State and Local Coordination to Implement Pedestrian Safety Improvements (P24-20840)

Mark Cole/Virginia Department of Transportation

Managing Speeds on Urban Arterials (P24-20841)

Lee Austin/City of Austin (TX)

Institutionalizing Road Safety Audits to Proactively Address Safety Goals (P24-20942)

Rachel Carpenter/California Department of Transportation

1002

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, Salon B

Can You See Me?: Vulnerable Road User Conspicuity Research Plan

Patricia Tice, ProFound Insights, Inc, presiding

Alyssa Ryan, University of Arizona, presiding

Chris Schwarz, University of Iowa, presiding

Sponsored By Standing Committee on Human Factors of Infrastructure Design and Operations, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation, Standing Committee on Road User Measurement and Evaluation, Standing Committee on Visualization in Transportation

It is assumed pedestrians and cyclists can be seen by drivers, but there are few studies that delineate these perceptual limitations in vivo. Besides the obvious safety issues, seeing a road user directly impacts driver behavior, framing the scale of urban space. This workshop is designed as a research matchmaker to examine this topic. In-silo teams will collaboratively identify the critical research questions, explore "pedestrian in the simulator" technologies, and identify other data sources. Teams will then reassemble to draft new research proposals for this safe systems issue.

The Line of Sight Fallacy (P24-20990)

Patricia Tice/ProFound Insights, Inc

General Pedestrian Conspicuity Research Summary (P24-20992)

Alyssa Ryan/University of Arizona

Human in the Simulator Issues (P24-20994)

Chris Schwarz/University of Iowa

Data Possibilities (P24-20995)

Patricia Tice/ProFound Insights, Inc

1003

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 103A

Transportation Systems Management and Operations Data Exchanges: On-Ramps to the National Roadway Digital Infrastructure

Mike Haas, Arcadis, presiding

Sponsored By Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Intelligent Transportation Systems

New data sources and advancements have made data critical for infrastructure owners and operators to manage and improve system operations. Federal, state, and regional organizations have deployed various types of exchanges to make data accessible. Participants will learn about current activities, identify the benefits and drawbacks of various models, define operational use cases, and explore how data exchanges fit within the national roadway digital infrastructure to identify actions and research needs.

Digital Infrastructure (P24-20925)

John Corbin/Federal Highway Administration (FHWA)

Managing Disruptions Data Exchanges (P24-20926)

Todd Peterson/Federal Highway Administration (FHWA)

Digital Mapping: A Key to Effective Data Exchanges (P24-20927)

Kelley Klaver/Applied Engineering Management Corporation, Monali Shah/Google, Inc.

1004

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, Ballroom C

Preparing, Conducting, and Summarizing the Results: Assessing Traffic Management Systems

Jon Obenberger, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Intelligent Transportation Systems, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Freeway Operations, Joint Subcommittee on Active Traffic Management, Standing Committee on Traffic Signal Systems, Standing Committee on Artificial Intelligence and Advanced Computing Applications

This workshop will identify and compile information and practices to assist agencies with finding opportunities to improve transportation management system (TMS) capabilities and performance. The expected outcomes from the small group breakout sessions conducted during this workshop will explore and identify opportunities to ensure TMSs are meeting agency objectives, performance expectations, desired functions and services, and capabilities to meet the needs and expectations of other agencies, systems, service providers, or customers. This workshop proposes 3 processes for discussion: (1) preparing for and conducting a TMS assessment, (2) assessing TMS capabilities and performance, and (3) identifying opportunities for improving TMSs.

Preparing, Conducting, and Summarizing the Results of TMS Assessments: Framing the Discussion (P24-20165)

Jianming Ma/Texas Department of Transportation

Assessing Traffic Management Systems (P24-20166)

Peter Marshall/D2 Traffic Technologies

Preparing for and Conducting a TMS Assessment (P24-20167)

Daniel Lukasik/Parsons

Assessing TMS Capabilities and Performance (P24-20168)

John MacAdam/MacAdam Consulting

Identifying Opportunities and Approaches for Improving TMSs (P24-20169)

Matthew Junak/HNTB Corporation

Preparing, Conducting, and Summarizing TMS Assessments: Framing the Discussion (P24-20170)

Fanis Papadimitriou/Attikes Diadromes, SA

Identifying Issues to Consider, Successful Practices, and Resources: TMS Assessments (P24-20171)

Susanna Zammataro/International Road Federation (IRF)

Session 3: Breakout Session Results (P24-20172)

Leslie Jacobson/WSP

(continued)

Session 3: Breakout Session Results (P24-20173)

Philip Masters/Parsons

Session 3: Breakout Session Results (P24-20174)

Heng Wei/University of Cincinnati

Workshop Action Planning (P24-20175)

Raj Ponnaluri/Florida Department of Transportation

Workshop Next Steps and Sponsors' Perspectives (P24-20176)

Jon Obenberger/Federal Highway Administration (FHWA)

Workshop Next Steps and Sponsors' Perspectives (P24-20177)

Martin Russ/AustriaTech

Workshop Next Steps and Sponsors' Perspectives (P24-20178)

Beverly Kuhn/Texas A&M Transportation Institute

Workshop Next Steps and Sponsors' Perspectives (P24-20179)

Johanna Tzanidaki/ERTICO-ITS Europe

Workshop Next Steps and Sponsors' Perspectives (P24-20180)

Yinhai Wang/University of Washington

Workshop Next Steps and Sponsors' Perspectives (P24-20181)

Mark Muriello/International Bridge, Tunnel & Turnpike Association (IBTTA)

Workshop Next Steps and Sponsors' Perspectives (P24-20182)

Nikola Ivanov/University of Maryland, College Park

1005

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, Salon C

Highlights from the Automated Road Transportation Symposium

Jane Lappin, Blue Door Strategy and Research, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation, Subcommittee on Challenges and Opportunities of Road Vehicle Automation

This workshop presents a selection of plenary talks and breakout sessions from ARTS23. The topics and speakers are selected with the objective of providing annual meeting participants with depth of insight into a range of current automated vehicle challenges and opportunities. ARTS23 was held in San Francisco amidst controversy over the city's fleets of "robotaxis" and during widely covered public hearings on AV commercial vehicle testing and operations. The agenda for this workshop reflects some of those controversies.

ARTS23 Highlights (P24-21530)

Steven Shladover/University of California, Berkeley

An Update on the Business of Automated Vehicles (P24-20972)

Richard Bishop/Bishop Consulting

Delivering the Goods: Automated Driving Systems in Freight Applications (P24-20973)

Robert Kreeb/Federal Motor Carrier Safety Administration (FMCSA)

What Pioneering Cities Are Learning by Hosting Truly Driverless Ridehailing Operations (P24-20974)

Julia Friedlander/San Francisco Municipal Transportation Agency

Radical Collaboration: Cities Role in Disruptive Mobility Technologies (P24-20976)

Karina Ricks/CityFi, Nico Larco/University of Oregon

How "Duty of Care" Defines Society's Top-Level Safety Requirement for Automated Vehicles (P24-21151)

Chris Gerdes/Stanford University

How Safe Is the Waymo Driver? (P24-20980)

Trent Victor/Waymo

Use, Disuse, and Misuse of Partially Automated Driving Systems (P24-20981)

Sina Nordhoff/Delft University of Technology, Dustin Souders/Clemson University

National and Continental Strategy for Digital Infrastructure to Integrate Automation into Transportation (P24-20982)

John Corbin/Federal Highway Administration (FHWA)

Looking Ahead to ARTS24 (P24-20983)

Valerie Shuman/Shuman Consulting Group, LLC

1006 CM (3.00)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 150B

Bicycle and Pedestrian Data Fusion: Learning from Each Other

Krista Nordback, UNC Highway Safety Research Center, presiding

Ioannis Tsapakis, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Highway Traffic Monitoring, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation, Standing Committee on Traffic Signal Systems, Standing Committee on Statewide/National Transportation Data and Information Management, Standing Committee on Urban Transportation Data and Information Systems, City Transportation Issues Coordinating Council

Bicycle and pedestrian counts are foundational for monitoring active travel on a network. However, counts are only available at select locations, leaving volumes on most of the network unknown. Emerging data sources combined with traditional counts may improve network-wide estimation, but questions remain about the quality, accuracy, management, and methods to be used for estimating volumes. This workshop will examine data quality and management, explore data fusion, and discuss future needs.

Introduction (P24-20441)

Shawn Turner/Texas A&M Transportation Institute

Case Studies and Discussion of Data Quality and Management (P24-20443)

Phil Lasley/Texas A&M Transportation Institute

Exploring Data Fusion Techniques to Estimate Network-Wide Bicycle Volumes (P24-20445)

Sirisha Kothuri/Portland State University

Investigating How Location-Based Services, App, and Synthetic Data Relate to and May Be Used with Data from Permanent Counters (P24-20446)

Md Mintu Miah/University of California, Berkeley

1007 CM (3.00)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, Salon A

Integrating Equity into Transportation Safety Management

Eric Tang, VHB, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems, Standing Committee on Equity in Transportation

This workshop will feature panels and discussion in the fields of Data Analysis and Visualization, Public Engagement, Project Prioritization and Implementation, and Organizational Management and how they integrate equity into transportation safety. They will present how they address barriers and identify solutions in historical disadvantaged communities and how collaboration and organizational programs identify equitable and effective safety interventions. The workshop will be an interactive opportunity for participants to brainstorm and contribute ideas for other strategies.

What Does Equity in Transportation Look Like? (P24-20477)

Keith Sinclair/Federal Highway Administration (FHWA)

How Do We Engage with Communities to Meet Community Needs? (P24-20571)

Nicole Bennett/VHB

1008

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 101

Shaping the Future: ChatGPT and Other Artificial Intelligence Technologies in the Transportation Industry

Jesse Newberry, Massachusetts Department of Transportation, presiding

Sponsored By Standing Committee on Artificial Intelligence and Advanced Computing Applications, Standing Committee on Statewide/National Transportation Data and Information Management, Standing Committee on Urban Transportation Data and Information Systems, Standing Committee on Information Systems and Technology, Standing Committee on Workforce Development and Organizational Excellence, Standing Committee on Emerging Technology Law, Standing Committee on Innovative Public Transportation Services and Technologies

Ready to dive into the rapidly evolving world of artificial intelligence and transportation? ChatGPT is now the fastest growing app ever and suddenly departments of transportation are being asked how it will reshape the workforce in the transport sector. This workshop will delve into the real-world impact, industry transformations, and changes in job roles. It will bring together a lineup of researchers and industry experts to share research findings, practical experiences, real-world impacts, and opinions.

An Introduction to Generative Artificial Intelligence Technology: How It Works, What It Can Do, and How It Will Impact You as a Transportation Professional (P24-20550)

Willis Zhang/Google

How Are State Departments of Transportation Using Artificial Intelligence Technologies Today and What Is Next? (P24-20712)

Ryan Granger/Texas Department of Transportation, Ben McCulloch/Texas Department of Transportation

A Practical Methodology to Decide Which Generative Artificial Intelligence Use Cases Are Right for Your Transportation Entity (P24-20713)

Steve Nichols/Gartner, Inc.

An Ethics Ecosystem of Artificial Intelligence and Big Data II: Why, What, and How Is It Going? (P24-20714)

John Basl/Northeastern University

1009

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 150A

Breaking Down Organizational Silos with Data Standards

Jennifer Steen, HDR, presiding

Shawn Blaesing, Iowa Department of Transportation, presiding

Sponsored By Standing Committee on Visualization in Transportation, Standing Committee on Information Systems and Technology, Standing Committee on Geographic Information Science, Standing Committee on Transportation Asset Management, Standing Committee on Maintenance Management Systems

Siloed workflow optimization led to asset histories documented on paper and digitally using a variety of data models that served one tactical purpose. Now, agencies are centralizing asset data to serve it across the organization. This workshop will look at how data standards help. It will explore internal standards, like data models, formats, and requirements, and external standards to share data outside of the organization. Attendees will participate in interactive activities and collaborate in small groups to exchange ideas on how implementing data standards create value.

Welcome and Introductions (P24-20350)

Jennifer Steen/HDR

Introduction to the Interoperability of Data Standards in Transportation (P24-20351)

Shawn Blaesing/Iowa Department of Transportation

Developing SMART Data Management Plans for Ancillary Asset Management Digital Twins (P24-20353)

Ashtarout Ammar/Virginia Polytechnic Institute

OpenBIM and Data Standards (P24-20354)

Jennifer Steen/HDR

Panel Discussion: Enterprise Perspective on Data (P24-20384)

Hala Nassereddine/University of Kentucky, Trisha Stefanski/Minnesota Department of Transportation, Katie Brown/Oklahoma Department of Transportation, Elaine Richard/Connecticut Department of Transportation

(continued)

Summary and Closing (P24-20355)

Jennifer Steen/HDR, Shawn Blasiesing/Iowa Department of Transportation

1010

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 143C

Standardizing Transit Survey Data

Gregory Newmark, Morgan State University, presiding

Sponsored By Standing Committee on Travel Survey Methods, Standing Committee on Transit Data

The standardization of many types of transit data in recent years has yielded innumerable benefits for transit operators, riders, vendors, researchers, and society as a whole. The goal of this workshop is to begin the process of extending such standardization to the data collected by transit agencies through surveying their riders. This workshop will build off the successful effort to develop a single archive for transit survey data sets.

Standardizing Transit Data (P24-20575)

Gregory Newmark/Morgan State University, Joseph Fish/National Renewable Energy Laboratory (NREL)

Learning About Street Harassment on Transit: Preparing a Survey Instrument for California Transit Agencies (P24-20811)

Asha Agrawal/Mineta Transportation Institute, Jon Canapary/Corey, Canapary & Galanis, Carol Anne Carroll/Corey, Canapary & Galanis, Tam Guy/University of California, Los Angeles, Anastasia Loukaitou-Sideris/University of California, Los Angeles

Facilitating Discussions on Standardization (P24-20812)

Kevin Pullis/WBA Research, William Bohner/WBA Research, Eric Lind/University of Minnesota, Cemal Ayvalik/University of Illinois, Chicago

Best Practices for Panel Transit Surveys (P24-20813)

James Rubin/TransPro Consulting

1011

CM (3.00)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 151A

City and State Electrification: A Fully Charged Discourse on Resilience and Safety

Benito Perez, Transportation For America, presiding

Sponsored By Standing Committee on Transportation Demand Management, City Transportation Issues Coordinating Council, Standing Committee on Regional Transportation Systems Management and Operations

As Bipartisan Infrastructure Law funds and climate urgency push electrification to the forefront of planning and implementation, the benefits and hazards in implementing and operating electrification infrastructure are increasingly debated. This workshop brings together a diverse coalition of stakeholders for a facilitated discussion and audience engagement. The workshop aims to discuss (1) equity considerations, (2) safety considerations; and (3) resiliency considerations, covering what is known and unknown to advance the topic.

Electrification Safety Considerations: First Responder Incident Response (P24-20492)

Patrick Son/Gannett Fleming, Inc.

Resiliency in Transportation Electrification (P24-20493)

Melissa Savage/Jacobs

Resiliency in Transportation Electrification: State Department of Transportation Perspective (P24-20494)

Stephanie Johnson/Delaware Department of Transportation

Equity in Transportation Electrification (P24-20498)

Terry Travis/EVNoire

Transportation Electrification and Equity (P24-20495)

Steffani Cuff/FORTH

Municipal Perspective on Transportation Electrification (P24-20499)

Josh Kavanagh/UC San Diego

Municipal and Industry Perspectives on Transportation Electrification (P24-20500)

Rachel Yoka/International Parking & Mobility Institute

(continued)

Emergency Response in Transportation Electrification (P24-21492)

Christopher Engelbrecht/Missouri Department of Transportation

1012

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 152A

Open Innovation: Public-Sector Engagement with the Private Sector to Advance Innovation

Bernard Gyergyay, Autobahn GmbH of the German Federal Government, presiding

Stephanie Dock, District Department of Transportation, presiding

Harold Paul, LTRC Retired, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management, City Transportation Issues Coordinating Council, Standing Committee on Strategic Management, Standing Committee on Information and Knowledge Management

How can public agencies learn and work better with businesses and start-ups to leverage a potential partnership that can yield tangible benefits? Open innovation is an approach to share and exchange knowledge with external partners to accelerate internal transformation. This workshop explores Transportation Innovation Lifecycle concepts through: (1) five presentations by domestic and international organizations, and (2) interactive exercises to explore the idea of innovation-oriented calls or challenges and how to promote public-private-academic partnerships on prototyping and piloting.

Innovating with Academia: Applying Research Outside the University (P24-20750)

Barton Treece/University of Washington

Unsolicited Advice: How to Rethink Procurement and Enable Innovation (P24-20751)

Joshua Schank/InfraStrategies LLC

U.S. Perspective: Federal (P24-20752)

Eric Raamot/Office of the Assistant Secretary for Research and Technology (OST-R)

Innovation Programs at Rijkswaterstaat, Netherlands, National Road and Waterway Administration (P24-20753)

Hans van Saan/Rijkswaterstaat

Approaches to Foster Transatlantic Innovation Exchange (P24-20787)

Jan Luedert/German Center for Research and Innovatio

1013

CM (3.00)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 152B

Using Benefit–Cost Analysis in Today’s Decision Making

Susan Binder, Cambridge Systematics, presiding

Nathan Macek, HDR, presiding

Sponsored By Standing Committee on Economics and Finance, Standing Committee on Transportation Planning Analysis and Application, Standing Committee on Strategic Management, Standing Committee on Transportation Asset Management, Standing Committee on Data for Decision Making, Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Passenger Rail Transportation

This workshop addresses contemporary use and issues associated with benefit-cost analysis (BCA) from the perspective of both analysts who produce them and decision makers who rely on them. The desire for transparency requires rigorous analyses to justify choices. With greater use of BCA as part of applications and justifications for funding, its use within a suite of quantitative analyses has gotten more attention. While many are generally supportive of using BCAs, awareness of their vulnerabilities has increased skepticism of the approach. Panels will discuss best practices, analytical gaps such as impacts beyond traditional parameters, and approaches to improve its usefulness.

Panel 1: Federal Perspectives on Benefit-Cost Analysis (P24-20629)

Sharon Greene/InfraStrategies LLC, Darren Timothy/U.S. Department of Transportation Office of the Under Secretary for Policy, Charles Noble/Federal Highway Administration (FHWA), Stephen Brumbaugh/Federal Transit Administration (FTA), Sean Peirce/OST-R/Volpe Center

Panel 2: Practitioner Perspectives on Benefit-Cost Analysis (P24-20630)

Daniel Hodge/Cambridge Econometrics

(continued)

Texas Department of Transportation's Benefit-Cost Analysis Grant Pipeline Screening Tool (P24-20631)

Robin Ayers/Texas Department of Transportation

Experience with Benefit-Cost Analysis for Grant Applications (P24-20632)

Timothy Leong/Port of Oakland

Benefit-Cost Analysis in Dynamic, Large-Scale Investments (P24-20633)

Alexander Heil/Conference Board, Inc.

Benefit-Cost Analysis for High-Speed Rail (P24-20634)

Zhenhua Chen/Ohio State University

Panel 3: The Future of Benefit-Cost Analysis (P24-20635)

Susan Binder/Cambridge Systematics, Glen Weisbrod/EBP US, Inc., Jordan Riesenberg/U.S. Department of Transportation Office of the Under Secretary for Policy, Francesca Pagliara/University of Naples Federico II

1014

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 202B

Novel Life Cycle Consideration of Digital Project Delivery Workflows and Data Exchanges

Reihaneh Samsami, University of New Haven, presiding

Alexa Mitchell, HDR, presiding

Richard Unkefer, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Construction Management

The objective of this workshop is to provide an exploration of the latest trends and best practices in digital project delivery workflows and their impact on the life cycle of construction projects. This workshop will build on the experiences from previous years and provide attendees with valuable insights and practical solutions for optimizing data exchanges and enhancing collaboration among project participants. Industry experts and practitioners, government agencies, and academics will deliver presentations during the workshop, sharing their experiences and perspectives on digital project delivery workflows and data exchanges. Attendees will participate in interactive sessions and collaborate in small groups to exchange ideas.

Opening (P24-20913)

Reihaneh Samsami/University of New Haven

Introduction (P24-20886)

Amlan Mukherjee/WAP Sustainability

Best Practices (P24-20887)

Ian Howell/buildingSMART International Ltd, Terry Bills/Environmental Systems Research Institute, George Lukes/Utah Department of Transportation

Existing Gaps (P24-20888)

Jennifer Steen/HDR, Alexa Mitchell/HDR, Ronald Gant/Infotech

Future Direction (P24-20889)

Richard Unkefer/Federal Highway Administration (FHWA)

Panel Discussion (P24-20890)

Allen Melley/Pennsylvania Department of Transportation, Matthew Miller/Iowa Department of Transportation, Amy Sullivan/Ride Right, Adrien Patanè/Trimble Inc.

Group Discussion (P24-20891)

Reihaneh Samsami/University of New Haven

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 202A

Open-Book Negotiations 101: Strategies and Challenges

Ghada Gad, California State Polytechnic University, Pomona, presiding

Sponsored By Standing Committee on Project Delivery Methods

The transportation industry is moving toward an increased use of Alternative Contracting Methods (ACMs), such as Progressive Design-Build (PDB), Construction-Manager at Risk (CMR), and Public–Private Partnerships (P3s). These ACMs are mostly based on open-book negotiations during the pre-award period. This workshop will focus on a) the concept of open-book negotiations, b) the benefits of open-book negotiations in mitigating risk, c) challenges faced and successful practices to address them, d) the parameters and constraints which negotiations occur, and e) cases studies where various open-book negotiation were implemented. This workshop also includes hands-on hypothetical scenario for the participants to work on.

Introduction to Open-Book Negotiations Benefits, Challenges, and Successful Practices (P24-21165)

John Carlson/Sundt Construction

Conducting Open-Book Negotiations – Legal Perspective (P24-21169)

Ann-Therese Schmid/Nossaman LLP

Conducting Open Book Negotiations: The Owner’s Perspective (P24-21166)

Kevin Hagness/Minnesota Department of Transportation

Conducting Open Book Negotiations: The Contractor’s Perspective (P24-21167)

Christopher Robinette/Granite Construction, Inc.

Conducting Open-Book Negotiations: The Consultant or ICE Perspective (P24-21168)

Geordie Bundock-Livingston/WSP, Kelli McNutt/KMC Construction Consulting

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 204AB

Implementing New Performance Tests into Pavement Quality Assurance Programs

Tim Aschenbrener, Federal Highway Administration (FHWA), presiding

Richard Bradbury, Maine Department of Transportation, presiding

Sponsored By Standing Committee on Quality Assurance Management, Standing Committee on Concrete Pavement Construction and Rehabilitation, Standing Committee on Production and Use of Asphalt, Standing Committee on Asphalt Materials Selection and Mix Design

This workshop will be an interactive session to discuss how performance tests can be successfully incorporated into an asphalt or concrete pavement QA program. The format will be short presentations on practical considerations for implementing tests related to balanced mix design for asphalt or performance engineered mixes for concrete into agency specifications. This will be followed by breakout sessions to identify challenges and discuss potential strategies to aid with implementation. The breakout groups will answer the following questions and present them to the larger group for discussion: What are the biggest challenges to implementation? What resources will aid specification development? What knowledge gaps need to be addressed?

Pavement Quality Assurance Overview (P24-20424)

Tim Aschenbrener/Federal Highway Administration (FHWA)

What’s My Limit?: Practical Considerations for Specification Development (P24-20425)

Richard Bradbury/Maine Department of Transportation

Measuring Durability-Related Properties to Construct Permanent Concrete Pavements (P24-20426)

Angela Folkestad/CO/WY Chapter of ACPA

Balanced Mix Design Implementation in Practice: An Asphalt Contractor’s Perspective (P24-20427)

Cheng Ling/Pike Industries, Inc.

Performance-Engineered Mixtures: Addressing Years of Outdated Specifications and Practices in the Concrete Community (P24-20428)

Michael Praul/Federal Highway Administration (FHWA)

Practices and Challenges in Incorporating Balanced Mix Design into Quality Assurance (P24-20429)

Derek Nener-Plante/Federal Highway Administration (FHWA)

1017

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 102A

All About Concrete Pavement Curing

Robert Conway, Federal Highway Administration (FHWA), presiding

Robert Spragg, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Concrete Pavement Construction and Rehabilitation, Standing Committee on Properties of Concrete and Constituent Materials, Standing Committee on Durability of Concrete

Proper curing of concrete pavements will reduce curling and warping, resulting in smoother pavements and a reduced risk of premature cracking. The benefits to proper curing can help achieve long-lasting, sustainable concrete infrastructure and minimize the impact of construction operations. In recent years, interest in concrete curing has come to the forefront. Studies have been initiated to quantify the impact of curing through newly developed technologies. Best practices for concrete curing are available from agencies that are focused on good curing. This workshop spotlights the best practices and recent research on concrete curing.

General Overview on Curing (P24-20002)

Peter Taylor/Iowa State University

U.S. Department of Transportation Perspective and Best Practices for Concrete Curing (P24-20003)

Maria Masten/Minnesota Department of Transportation

Contractor's Perspective on Curing (P24-20127)

Hugh Luedtke/Ajax Paving Industries, Inc.

Methods, Measurements, and Implications of Curing Effectiveness on Concrete Pavement Performance (P24-20004)

John Kevern/University of Missouri, Kansas City, Dan Zollinger/Texas A&M University, College Station

Embedded Sensor for Quantification of Curing Effectiveness (P24-20005)

Emily Sassano/Sciperio

1018

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 209C

Managing Abandoned or Out-of-Service Facilities in Transportation Rights-of-Way

Roy Sturgill, Iowa State University, presiding

Sponsored By Standing Committee on Utilities

This workshop will explore the effective practices of managing abandoned and out-of-services utility facilities in transportation rights-of-way.

Current Practices with OOS Facilities in Delaware (P24-20010)

Eric Cimo/Delaware Department of Transportation

Summary of NCHRP 08-148 (P24-20011)

Edgar Kraus/Texas A&M Transportation Institute

Case Studies in Managing Abandoned and Out-of-Service Utilities in Transportation Rights-of-Way (P24-20012)

Jesse Cooper/HDR

1019

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 209AB

Geotechnical Modeling and Monitoring: Where Prediction and Reality Meet

Derrick Dasenbrock, Federal Highway Administration (FHWA), presiding

Georgette Hlepas, U.S. Army Corps of Engineers (USACE), presiding

Joel Swenson, Barr Engineering Company, presiding

Sponsored By Standing Committee on Geotechnical Instrumentation and Modeling, Standing Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials, Standing Committee on Transportation Earthworks, Standing Committee on Stabilization of Geomaterials and Recycled Materials

Transportation projects are often constructed at sites with variable geology and site conditions; geotechnical risks may be substantial on large projects with schedule demands, constrained budgets, and safety considerations. Computational modeling can reveal design and construction risks and predict behavior; instrumentation and monitoring can measure actual behavior and confirm, or refute, predictions providing both owners and contractors valuable feedback on the actual performance of constructed works. Beginning with specific case-study examples, and through a guided case study exercise, this workshop will explore how instrumentation, monitoring, and modeling are applied to projects.

Introduction (P24-20824)

Derrick Dasenbrock/Federal Highway Administration (FHWA)

Case-history #1: Levee Performance with Implications for Embankments, Slopes, and Stability (P24-20822)

Georgette Hlepas/U.S. Army Corps of Engineers (USACE)

Case History #2: Evaluating the Subsurface from Space: InSAR Insights on Selected USACE Projects (P24-20826)

Georgette Hlepas/U.S. Army Corps of Engineers (USACE)

History #3: Complex Geology meets Complex Design and Complex Construction: I-35W in Minneapolis (P24-20823)

Joel Swenson/Barr Engineering Company

Case History #4: An Old Mine Works, a New Bridge, and a Purpose-Driven Instrumentation Program (P24-21531)

Joel Swenson/Barr Engineering Company

Guided Discussion and Participant Evaluation on a Case History Challenge Problem (P24-21528)

Georgette Hlepas/U.S. Army Corps of Engineers (USACE), Joel Swenson/Barr Engineering Company

Workshop Session and Closing (P24-20825)

Derrick Dasenbrock/Federal Highway Administration (FHWA)

1020

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 204C

The Use of Artificial Intelligence for Site Characterization and Pile Design

Nick Machairas, Haley & Aldrich, Inc., presiding

ZhiQiang Chen, University of Missouri, Kansas City, presiding

Sponsored By Standing Committee on Foundations of Bridges and Other Structures, Standing Committee on Seismic Design and Performance of Bridges, Subcommittee on Geoseismic Issues of Bridges (with AKG70)

Accurate assessment of soil properties and foundation performance can significantly enhance the safety, reliability, and cost-effectiveness of bridge foundations. This workshop presents a unique opportunity to leverage high-quality geotechnical and deep foundation data from a large infrastructure project in California and apply Machine Learning techniques to develop predictive models. The data and example analyses are distributed online at <https://www.kaggle.com/competitions/trb-2024-site-characterization-and-pile-design>.

Welcome, Dataset Overview, and Problem Definition (P24-20879)

Nick Machairas/Haley & Aldrich, Inc.

Overview of Predictive Analytics and Presentation of Example Analyses (P24-20880)

ZhiQiang Chen/University of Missouri, Kansas City, Lorenzo Peve/: Haley and Aldrich

Hands-On Group Breakout Sessions, Short Presentations, and Whole-Group Discussions (P24-20882)

Nick Machairas/Haley & Aldrich, Inc., ZhiQiang Chen/University of Missouri, Kansas City, Lorenzo Peve/: Haley and Aldrich

(continued)

Wrap-Up (P24-20881)

Nick Machairas/Haley & Aldrich, Inc.

1021

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 207B

Opportunities, Challenges, and Perspectives on Base and Subgrade Stabilization with Nontraditional Stabilizers

Lulu Edwards, U.S. Army Corps of Engineers (USACE), presiding

Sponsored By Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials, Subcommittee on Sustainable and Resilient Pavements, Subcommittee on Young Members

Base and subgrade stabilization additives are used to increase the strength and stiffness of road foundations in weak and susceptible soils. While traditional non-proprietary additives (e.g., cement, lime, fly ash) are the most commonly used for these applications, non-traditional and non-proprietary stabilizers (e.g., geopolymers, selected ionic stabilizers, industry by-products, and other non-proprietary stabilizers) have garnered interest for similar applications. This workshop will include panel-led presentations of the recent advancements, opportunities, challenges, and perspectives in using non-traditional stabilizers. The last part of the workshop will be a panel discussion.

Stabilization of Geomaterials with Different Polymer Additives (P24-20103)

Anand Puppala/Texas A&M University, College Station, Nripojyoti Biswas/Texas A&M University, College Station

Design, Construction, and Performance Criteria That Should Be Considered for Base and Soil Stabilization (P24-20105)

Larry Peirce/LHOIST

Geochemical Methods for Evaluating Geomaterials Stabilized with Nontraditional Stabilizers (P24-20106)

Pavan Akula/Oregon State University

Military Research and Guidance Using Nontraditional Stabilizers (P24-20104)

Jeb Tingle/U.S. Army Corps of Engineers (USACE)

Application of Engineered Water Repellency to Improve Moisture Resistance of Subgrade Soils (P24-20107)

Bora Cetin/Michigan State University

Panel Discussion (P24-20625)

Lulu Edwards/U.S. Army Corps of Engineers (USACE), Anand Puppala/Texas A&M University, College Station, Nripojyoti Biswas/Texas A&M University, College Station, Larry Peirce/LHOIST, Pavan Akula/Oregon State University, Jeb Tingle/U.S. Army Corps of Engineers (USACE), Bora Cetin/Michigan State University

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 206

Climate Change Effects on Asphalt Mixture Performance Prediction: What Are the Gaps and Challenges?

Jamilla Teixeira, University of Nebraska, Lincoln, presiding
 Yong-Rak Kim, Texas A&M University, College Station, presiding
 Dave Mensching, Federal Highway Administration (FHWA), presiding
 Silvia Caro, Universidad de Los Andes, presiding
 Eshan Dave, University of New Hampshire, presiding
 Shane Underwood, North Carolina State University, presiding
 Hao Wang, Rutgers University, presiding

Sponsored By Standing Committee on Asphalt Mixture Evaluation and Performance, Standing Committee on Production and Use of Asphalt, Standing Committee on Binders for Flexible Pavement, Standing Committee on Asphalt Materials Selection and Mix Design, Subcommittee on Advanced Models to Understand Behavior and Performance of Asphalt Mixtures, Standing Committee on Design and Rehabilitation of Asphalt Pavements, Standing Committee on Pavement Maintenance

The impact of climate change on transportation infrastructure is a topic of critical interest. Future weather patterns will influence the thermal and moisture impact to asphalt concrete mixture properties and performance in flexible pavements. Thus, the characterization of coupled environmental–mechanical influences will need to be adapted, as the balance between load-related and environmental-related phenomenon is likely to shift. As such, better understanding and modeling of coupled phenomenon will become increasingly important for proper material selection and design. This workshop will share recent advances in this topic and discuss the challenges, opportunities, and perspectives through group and panel discussions.

How We Can Make Pavement Networks More Resilient Against Climate Change Using Mechanistic-Empirical Methods (P24-20079)

Muhammed Emin Kutay/Michigan State University

Implications of Climate Change on the Aging of Asphalt Mixtures (P24-20080)

Shane Underwood/North Carolina State University

Impact of Climate Change on Moisture Damage of Asphalt Mixtures: Modeling Efforts and Challenges (P24-20081)

Yong-Rak Kim/Texas A&M University, College Station

Changing climate and its impacts on transportation infrastructure (P24-20078)

Trevor Meckley/National Oceanic and Atmospheric Administration (NOAA)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 207A

Pavement Resilience: Effects of Extreme Flooding and Wildfire Events on Pavement Systems: Local, State, and Federal Experiences

James Mack, CEMEX, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Concrete Pavements, Subcommittee on Sustainable and Resilient Pavements, Standing Committee on Design and Rehabilitation of Asphalt Pavements

This workshop will present agency experiences, lessons learned, successes and failures, and the current state of the knowledge for designing and constructing resilient pavements. It will consist of an opening presentation that reviews current pavement resilience research under way and then presents three case studies, two focused on pavement performance under extreme flooding conditions and one looking at the impacts of wildfires. This will be followed by a panel discussion of approaches for the design, construction, and maintenance of resilient roadways. This workshop will close with an engagement activity in which attendees will examine approaches for addressing extreme weather events at both the project and network level.

Federal Perspective of Pavement Resilience (P24-20183)

Amir Golalipour/Federal Highway Administration (FHWA)

Overview of Resilience Research: Concrete (P24-20184)

DAN KING PE/Iowa State University

(continued)

Overview of Resilience Research: Asphalt (P24-20185)

Benjamin Bowers/Auburn University

State Case 1: Resilient Pavement Structures in Houston, Texas – A Hurricane Case Study” (P24-21156)

Andrew Wimsatt/Texas A&M Transportation Institute

Case 2: Flooding Research (P24-21157)

Angel Mateos/University of California, Berkeley

Case 3: Post-fire impact of traffic overload on road pavement from construction vehicles during Marshall Fire rebuild (P24-21158)

Christopher Senseney/University of Colorado, Boulder

State Case 4: North Carolina Resiliency Program (24-00008)

1024

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 103B

Pavement Friction Management, Continuous Pavement Friction Measurement, and Safety Analysis

Magdy Mikhail, Trimble Inc., presiding

Jeffrey Shaw, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Pavement Surface Properties and Vehicle Interaction, Standing Committee on Safety Performance and Analysis, Standing Committee on Pavement Condition Evaluation

This workshop will review recent research focused on developing safety performance functions (SPFs) that include continuous friction and macrotexture measurements on a variety of roadway types. The objectives of the research were to obtain crash modification factors (CMFs) that make the evaluation of pavement friction changes on safety performance and establish investigatory thresholds for friction. The analysis confirmed a strong statistical association between pavement surface frictional properties and crash rates. Investigatory levels are higher for higher friction demand sites. This workshop will present the approach to developing SPFs and CMFs, establishing investigatory thresholds to improve safety performance, and the experience of departments of transportation with this process.

Pavement Friction and Safety Analysis: SPF/C MF Development and Investigatory Thresholds (P24-21453)

Gerardo Flintsch/Virginia Polytechnic Institute

Safety Analysis (P24-21454)

Safety and Friction Enhancement (P24-21456)

MICHAEL VAUGHN/Kentucky Transportation Cabinet

1025

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 201

3-Minute Thesis Competition: Effective Strategies for Communicating Research to a Broad Audience

Jhony Habbouche, Virginia Transportation Research Council, presiding

Niloo Parvinashtiani, Iteris Inc., presiding

Leila Hajibabai, North Carolina State University, presiding

Chieh Ross Wang, Oak Ridge National Laboratory, presiding

Sponsored By Section - Highway Maintenance, Young Members Coordinating Council, Subcommittee on Safety and Operations Group Young Member, Subcommittee on Transportation Infrastructure Group Young Members, Subcommittee on Young Members, Joint Young Members Subcommittee (AKR00 and AKT00), Section - Infrastructure Management and System Preservation

The 3-minute competition is an exciting cross-cutting and interdisciplinary opportunity for young professionals. They have a chance to showcase their research in a concise, engaging way that effectively conveys the key objectives and findings of their research. Each presenter has just 3 minutes to showcase their research to attendees from diverse areas of the transportation industry. The presentations are then followed by a discussion forum with keynote speakers and a panel of expert judges. During this interactive session, the speakers and judges provide valuable feedback on communication skills, offer constructive comments on the presentations, and answer questions from the audience. This competition is open exclusively to young professionals under the age of 35 who are attending the TRB annual meeting.

1026

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 156

Developing Maintenance Research Needs Statements

Scott Lucas, City of Columbus, presiding

Rob Zilay, Dye Management Group, Inc., presiding

Anna Arvidsson, Swedish National Road and Transport Research Institute (VTI), presiding

Paul Pisano, Paul Pisano LLC, presiding

Sponsored By Standing Committee on Roadside Maintenance Operations, Standing Committee on Landscape and Environmental Design, Standing Committee on Maintenance and Operations Management, Subcommittee on Pollinators, Standing Committee on Winter Maintenance, Standing Committee on Road Weather

During the workshop, the group will (1) present an overview of the latest maintenance research activities; (2) provide a refresher and discussion on writing research needs statements, entering them into the Transportation Research Board's Research Needs Statements database, and pursuing funding sources; and (3) discuss collaboration opportunities to identify and prioritize the latest and emerging maintenance research topics that are of greatest concerns. The focus will be on cross-cutting maintenance research needs where the collaboration of two or more committees is needed for developing comprehensive research needs statements.

1027

CM (3.00)



Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 146B

Managing the Impact of Health Emergencies, Food, Fuel Inflation, and Climate Change on Developing Country Transportation

Samuel Zimmerman, World Bank, presiding

Manjiri Akalkotkar, VIA Metropolitan Transit, presiding

Margaret-Avis Akofio-Sowah, WSP, presiding

Sponsored By Standing Committee on Transportation in the Developing Countries

The ravages of the COVID-19 pandemic and the economic crisis it precipitated have been particularly difficult for Africa and Asia's low- and middle-income countries. The inflation impact of COVID-19 has been exacerbated, particularly on food and fuel, by the war in Ukraine. The decline in economic output coupled with rising inflation have been particularly difficult for transport infrastructure (e.g., highway systems) and transport services (e.g., informal public transport [paratransit]). One of the first government activities to be curtailed in times of financial difficulty is street infrastructure maintenance. In lower-income countries, maintenance backlogs are typically long, and the impacts of climate change are already being felt. For informal public transport services, COVID-19 caused ridership and revenue to drop dramatically, as fuel costs have risen. People previously employed in the sector have found themselves jobless, meaning less mobility and access for those most in need. This workshop will explore these problems and present some possible solutions that could be applied to minimize the effects of these disruptions.

Data and Technology Driven Traffic Asset Management in Virginia: A Potential Low-Cost Asset Management Solution for Developing Countries (P24-21136)

Ning Li/Virginia Department of Transportation

Climate Resilient Road Asset Management with Pakistan as an Example (P24-21137)

Jamie Leather/Asian Development Bank

Assessing Climate Vulnerability and Risk and Building Resilience Adaptively and Transformatively (P24-21138)

Adjo Amekudzi-Kennedy/Georgia Institute of Technology

Unpacking Road Asset Management in Sub-Saharan Africa: Challenges and Opportunities (P24-21139)

CHARLES ADAMS/Kwame Nkrumah University of Science and Technology

Reform of Freetown's Public Transport System (P24-21140)

Hindolo Shiaka/Sierra Leone Ministry of Transport and Aviation

The Toll of COVID-19 on Inequality: Reshaping Transport for an Inclusive Recovery (P24-21142)

Lynn Scholl/Inter-American Development Bank

Data Integrated Limited (P24-21143)

Mary Mwangi/Data Integrated Limited

1028

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 146C

At the Intersection of Disability Justice, Pedestrian Safety, and Health

Yochai Eisenberg, University of Illinois, Chicago, presiding

Sponsored By Standing Committee on Accessible Transportation and Mobility, Standing Committee on Transportation and Public Health, Standing Committee on Pedestrians

Cities are interested in creating more livable, vibrant communities where all people feel safe walking and wheeling. However, current planning, policies, and funding have led to a patchwork of pedestrian infrastructure accessibility, hindering the opportunity to walk and wheel safely. Panelists will address the reasons behind this inaccessibility and explain the urgency to meet the requirements of the Americans with Disabilities Act (ADA). New approaches will be discussed to integrate the objectives of the ADA with those of public health, safety, and environmental planning. An interactive activity will showcase open-data tools for mapping, analyzing, and visualizing the conditions of pedestrian and transit infrastructure. Attendees will create an action plan for using these tools to integrate multiple community objectives and improve walking and wheeling for all people.

Pedestrian Path Accessibility, Regulations, and Enforcement: The Climate Is Right (P24-21352)

Judy Shanley/Easterseals

Artificial Intelligence Community Contributions to Map and Assess Transit Accessibility (P24-21353)

Jon Froelich/University of Washington

The Link Among Non-Driving, Safety, and Health (P24-21354)

Anna Zivarts/Disability Rights Washington

Inclusive, Accessible Design Can Contribute to Culture of Sustainability (P24-21355)

Brent Chamberlain/Utah State University

Link to Community Participation and Employment Outcomes (P24-21356)

Keith Christensen/Utah State University

Visualization Tools for Community Planner (P24-21357)

Minoo Abrishami/Utah State University

1029

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 140

Improving Operational Resilience by Managing Risk from Insider Threats

Michael Wigal, CERT/SEI/CMU, presiding

Sponsored By Standing Committee on Systems, Enterprise, and Cyber Resilience, Standing Committee on Critical Transportation Infrastructure Protection, Standing Committee on Transportation for National Defense, Joint Subcommittee on Information Systems in Construction Management (with AED30)

Effective insider risk management is an enterprise-wide activity that leverages data, tools, authorities, experts, and controls from disparate sources within an organization to make it operationally resilient to insider threats. In this facilitated workshop, the Software Engineering Institute will present its framework for developing and evaluating effective risk management capabilities, derived from extensive experience building and evaluating insider threat programs and analyzing more than 3,000 incidents involving insider activity. At the conclusion of this workshop, participants will have actionable steps they can take for adopting an enterprise risk management approach to insider threat program building, strategies for gaining enterprise-wide participation for an insider threat program, suggestions on how to ensure the long-term success of insider risk management efforts, and skills they can use to increase the efficiency, consistency, and accuracy of their organization's insider threat prevention, detection, and response capabilities.

1030

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 147B

Alternative Uses of Right-of-Way: Expanding Connectivity and Electrification for Electric Vehicle Charging Infrastructure

Samer Dessouky, University of Texas, San Antonio, presiding

Sponsored By Standing Committee on Resource Conservation and Recovery, Standing Committee on Utilities

Alternative uses of right-of-way aim to use the full value and productivity of the asset while reducing or eliminating maintenance expenses for state DOTs. This workshop will discuss issues such as underground utility broadband accommodation on controlled access right-of-way, the state of the practice, successful examples, and lessons learned. This workshop will also discuss more recent alternative uses of right-of-way involving efforts for decarbonization, clean energy, hydrogen fueling infrastructure, electrification, and electric transmission. Discussions will focus on state DOT experiences and successful partnerships with utilities and third parties, including the state of the practice, legal challenges, and risk assessments.

Perspectives on Climate, Resiliency, Permitting, and Decarbonization in Transportation (P24-20437)

Andrew Wishnia/CityFi

Analysis of Right-of-Way for Clean Energy and Connectivity Project Suitability (P24-20438)

Laura Rogers/The Ray

State Department of Transportation Perspectives in the Reuse of Right-of-Way for Energy and Sustainability Projects (P24-20439)

Jessica Oh/Minnesota Department of Transportation

Texas Department of Transportation Governance Practices for Strategic Use of Right-of-Way (P24-20440)

Miguel Arellano/Texas Department of Transportation, Lori Wagner/Texas Department of Transportation

1031 CM (3.00)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 145A

Accelerating Mobility Innovation: Overcoming Challenges and Re-envisioning Opportunities, Part 1 (Part 2, Session 1071)

Gwo-Wei Torng, Federal Transit Administration (FTA), presiding

Adam Cohen, University of California, Berkeley, presiding

Sponsored By Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Accessible Transportation and Mobility, Standing Committee on Innovative Public Transportation Services and Technologies, Subcommittee on Equity of Innovative Mobility Services and Technologies, Standing Committee on Public Transportation Marketing and Fare Policy, Standing Committee on Passenger Intermodal Facilities, Standing Committee on Transit Data, Standing Committee on Passenger Rail Transportation

This workshop will feature the latest innovations in mobility wallets, microtransit, shared automated vehicles, and artificial intelligence applications in public transit and shared mobility. Broadly, this workshop will explore emerging lessons from demonstrations, considerations for planning and implementing these strategies, and opportunities to enhance equitable outcomes.

Spotlight Presentation (P24-20156)

Karina Ricks/CityFi

Mobility Wallets: The Intersection of Payment and Equity (P24-20157)

Carol Schweiger/Schweiger Consulting LLC, Valerie Lefler/Feonix Mobility Rising, Brenda Bustillos/Texas Department of Transportation, Michael Randolph/Oakland Department of Transportation, Avital Shavit/Los Angeles County Transportation Authority (LACMTA)

Spotlight Presentation (P24-20060)

Todd Petersen/_

Innovative Microtransit 2.0 (P24-20059)

Adam Cohen/University of California, Berkeley, Graham Currie/Monash University, Christopher Pangilinan/MTA New York City Transit, Aparna Paladugu/Via Transportation, Alvaro Villagran/Shared-Use Mobility Center

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 151B

Microtransit and Other On-Demand General Public Services Provided by Transit Agencies

Will Rodman, Texas A&M Transportation Institute, presiding

Todd Hansen, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Rural, Intercity Bus, and Specialized Transportation, Standing Committee on Accessible Transportation and Mobility

This workshop will focus on planning considerations and successful examples of microtransit and other (exclusive ride) on-demand services for the general public that are provided or subsidized by transit agencies. Presentations will be given on successful services that (1) reflect various levels of transit agency involvement where a transit agency has had direct control over service delivery, services that rely more heavily on the private providers, and combinations thereof, as well as user-side subsidy services; and (2) have been implemented in urban, suburban, small urban, and rural settings and with different service objectives and local characteristics in mind.

Presentation (P24-20803)

Chad Ballentine/CapMetro

Presentation (P24-20807)

Tommy Henricks/Star Transit

Presentation (P24-20809)

Scott Marr/Metro Tulsa Transportation Authority

Presentation (P24-20810)

Shaina Quinn/Utah Transit Authority

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 144AB

How Transit Agencies Navigate Within Our Communities in Crisis

Lisa Staes, USF Center for Urban Transportation Research, presiding

Sponsored By Standing Committee on Transit Safety and Security

Whether we are talking about communities dealing with deaths and illnesses from increased opioid use, other drugs, or other forms of substance abuse; homelessness and those who are otherwise unsheltered; mental and behavioral health challenges; or those who are experiencing other crises, transit is a microcosm of these communities. Researchers will address some of these challenges and methods to address them. In addition, WMATA and SEPTA will discuss how they are working with their communities to address these challenges in support of resilient and secure mobility. This will include presentations of best practices from the nation's transit agencies and from researchers. FTA's Office of Transit Safety and Oversight will also participate.

Is Personal Safety (Fear of Crime and Anti-Social Behavior) a Major Contributor to Post-Pandemic Transit Avoidance? (TRBAM-24-03240)

Rumana Sarker/Monash University, Graham Currie/Monash University, James Reynolds/Monash University

Bringing Riders Back to Public Transit by Addressing (Perceptions of) Crime (TRBAM-24-04114)

Emilia Heintz/University of Texas, Austin, Deb Niemeier/University of Texas, Austin, Alex Karner/University of Texas, Austin

Misconduct on Public Transit: An Exploratory Analysis Using the Comments Formerly Known as Tweets (TRBAM-24-04786)

Jordon Larot/Mineta Transportation Institute, Egbe-Etu Etu/Mineta Transportation Institute, Asha Agrawal/Mineta Transportation Institute, Imokhai Tenebe/Mineta Transportation Institute

SEPTA's Efforts to Address Community Challenges and Improve Transit Safety and Security (P24-20261)

Sophia Hendry/Southeastern Pennsylvania Transportation Authority (SEPTA)

WMATA's Approach to Navigating Growing Mental Health and Community Issues (P24-20366)

LaRita Mullins/Washington Metropolitan Area Transit Authority, Travis Jones/Metro Transit Police Department, Washington, DC

1034

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 143AB

Breaking Down Data Silos Using the Mobility Data Interoperability Principles

Thomas Craig, Washington State Department of Transportation, presiding

Elizabeth Sall, UrbanLabs LLC, presiding

Scott Frazier, Compiler, presiding

Sponsored By Standing Committee on Transit Data, Standing Committee on Accessible Transportation and Mobility, Standing Committee on Rural, Intercity Bus, and Specialized Transportation

This workshop will begin with an overview of (1) the Mobility Data Interoperability Principles (MDIP), a framework for a modern mobility technology industry based on open data standards, and (2) MDIP's procurement resource, a toolkit for agencies to procure technology that supports open standards and agency data rights. Attendees will then join one of three groups to develop strategic MDIP priorities in the areas of (1) stakeholder resources, (2) MDIP enforcement, and (3) new data standards.

Moderator: Welcome Session and Procurement Resource Discussion (P24-20905)

Gwo-Wei Torng/Federal Transit Administration (FTA)

Moderator: Future MDIP Resources (P24-20906)

Andrew Glass Hastings

Moderator: Data Standards Gaps (P24-20907)

Gretchen Newcomb/MobilityData

Moderator: Data Standards Gaps (P24-20908)

Karina Ricks/CityFi

Presentation: MDIP Overview (P24-20909)

John Levin/Metro Transit, Minneapolis-St. Paul

Moderator: MDIP Compliance (P24-20910)

Al Benedict/Shared-Use Mobility Center

Presentation: MDIP Overview (P24-20912)

Logan Nash/Massachusetts Bay Transportation Authority (MBTA)

1035

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 144C

Sustainability and Resiliency Initiatives in the Freight Rail Industry Sector

Kevin Keller, HDR, presiding

Sponsored By Standing Committee on Freight Rail Transportation, Standing Committee on Railroad Infrastructure Design and Maintenance, Standing Committee on Freight Transportation Planning and Logistics, Joint Subcommittee on Intermodal Freight Terminal Design and Operations (AW010 and AT045)

This workshop will provide a discussion of current and future sustainability and resiliency initiatives being implemented, planned, and researched for freight rail transportation and facilities. It will feature panel presentations and breakout discussions.

Panel Discussion (P24-21033)

Arielle Giordano/CPKC, Michael Johnson/Federal Railroad Administration (FRA), Will Kirby/HDR, Mike Swaney/BNSF Railway

1036

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 145B

Decarbonizing Urban Freight: Planning, Equity, and Engagement Strategies to Meet National Goals

DJ Mason, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Urban Freight Transportation, Standing Committee on Transportation Energy

The United States has adopted a vision of a low-carbon freight transportation future by 2050. This workshop will ask transportation researchers and practitioners to collectively define gaps in research, practice preventing the country from achieving a decarbonized freight future, and prioritize a research agenda that will support both the public and private sectors in tackling these challenges. Attendees will be asked to craft research needs statements related to building the infrastructure required for decarbonized freight last mile strategies. At the end of the workshop, groups of attendees will be asked to “pitch” their research needs ideas to the collective group to refine their ideas and build consensus for the top research needs.

Decarbonizing Urban Freight: California Air Resources Board Perspective (P24-21056)

Ajay Mangat/California Air Resources Board (CARB)

Decarbonizing Urban Freight: Volvo Perspective (P24-21057)

Aravind Kailas/Volvo Group North America

Decarbonizing Urban Freight: Environmental Protection Agency SmartWay Perspective (P24-21058)

Sam Waltzer/U.S. Environmental Protection Agency (EPA)

1037

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 147A

The Intersection of Climate Resilience and Freight Resilience

Daniel Haake, Cambridge Systematics, presiding

Sponsored By Standing Committee on Trucking Industry Research

Two current issues in transportation are climate resilience and freight resilience, but these areas often lack a shared vocabulary. As transportation agencies grapple with extreme weather, they are also striving to provide a robust network to support freight movement. Ultimately, the intersection of these two conversations is physical infrastructure. The purpose of this workshop will be to hear success stories and lessons learned regarding these challenges. This workshop will be a combination of case study presentations, a panel discussion, and breakout groups. Potential case studies include using GIS tools to evaluate assets and real-time freight data to better assess freight movements.

1038

CM (3.00)

Sunday, 09:00 a.m. - 12:00 p.m., Convention Center, 146A

Emerging Safety Hazards in Commercial Aviation

Gaël Le Bris, WSP, presiding

Willie Brown, University of Maryland, Eastern Shore, presiding

Sponsored By Standing Committee on Aviation Safety, Security and Emergency Management, Subcommittee on Young Members-Aviation, Standing Committee on Environmental Issues in Aviation, Standing Committee on Airfield and Airspace Performance

During this workshop, participants will identify, explore, and discuss emerging safety hazards in commercial aviation, including the emergence of novel aircraft technologies, aviation users, concepts of operations, artificial intelligence, and global threats such as cyberattacks, pandemics, and climate change. TRB Special Report 344: Emerging Hazards in Commercial Aviation will be used as a benchmark for discussions where it identified managing safety in the face of climate change, increasingly complex systems, and changing workforce needs and new players, business models, and technologies as potential future challenges.

The State of Aviation Safety (P24-20689)

Katherine Wilson/National Transportation Safety Board (NTSB), Amy Pritchett/Pennsylvania State University, Brian Holguin/Flight Safety Foundation, Kyle Quakenbush/MITRE Corporation

(continued)

Workshop Activities (P24-20690)

Gaël Le Bris/WSP, Willie Brown/University of Maryland, Eastern Shore, ETAHE JOHNSON/University of Maryland, Eastern Shore, Carla Hackworth/Federal Aviation Administration (FAA), Patricia Vieira/WSP, Edwin Tait/OST-R/Volpe Center, Gregory Sanders/Jviation, Arya Alizadeh/Mead & Hunt, Inc.

Sunday, 10:00 a.m. - 02:00 p.m., Convention Center, Hall A

Careers in Motion Networking Fair

Sponsored By Executive Committee

1039

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, Ballroom C

Early Academic Successful Careers: Resources and Advice

Daniel Vignon, New York University, presiding
 Atiyya Shaw, University of Michigan, Ann Arbor, presiding
 Jason Hawkins, University of Nebraska, Lincoln, presiding
 Eleftheria Kontou, University of Illinois, Urbana-Champaign, presiding
Sponsored By Young Members Coordinating Council

This workshop will feature three panels of prominent transportation academics and researchers, who will provide advice to young members, students, and prospective faculty on successful careers in academia. Panel topics include effective practices for successful scientific communication and outreach, integrating equity in transport research and establishing diverse and inclusive research laboratories and classes, and leading and/or participating in multi-institutional research collaborations.

Effective Scientific Communication and Outreach (P24-20996)

Stephen Wong/University of Alberta, Joseph Chow/New York University, John Edwards/University of Illinois, Urbana-Champaign

Equity in Transport Research, Teams, and Education (P24-20997)

Alison Conway/City College of New York, Janille Smith-Colin/Southern Methodist University, Deb Niemeier/University of Maryland, College Park

Establishing Multi-Institutional Collaborations (P24-20998)

Karen Philbrick/Mineta Transportation Institute, Chandra Bhat/University of Texas, Austin, Constantine Tarawneh/University of Texas, Rio Grande Valley

1040 CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, Salon A

Planning for the Infrastructure Needs of Micromobility: Bike Lanes, Parking, and Electrification

Calvin Thigpen, Lime, presiding
Sponsored By Standing Committee on Bicycle Transportation, Standing Committee on Pedestrians, Standing Committee on Transportation Safety Management Systems, Standing Committee on Performance Effects of Geometric Design, Standing Committee on Transportation Energy, Standing Committee on Innovative Public Transportation Services and Technologies

Micromobility has rapidly evolved in the last decade—from e-bikes to e-scooters to e-trikes—spanning personally owned and shared models and including goods and people movement. This development has spurred cities to consider how to plan and design infrastructure for these new modes, from bike lanes to parking to electrification. Workshop participants will learn the latest in micromobility infrastructure planning and design, across outcomes including safety, equity, and mode shift.

Introductory Remarks (P24-21498)

Shari Schaftlein/Federal Highway Administration (FHWA)

(continued)

Designing Micromobility Infrastructure for Movement (P24-21025)

Darren Buck/Federal Highway Administration (FHWA), Dillon Fitch-Polse/Institute of Transportation Studies (ITS), Alison Conway/City College of New York, Stefanie Seskin/National Association of City Transportation Officials, Jeremy Chrzan/Toole Design Group, LLC

Planning for Micromobility Parking (P24-21026)

John MacArthur/Portland State University, Sian Meng/University of Oregon, Greg Matlesky/District Department of Transportation, Rachel Yoka/International Parking & Mobility Institute

Best Practices for Micromobility Electrification (P24-21027)

Tejus Shankar/Lyft, Inc., Carl Sundstrom/New York City Department of Transportation, Debs Schrimmer/U.S. Department of Energy (DOE), Adam Barowy/Fire Safety Research Institute, Shelley Francis/EVNoire

1041

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 102B

Automated Vehicle Testing and Evaluation: Procedures and Methods

Shan Bao, University of Michigan, presiding

Jing Feng, North Carolina State University, presiding

Yi-Ching Lee, George Mason University, presiding

Sponsored By Standing Committee on Human Factors of Vehicles, Standing Committee on Human Factors of Infrastructure Design and Operations

The design and development of automated vehicle (AV) technologies require rigorous testing and evaluation under dynamic conditions. Testing standards for human-driven vehicles were established a long time ago. However, current standards cannot be applied to AVs, because they often assume the presence of a human driver, who conducts the driving tasks. It is very important to develop test procedures and identify applicable test scenarios (user cases) for AVs to evaluate the "intelligence" of the vehicle. This workshop aims to identify standards and procedures, and scenarios development methods and tools for AVs within the mixed traffic system. Attendees will discuss road AV testing procedures and methods with respect to the limitations.

National Highway Traffic Safety Administration Study on Automated Vehicle Testing (P24-20775)

Stacy Balk/National Highway Traffic Safety Administration (NHTSA)

Automated Vehicle Testing Methods and Modeling Techniques (P24-20776)

Josh Domeyer/Toyota Motor North America

Automated Driving System Behavior Evaluation (P24-20777)

Azadeh Dinparastdjadid/Waymo

Dense Reinforcement Learning for Safety Validation of Autonomous Vehicles (P24-20778)

Henry Liu/University of Michigan

European Union Study on Automated Vehicle Testing (P24-20779)

Natasha Merat/University of Leeds

Automated Driving System Transit Vehicle on Rural Roadways in Iowa: Lessons Learned (P24-20780)

Omar Ahmad/University of Iowa

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, Salon B

Information Technology Will Not Let Me Work and Operations Technology Will Sink Our Network

Vaishali Shah, Applied Engineering Management Corporation, presiding

Sponsored By Standing Committee on Freeway Operations, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Intelligent Transportation Systems, Standing Committee on Information Systems and Technology, Standing Committee on Systems, Enterprise, and Cyber Resilience

Complex networks of data and digital infrastructure are critical to transportation operations. Information technology (IT) and operations staff must work together to make available operational technologies that support a secure, safe, and efficient transportation system. This workshop for IT and transportation practitioners will help overcome disconnects and improve collaboration to address cybersecurity, data governance, procurement, and other related issues that impede the delivery of services (e.g., emergency response, transportation systems management and operations, maintenance, asset management). Complete this survey before the workshop <https://aemdatasci.wufoo.com/forms/si8625011zxcke/>

Context Setting: Various Information Technology and Operational Technology Models, Opportunities, and Challenges (P24-21507)

Vaishali Shah/Applied Engineering Management Corporation

New Jersey: Various Information Technology and Operational Technology Models, Opportunities, and Challenges (P24-21499)

Steven Prichard/New Jersey Department of Transportation, Bryan Kepler/NJ Office of Information Technology, Sal Cowan/New Jersey Department of Transportation

Tennessee: Various Information Technology and Operational Technology Models, Opportunities, and Challenges (P24-21500)

Lee Smith/Tennessee Department of Transportation

Virginia: Various Information Technology and Operational Technology Models, Opportunities, and Challenges (P24-21501)

Murali Rao/Rao Strategic Advising, LLC, Dean Gustafson/Prime AE Group, Inc

Rapid Fire Topical Delivery from Across the Country (P24-21508)

Beverly Kuhn/Texas A&M Transportation Institute

North Carolina: Procurement (P24-21502)

Jennifer Portanova/North Carolina Department of Transportation

New Jersey: Security (P24-21503)

Steven Prichard/New Jersey Department of Transportation

Texas: Accessibility of Systems and Data (P24-21504)

Jianming Ma/Texas Department of Transportation

New Hampshire: Information Technology and Operating Costs (P24-21505)

Susan Klasen/New Hampshire Department of Transportation

Federal Highway Administration: Evolving Roles and Processes (P24-21506)

Jim Hunt/Federal Highway Administration (FHWA)

Niagara International Transportation Technology Coalition: Data Management (P24-21544)

Athena Hutchins/Niagara International Transportation Technology Coalition

1043

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, Salon C

Equity, Access, and Safety in Traffic Signals

Thomas Stiles, SWARCO McCain Inc., presiding

Sponsored By Standing Committee on Traffic Signal Systems, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation, Standing Committee on Highway Capacity and Quality of Service

The Advanced Transportation Technologies and Innovative Mobility Development (ATTIMD)/Advanced Transportation Technology and Innovation (ATTAIN) provides competitive grants for advanced transportation technologies. The traditional focus of traffic signal systems and other retiming efforts has been to move cars along an arterial at high rates of speed. The metrics within the Federal Highway Administration (FHWA)-funded Automated Traffic Signal Performance Measures program have focused more on "arrivals on green" and less on the quality of service for pedestrians who are attempting to access the bus stop. The intent of this workshop will be to improve the focus of existing practice and future research toward the needs of people.

Addressing Equity in the City of Portland's Traffic Signal Operations (P24-21518)

Phillip Armand/Portland State University, Maseeh

Public Right-of-Way Accessibility Guidelines Updates and Their Impacts on the Visually Disabled (P24-21519)

Billie Bentzen/Accessible Design for the Blind (ADB)

Establishing Performance Metrics Around Safety and Equity in Trajectory Aware and Priority-Based Systems (P24-21520)

Eric Raamot/Office of the Assistant Secretary for Research and Technology (OST-R)

Research and Guidance on Developing Signal Timings to Reduce Speeding (P24-21522)

Peter Furth/Northeastern University

Updates and Objectives of the Upcoming Clearance Interval Research Effort (P24-21521)

Anuj Sharma/Iowa State University, Burak Cesme/Kittelson & Associates, Inc.

1044

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 103A

Managed Lanes Rising: Technologies and Equity

Richa Ahuja, Indian Institute of Technology, Kharagpur, presiding

Christopher Mwalwanda, CDM Smith, presiding

Sponsored By Standing Committee on Managed Lanes, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Intelligent Transportation Systems, Standing Committee on Vehicle-Highway Automation, Standing Committee on Artificial Intelligence and Advanced Computing Applications, Standing Committee on Traveler Behavior and Values, Standing Committee on Transportation Demand Management, Standing Committee on Public Engagement and Communications, Standing Committee on Equity in Transportation, Standing Committee on Bus Transit Systems

Managed lanes have been at the cutting edge of transportation, both as a policy tool for managing congestion and to assist with technology adoption. The continued expansion of technology to enhance how mobility is provided and the heightened consideration of equity in how mobility is provided have resulted in new possibilities for research in managed lanes. This workshop includes two presentation sessions and an open dialogue breakout session. The presentation sessions will explore the implications of new technologies for the operation and deployment of managed lanes strategies and the ongoing equity considerations facing managed lanes operators. The open dialogue breakout sessions will spotlight topics for practitioners and researchers.

Welcome and Introductions (P24-20333)

Christopher Mwalwanda/CDM Smith

The Road Ahead: Trends and Topics Shaping Managed Lanes and Tolling from 2024 Onward (P24-20332)

Chris Tomlinson/Deloitte LLP, Edward Thomas/Deloitte & Touche LLP

Session 1: Using Technology to Help Identify Safety and Equity Concerns in Managed Lanes (P24-20414)

Sonika Sethi/Leidos, Inc.

Data-Driven Understanding of Tolling Customer Behavior (P24-20415)

Craig Bettmann/HNTB

(continued)

Developing a Connected Vehicle Ecosystem to Enable Both Lane-Based and Miles-Based Pricing (P24-20416)

Maureen Bock/Oregon Department of Transportation

Advances in Vehicle Occupancy Detection For Tolling (P24-21560)

Peter Marshall/D2 Traffic Technologies

Metropolitan Transportation Commission Next-Generation Freeways (P24-20418)

Barbara Laurenson/Metropolitan Transportation Commission (MTC)

AIVIA Smart Roads at I-66 Outside the Beltway (P24-21490)

Jennifer Duthie/Cintra US Services LLC

Session 2: Equity Challenges, Implications, and Potential Solutions in Managed Lanes (P24-20419)

Ian Barnes/Fehr & Peers

Understanding Travel Behavior Since COVID-19 and Introducing Cognitive Bias to Mitigating Speeding on Managed and Free Lanes (P24-20595)

Erika Spissu/Transurban, Inc.

Equity Implications of Managed Lanes with Transit Services (P24-20596)

Baruch Feigenbaum/Reason Foundation

Equity in Tolling: A California Perspective (P24-20597)

Murali Ramanujam/Santa Clara Valley Transportation Authority (VTA)

Implementing Discounts and Credits for People with Low Incomes in Oregon's Proposed Tolling Program (P24-20598)

Gabor Debreczeni/Steer, Garet Prior/Oregon Department of Transportation

Tolling Discount Program on I-70 East of Denver, Colorado (P24-20599)

Simon Logan/Colorado Department of Transportation

Breakout Session: Participant Perspectives and Feedback for the Development of Technology and Equity-Based Research on Managed Lanes (P24-20600)

Ed Barry/Washington State Department of Transportation, Katy Linburg/Carma Technology Corporation

Final Comments on Future Disruptions of Managed Lanes (P24-20601)

Dan Lamers/North Central Texas Council of Governments, Michael Davis/RS&H, Inc.

1045 CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 143C

Difficult Conversations: Taming the Conflict Over Access Management

Chris Huffman, Huffman Corridor Consulting , presiding

Sponsored By Standing Committee on Access Management, Standing Committee on Visualization in Transportation, Standing Committee on Eminent Domain and Land Use, Standing Committee on Tort Liability and Risk Management

Reasonable access to public roadways from private property is a constitutionally protected right. This right can be reasonably regulated but the line between reasonable regulation and a taking of the right (requiring compensation) is in a constant state of flux. NCHRP Report 1032: How to Measure and Communicate the Value of Access Management is a new interactive toolkit now available to users. It includes smart spreadsheet tools, economic talking points, and dashboard visualizations. This workshop presents a court case calling for technical analysis, legal analysis, and visualizations for public and court uses. Participants will use the toolkit to analyze the facts and develop analyses, messaging, and engagement strategies for the case.

Presentation Panel (P24-20800)

Chris Huffman/Huffman Corridor Consulting , Kristine Connolly/Kittelsohn & Associates, Inc., Kristine Williams/KMW Associates, LLC, Jerome Gluck/AECOM, Christopher Kramer/Nossaman LLP, Terri Parker/Missouri Department of Transportation, Frank Broen/Metro Analytics

1046

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 150B

We Have a Tool for That: Tools to Analyze Local-, State-, and National-Level Transportation Trends

Venu Garikapati, National Renewable Energy Laboratory (NREL), presiding

Peggi Knight, Iowa Department of Transportation, presiding

Sponsored By Standing Committee on Statewide/National Transportation Data and Information Management, Standing Committee on Geographic Information Science, Standing Committee on Artificial Intelligence and Advanced Computing Applications

The focus of this workshop is to demonstrate an array of tools that can be leveraged to analyze local-, state-, and national-level transportation trends. The workshop will have focused talks on (1) tools for analyzing passenger and freight travel data, (2) geo-spatial analysis tools, and (3) tools for infrastructure analyses. This will be followed by a roundtable conversation on the gaps and needs for transportation analysis tools.

Census Transportation Planning Products (P24-20566)

Penelope Weinberger/American Association of State Highway and Transportation Officials

Next-Generation National Household Travel Survey Data Visualization Tool (P24-20570)

G. Patrick Zhang/Federal Highway Administration (FHWA), Habte Kassa/Georgia Department of Transportation

Metropolitan Area Strategic Planning with VisionEval (P24-20878)

Scott Smith/Office of the Assistant Secretary for Research and Technology (OST-R), Jeremy Raw/Federal Highway Administration (FHWA), John Miller/Virginia Department of Transportation

Planning Roadworks and Measuring Real-Time Impact Through the TomTom Data Portal (P24-20572)

Jeroen Brouwer/TomTom

Interdependent Networked Community Resilience Modeling Environment (P24-20569)

Sabarethinam Kameshwar/Louisiana State University

New Data Visualization Tools for Freight Analysis Framework (P24-20808)

Birat Pandey/Federal Highway Administration (FHWA)

Transborder Freight Data Visualization Tool (P24-20573)

Sean Jahanmir/Office of the Assistant Secretary for Research and Technology (OST-R)

Active Routes Visualization Tool (P24-20568)

Jeffrey LaMondia/Auburn University

Real Life Measures for Local Transit Accessibility (P24-20567)

Aly Tawfik/California State University, Fresno

ESRI Experience Builder (P24-20574)

Sage Donaldson/Arizona Department of Transportation, Chapman Munn/High Street Consulting Group, LLC

1047

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 150A

Integrating Sensing and Advanced Computing Technologies into Digital Twin Models

Zhixia Li, University of Cincinnati, presiding

Colin Brooks, Michigan Tech Research Institute, presiding

Sponsored By Standing Committee on Information Systems and Technology, Standing Committee on Statewide/National Transportation Data and Information Management, Standing Committee on Geographic Information Science, Standing Committee on Artificial Intelligence and Advanced Computing Applications, Standing Committee on Visualization in Transportation

This interactive workshop invites transportation professionals, researchers, and enthusiasts to dive into the dynamic field of integrating sensing and advanced computing technologies into digital twin models. Participants will be encouraged to share their perspectives, challenges, and success stories, fostering a collaborative learning environment. The workshop will also provide a platform for open discourse, enabling participants to address their concerns and propose innovative solutions.

Improving Bridge Inspections with Digital Twins and Artificial Intelligence (P24-20325)

Barritt Lovelace/Collins Engineers, Inc.

(continued)

Digital Twinning the Built Environment (P24-20326)

Ioannis Brilakis/University of Cambridge

Artificial Intelligence–Enabled Transportation Infrastructure Mapping (P24-20327)

Chengbo Ai/University of Massachusetts, Amherst

Bringing Digital Twins and Artificial Intelligence to the Civil Infrastructure Asset Management Community (P24-20328)

Ali Khaloo/Aren, Inc.

A Sensor Data-Driven Traffic Signal Design Framework for Future Scenarios with Digital Twins of Automated Traffic Signal Performance Measures Systems (P24-20329)

Pengfei (Taylor) Li/University of Texas, Arlington

Drone Scanning and Digital Models in Kentucky (P24-20331)

Justin Wilson/Kentucky Transportation Cabinet

Three-Dimensional Bridge Inspection App (P24-20330)

Colin Brooks/Michigan Tech Research Institute

1048 CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 151B

Planning Process Trials for Equity: Designing and Role Playing a Planning Process for More Equitable Decision Making

Aditi Misra, University of Colorado, Denver, presiding

Elizabeth Sall, UrbanLabs LLC, presiding

Tierra Bills, University of California, Los Angeles, presiding

Hannah Twaddell, ICF, presiding

Liz Williams, Massachusetts Department of Transportation, presiding

Sponsored By Standing Committee on Transportation Demand Forecasting, Standing Committee on Transportation Planning Analysis and Application, Standing Committee on Transportation-Related Noise and Vibration, Standing Committee on Equity in Transportation, Standing Committee on Community Resources and Impacts

Do you have an idea for how to make the planning process result in better equity outcomes? Attendees of this workshop will take on the role of decision maker, transportation planner, travel analyst, or community member and work with a team to design and simulate a long-range transportation plan and transportation improvement plan process that would result in more equitable outcomes. This workshop will conclude with a roundtable of academics and policy makers providing their observations and relevant next steps.

U.S. Department of Transportation Commissioner Team (P24-21089)

Charlotte Frei/Teton County

Transportation Planner Team (P24-21090)

Hannah Twaddell/ICF

Travel Analyst Team (P24-21091)

Michelle Bina/Cambridge Systematics

1049 CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 151A

Using Behavioral Science in Transportation

Mark Burris, Texas A&M University, presiding

Sponsored By Standing Committee on Transportation Demand Management, Standing Committee on Managed Lanes, Standing Committee on Traveler Behavior and Values, Standing Committee on Transportation and Public Health

This workshop highlights advances in behavioral science and behavioral economics in transportation. It includes (1) an overview of this research area and its potential to adjust travel behavior; (2) follow-up presentations on projects that were just under way when presented in the 2020 workshop: Nudging the Commute, plus several new projects; and (3) an activity where the audience members will participate in behavioral science experiments designed to explore their own cognitive biases.

(continued)

Using Behavioral Science in Transportation (P24-20895)

Joseph Sherlock/Duke University

Miles Matter Project: Road User Charging with Incentives in Dallas-Fort Worth (P24-20896)

Dan Lamers/North Central Texas Council of Governments

Lessons Learned from Federal Highway Administration Projects Involving Behavioral Science (P24-20898)

Allen Greenberg/Federal Highway Administration (FHWA)

Texas Department of Transportation ConnectSmart (P24-20899)

Brenda Bustillos/Texas Department of Transportation

Using Behavioral Economics to Predict Managed Lane Use (P24-20900)

Mark Burris/Texas A&M University

Welcome from the Subcommittee and Highlights from the 2020 Workshop: Nudging the Commute (P24-20921)

Lama Bou Mjahed/World Bank

Literature on Behavioral Science in Transportation and Task Force Update (P24-20922)

Melrose Pan/Oak Ridge National Laboratory

Interactive Behavioral Science Experiment Done with the Audience (P24-20923)

Mark Burris/Texas A&M University

1050

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 152B

Designing the Transportation Agency of the Future

John Kaliski, Cambridge Systematics, presiding

Sponsored By Standing Committee on Strategic Management, International Coordinating Council, Standing Committee on Transportation Asset Management, Standing Committee on Public Engagement and Communications, Standing Committee on Information and Knowledge Management, Standing Committee on Data for Decision Making

How must transportation agencies evolve to meet changing customer needs? How can they leverage technology and innovation? Will the future department of transportation (DOT) focus on system management, mobility, or strategic development? How can DOTs work with other public and private partners to carry out this mission? Join an interactive discussion on designing the agency of the future, building on recent research by the Transportation Research Board and PIARC and the vision framework adopted by the American Association of State Highway and Transportation Officials.

What We Have Been Learning: Recent Research and Collaboration (P24-20619)

Victoria Sheehan/Transportation Research Board

PIARC Research: Toward the Transportation Agency of the Future (P24-20620)

Christos Xenophon/Rhode Island Department of Transportation, Jonathan Spear

Collective and Individual Actions to Envision and Realize the Next Era of America's Transportation Infrastructure (P24-20622)

Patrick McKenna/Missouri Department of Transportation

Findings from the Prague Workshop (P24-20623)

Deanna Belden/Minnesota Department of Transportation

Panel Discussion: The Evolving Role of Transportation Agencies (P24-20624)

Shailen Bhatt/Federal Highway Administration (FHWA), Meghan Haggerty/Massachusetts Department of Transportation, Jannine Miller/Georgia State Road and Tollway Authority, Greg Slater/Tampa Hillsborough Expressway Authority, Alex Walcher/ASFINAG, Patrick Mallejacq/PIARC, the World Road Association, Jack Chambers/Department of Transport Ireland

1051

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, CANCELLED

Cancelled - The Disadvantaged Business Enterprise: Notice of Proposed Rule Through Final Rule

Scheryl Portee, Federal Transit Administration (FTA), presiding

Sponsored By Standing Committee on Contracting Equity

The Final Rule will modernize the existing Disadvantaged Business Enterprise (DBE) Regulation, 49 CFR Part 26, to improve opportunities for small disadvantaged businesses competing on federally funded transportation contracts by the U.S. Department of Transportation and its recipients.

The Disadvantaged Business Enterprise: Notice of Proposed Rule Through Final Rule (P24-21044)

Marc Pentino/Office of the Secretary of Transportation (OST), Martha Kenley/Federal Highway Administration (FHWA), nicholas giles/Federal Aviation Administration (FAA)

1052

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, CANCELLED*

CANCELLED - Charging Forward: Overcoming Legal, Regulatory, and Policy Barriers for the Electric Vehicle Charging Infrastructure

Gregory Rodriguez, Stantec, presiding

Sponsored By Standing Committee on Transit and Intermodal Transportation Law

The “all-in” federal funding approach to support electric vehicles (EVs) has produced significant momentum around the installation of EV charging infrastructure. Guidance is still rolling out around issues like technical specifications, Buy America, and the use of public right-of-way, public–private partnerships, and tax credits. This workshop will provide a perspective on creating a coordinated, interoperable, and equitable approach to EV charging. The workshop will include planning elements such as siting, land use and zoning considerations, and utility coordination. This workshop will be geared toward attorneys, regulators, planners, policy makers, and engineers to collaborate and discuss coordinated approaches to overcome barriers.

1053

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 156

Redundancy of Steel Bridges: From Research to Design Practice and Implementation

Jamie Farris, Texas Department of Transportation, presiding

Jason Lloyd, Nucor, presiding

Sponsored By Standing Committee on Steel Bridges, Standing Committee on Fabrication and Inspection of Metal Structures, Subcommittee on Methods for Analyzing Steel Bridges

The newly implemented 2022 Federal Highway Administration National Bridge Inspection Standards establish new terms that govern the classification of steel bridge members subjected to tension, specifically in terms of how redundancy is achieved. This workshop will begin with a discussion on the background and explanations of the changes to the federal requirements. Past redundancy research will be presented and then an expert panel will give examples of the implementation of the new design concepts with an opportunity for attendees to ask questions. The workshop will wrap up with a discussion on innovative research and concepts for the future.

Introduction and Background (P24-21213)

Justin Ocel/Federal Highway Administration (FHWA)

Texas Twin Tub Girder Research (P24-21214)

Jamie Farris/Texas Department of Transportation

Fracture Critical System Analysis and IRM Research for Steel Bridges (P24-21215)

Robert Connor/Purdue University

Texas Twin Tub Design Methodology (P24-21216)

Jamie Farris/Texas Department of Transportation

(continued)

Wisconsin Retrofit and Design of Twin Tub Girder Bridge (P24-21217)

Francisco Javier Bonachera Martin/Michael Baker International, Inc.

Industry Guidelines for Identifying Redundancy on Contract Plans and Submittal Requirements (P24-21218)

Ronnie Medlock/High Steel Structures, Justin Ocel/Federal Highway Administration (FHWA)

Texas Department of Transportation Bolted Straddle Bent Research (P24-21219)

Todd Helwig/University of Texas, Austin

Built Up Tie Girders (P24-21220)

Robert Connor/Purdue University

Modular Truss Bridges (P24-21221)

Ashley Thrall/University of Notre Dame

1054

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 209AB

Stage That Bridge: Balancing Owner, Designer, Community, and Contractor Priorities on Complex Bridge Construction Projects

Chiara Rosignoli, Hardesty & Hanover, LLC, presiding

Sponsored By Standing Committee on Construction of Bridges and Structures, Standing Committee on Public Engagement and Communications, Standing Committee on Innovative Highway Structures and Appurtenances, Standing Committee on Steel Bridges, Standing Committee on Concrete Bridges, Standing Committee on Construction Management

The goal of this workshop is to provide an opportunity for owners, designers, contractors and community stakeholders to work through a future bridge replacement and capacity add within the bounds of existing infrastructure. Groups will have the opportunity to identify challenges and bottlenecks in project planning and development that directly impacts the bridge design and construction. They will also have the opportunity to see the importance of understanding and incorporating construction capabilities and limitations into the project development. Exploration of project impacts due to construction will be taken into consideration when determining bridge construction sequence, community impacts, and traffic disruptions. The workshop committee identified four presenters to represent designers, owners, community, and contractors to lead the conversation and provide a starting point for workshop groups to discuss and develop a staged construction plan.

Owner Perspective (P24-21202)

Evan Grimm/Washington State Department of Transportation

Community Perspective (P24-21203)

Michael Garau/Kimley-Horn and Associates, Inc.

Designer Perspective (P24-21204)

Matthias Schueller/Parsons Corporation

Presentation of Contractor Perspective (P24-21481)

Walter Eggers/Kiewit Corporation

1055

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 202B

Roadway Design Limbo: How Flexible Can You Be?

Matthew Dawson, Hanson Professional Services, Inc., presiding

Sponsored By Standing Committee on Performance Effects of Geometric Design, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation, Standing Committee on Access Management, Standing Committee on Tort Liability and Risk Management, Subcommittee on Context Sensitive Solutions, Standing Committee on Roadside Safety Design, Standing Committee on Landscape and Environmental Design

Our roadway networks are being transformed to incorporate an ever-increasing array of multimodal users and nontraditional uses of our public rights of way including outdoor dining and landscaping. Our design manuals have flexibility built into their texts but practitioners and agencies often treat the design tables as absolutes. Predictive models, such as those found in the HSM, can help to justify flexibility but can be misapplied. Practitioners have questions about how to apply and document the use of flexibility while considering tort liability. This workshop will help to demonstrate how to incorporate flexibility in design, break down communication silos, document design decisions, and look at how we can better train our practitioners.

Increased Flexibility with a Performance-Based Highway Design Process (P24-20117)

Richard Coakley/Jacobs

Flexible, Performance-Based Multimodal Design (P24-20118)

Brian Ray/Sunrise Transportation Strategies, LLC

The Historical Progression of Managing Tort Risk and Liability While Promoting Context Sensitive Design Flexibility (P24-20119)

Heidi Skinner/County of San Diego

Georgia Department of Transportation Design Variances on Existing Roadways (P24-20120)

Raymond Rudd/Georgia Department of Transportation

Shared Corridors and Integrated Mobility (P24-20121)

Anthony Loui/Los Angeles County Transportation Authority (LACMTA)

Pittsburgh's Continued Transformation into the Rust Belt Multimodal City (P24-20122)

Justin Miller/Michael Baker International, Inc.

1056

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 204AB

Monitoring and Assessing Performance of Aquatic Organism Passage Structures

John Hunt, Ayres Associates, presiding

Sponsored By Standing Committee on Hydrology, Hydraulics, and Stormwater, Standing Committee on Environmental Analysis and Ecology

Recognizing the need and implications of the varied approaches to design and construction of these structures, the Western Federal Lands Highway Division (WFLHD) team has developed an AOP monitoring protocol focused on constructed AOP crossings. The protocol focuses on key metrics for successful monitoring of AOP effectiveness. These metrics were developed by the team in conjunction with subject matter experts from state and federal agencies and academia. The project team's overarching goal is to develop a data driven success criteria based on field monitoring of all types of AOP crossings. The project team envisions the results of the research study to be utilized nationwide for improved AOP structure design best practices. The developed protocol currently includes a rapid Geomorphic and Visual Assessment Stage that has been tested in Georgia, Minnesota, Oregon, Vermont, Washington, and Wisconsin. This workshop is intended to describe the monitoring protocol developed for AOP structures and how field data can be collected utilizing the rapid assessment approach. The workshop will include:

- Review of the state of practice in AOP monitoring
- Overview of the development of a multi stage monitoring protocol
- Review of the rapid assessment monitoring forms and field procedures
- Use of available on-line mobile application forms and training webinars
- Observations from monitoring completed by the study to date
- Discussion of future efforts on field data collection, data analysis, development of advanced geomorphic/biological monitoring, and guidance updates

Monitoring Protocols for Aquatic Organism Passage Structures (P24-21491)

James Neighorn/Federal Highway Administration (FHWA), Justin Lennon/WSP, Casey Kramer/Natural Waters, LLC

1057

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 102A

Rockfall Attenuators: Past and Present Capacities, Uses, Limitations, Resiliency, and Case Histories

Ben Arndt, RJ Engineering and Consulting, presiding

Sponsored By Standing Committee on Engineering Geology, Subcommittee on Rockfall Management, Subcommittee on Advances in Landslides, Analysis and Control

Rockfall attenuators are a common method of mitigating rockfall. Designed to dissipate rockfall energy rather than stop falling rock, they are more resilient than other mitigation systems and can be more functional in extreme weather events. This workshop will present case histories of how attenuators are designed and bid by owners and focus on their applications and limitations. The format will include interactive involvement between attendees and a panel of subject-matter experts intended to define and clarify the state of practice and identify needs to improve attenuator designs and specifications. Outcomes could clarify the design and bidding aspects with a summary of presentations and/or other synthesis requests or circulars.

Historic Perspective with Attenuators (P24-20665)

Ben Arndt/RJ Engineering and Consulting, Ty Ortiz/RockSol Consulting Group

Washington State Department of Transportation Attenuators: Plans, Specials, and Issues (P24-20846)

Marc Fish/Washington State Department of Transportation

Advances in Rockfall Protection: Attenuator Development, Testing, and Installations (P24-20666)

Timothy Shevlin/Geobrugg North America, LLC

Full-Scale Tests on Attenuator and Hybrid Systems: Experiences and Outlook (P24-20667)

Gernot Stelzer/Trumer Schutzbauten, Ahren Bichler/Trumer Schutzbauten

Japanese Attenuator (P24-20668)

Shotaro Nakahama/Tokyo Rope USA, Inc, Takeshi Arita/Tokyo Rope International Inc.

Panel Discussion (P24-20872)

Ben Arndt/RJ Engineering and Consulting, Marc Fish/Washington State Department of Transportation, Timothy Shevlin/Geobrugg North America, LLC, Ahren Bichler/Trumer Schutzbauten, John Duffy/Yeh and Associates, Inc.

1058

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 207B

Pavement Foundations: 100-Year Design Considerations

John Siekmeier, Minnesota Department of Transportation, presiding

Hyunhwa Yu, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials, Standing Committee on Transportation Earthworks, Standing Committee on Geotechnical Instrumentation and Modeling, Standing Committee on Geosynthetics, Standing Committee on Stabilization of Geomaterials and Recycled Materials

Pavement foundation deformation under the asphalt or concrete surface layer causes damage at the surface and reduces service life. Extreme weather and seasonal climate change create additional uncertainty and therefore it is important to better estimate and then reduce foundation degradation and deformation for life cycle assessment periods up to 100 years. Lack of information can lead to poor design choices and expensive or ineffective pavement system designs. Five introductory presentations will be followed by breakout groups, which will be followed by a panel discussion that will answer audience questions. This workshop will share opportunities to better understand how current technology can enhance pavement foundation resilience.

Design and Construction to Achieve Long-Lasting Pavement (P24-20065)

Nayyar Siddiki/Indiana Department of Transportation, Kumar Dave/Indiana Department of Transportation

Geosynthetic Stabilization of Pavement Granular Layers (P24-20066)

Erol Tutumluer/University of Illinois, Urbana-Champaign

Use of Innovative and Conventional Additives for Roadway Foundation Stabilization (P24-20067)

Bora Cetin/Michigan State University

Role of Quality Management in Extending Pavement Life (P24-20068)

Soheil Nazarian/University of Texas, El Paso

(continued)

E-Compaction for Pavement Foundations (P24-20069)

David White/Ingios Geotechnics, Inc.

1059

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 101

Adjustment to Asphalt Mixtures to Meet Performance Testing Requirements and Allow Innovations

Tim Aschenbrener, Federal Highway Administration (FHWA), presiding
Jhony Habbouche, Virginia Transportation Research Council, presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design, Standing Committee on Production and Use of Asphalt, Standing Committee on Binders for Flexible Pavement, Standing Committee on Asphalt Mixture Evaluation and Performance

With the increased focus on using mixture performance tests for mix design and in some cases acceptance, questions have arisen on how to adjust mix designs. The take-aways will be: For State DOTs: options needed for flexibility within specifications to allow for appropriate adjustments to meet performance test requirements using fundamentals and innovation. In current specifications, what requirements can be relaxed? What requirements should be kept? For contractors: options on improving mix designs to meet mixture performance tests using fundamentals and innovation. Workshop participants will have an improved understanding of options to adjust mixtures to meet performance test requirements and determine what techniques are effective.

Mix Design Versus Acceptance: Setting the Stage (P24-20072)

Elie Hajj/University of Nevada, Reno

Industry Practices and Suggestions for Adjusting Asphalt Mixtures to Meet Balanced Mix Design Specifications (P24-20073)

Tom Bennert/Rutgers University

Impact of Binder Source on Hot Mix Asphalt Mechanical Performance: A Supplier's Perspective (P24-20074)

Anas Jamrah/Marathon Petroleum Company LP

Moving Toward Approach D: Performance Design (P24-20075)

Randy West/Auburn University

Interactive Case Studies: What Would You Do to Adjust This Mix? (P24-20076)

Nathan Moore/National Center for Asphalt Technology (NCAT)

1060

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 103B

Shotcrete 2024: Today's State of the Art

Charles Hanskat, American Shotcrete Association, presiding
Anton Schindler, Auburn University, presiding

Sponsored By Standing Committee on Advanced Concrete Materials and Characterization, Standing Committee on Tunnels and Underground Structures, Standing Committee on Culverts, Buried Bridges and Soil Structure Interaction, Standing Committee on Construction of Bridges and Structures, Standing Committee on Properties of Concrete and Constituent Materials, Standing Committee on Durability of Concrete

Shotcrete is a process whereby concrete is placed by a high-velocity pneumatic projection from a nozzle, which allows the construction of structural concrete sections that inherently benefit from the reduced or eliminated formwork. This workshop will cover (1) an overview of shotcrete and its advancements, (2) shotcrete research findings, (3) case studies of shotcrete transportation projects, (4) DOT experience with shotcrete, (5) shotcrete-specific concrete mixtures and their impact on performance, (6) improved application techniques, (7) shotcrete finishing, (8) repair and rehabilitation with shotcrete, (9) concrete codes and standards for shotcrete, and (10) future advances in shotcrete materials, placement, and equipment.

Introduction to Shotcrete: Not Your Father's Gunite (P24-20061)

Charles Hanskat/American Shotcrete Association

Shotcrete Research: Past, Present, and Future (P24-20108)

Marc Jolin/Laval University

(continued)

Shotcrete Application in New York State Department of Transportation Projects (P24-20062)

Brian Carmody/New York State Department of Transportation

Shotcrete in Substructure: Infrastructure Repair: Case Studies (P24-20063)

Marcus von der Hofen/Coastal Gunite Construction Company

Enhanced Sustainability and Efficiency of Fiber-Reinforced Shotcrete (P24-20110)

William Geers/Bekaert Corporation

Question and Answer Session (P24-20064)

Charles Hanskat/American Shotcrete Association

1061

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 202A

A Look into the Future of Pavement Assessment

Jerome Daleiden, ARRB Systems, presiding

Björn Zachrisson, NIRA Dynamics AB, presiding

Gerardo Flintsch, Virginia Polytechnic Institute, presiding

Sponsored By Standing Committee on Pavement Condition Evaluation, Subcommittee on Innovations in Pavement Condition Evaluation

This workshop will provide a forum for exchanging perspectives from industry and state departments of transportation on the future of pavement assessment. Agencies have heavily relied on specially equipped vehicles for the past two decades, but technology is evolving rapidly. The objective is to help formulate potential paths forward for the development and application of these technologies for pavement condition evaluation.

Introduction: Crowdsourced Data Available for Pavement Management (P24-21457)

Björn Zachrisson/NIRA Dynamics AB

Telematics Data (P24-21458)

Autonomous Vehicle Data (P24-21459)

Combining New Data to Leverage Insights (P24-21460)

National and International DOT Experiences and Applications - Potential Applications, Potential Limitations, Lessons Learned (P24-21461)

Jenny Li/Texas Department of Transportation, Curt Turgeon/Minnesota Department of Transportation, Raja

Shekharan/Virginia Department of Transportation, Shawn Turner/Texas A&M Transportation Institute, Matteo Pettinari,

Frederik Lindstrom

Lessons Learned Using Crowdsourced Data for the Public Sector (P24-21462)

Shawn Turner/Texas A&M Transportation Institute

Pooled Fund TPF 5(513) Emerging Data Streams for Pavement (Asset) Health Monitoring and Management (P24-21463)

Gerardo Flintsch/Virginia Polytechnic Institute

1062

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 209C

Transition of Construction and Off-Road Vehicles to Alternative Fuels

Melissa Boyer, New Jersey Department of Transportation, presiding

Henry Canipe, Mott MacDonald, LLC, presiding

Sponsored By Standing Committee on Maintenance Fleet and Equipment, Standing Committee on Maintenance and Operations Management

Heavy-duty vehicles and equipment are critical tools for supporting the transportation infrastructure and other key services. Whether operated by public or private entities, these units need to be able to perform under any condition, including emergency situations where the energy infrastructure may be damaged or otherwise unavailable. The goal of this workshop is to identify when and how electrification would work in the construction and off-road vehicle sector, including exploring where other alternative fuel options may be needed or preferable.

Panel Discussion: What Is Available Today? (P24-20674)

Hernan del Aguila/Partner Rentals

Panel Discussion: What Is Available Today? (P24-20675)

todd Self/ZeroRPM, Inc., Lance Self/ZeroRPM, Inc.

Panel Discussion: What Is Available Today? (P24-20673)

Lori Dunn/Optimus Technologies

Panel Discussion: What Is Available Today? (P24-20685)

Tim Fitzgerald/District of Columbia Water and Sewer Authority

Panel Discussion: What Is Available Today? (P24-20686)

TBD TBD

Panel Discussion: What Is the Future? (P24-20677)

Kanok Boriboonsomsin/University of California, Riverside

Panel Discussion: What Is the Future? (P24-20678)

william elrick/Hydrogen Fuel Cell Partnership

Panel Discussion: What Is the Future? (P24-20684)

TBD TBD

Panel Discussion: What Is Available Today? (P24-20687)

Junhyeong Park/California Air Resources Board (CARB)

1063

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 204C

Climate Responsive Pavement Management

Omar Swei, University of British Columbia, presiding

Theunis Henning, University of Auckland, presiding

Sponsored By Standing Committee on Pavement Management Systems, Standing Committee on Pavement Preservation, Standing Committee on Pavement Maintenance, Standing Committee on Structures Maintenance, Standing Committee on Maintenance Management Systems

Resilience to climate change is now a major priority for many communities around the world. The reality is that the impacts of climate change will aggravate in the coming years, threatening the ways communities' function and prosper. There is a need for adaptation in all facets of community functioning, and infrastructure has an important role to play in improving resilience to climate change. For pavement systems, climate adaptation must integrate fully within existing institutional structures and frameworks to inform planning decisions. This workshop will provide attendees with a deeper understanding of overlaying climate data, risk assessment, and adaptation strategies into all aspects of pavement management. Breakout sessions will be held to further explore the topics, share related experiences, and identify critical research needs.

1064

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 207A

How Pavement Preservation Versus Maintenance Relate and the Tools and Techniques for Each

Dingxin Cheng, California State University, Chico, presiding

Sponsored By Standing Committee on Pavement Preservation, Standing Committee on Pavement Management Systems, Standing Committee on Pavement Maintenance

The fields of pavement preservation and pavement maintenance often utilize similar treatments, creating some overlap between the two. Both approaches are crucial aspects of maximizing the pavement life span. Pavement preservation is typically characterized by proactive planning and preventive measures, while pavement maintenance tends to be more reactive to pavement distress. This workshop will provide attendees with a deeper understanding of each approach and when their application is appropriate. The tools and techniques of both approaches will also be presented. Breakout sessions will be held to further explore the topics, share related experiences, and identify critical research needs.

1065

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 201

Multi-Hazard Considerations for Safe, Secure, and Resilient Bridges and Other Transportation Infrastructure

Sreenivas Alampalli, Stantec, presiding

Maqbool Mohammed, Stantec, presiding

Sponsored By Standing Committee on Bridge and Structures Management, International Coordinating Council, Standing Committee on Testing and Evaluation of Transportation Structures, Standing Committee on Seismic Design and Performance of Bridges, Standing Committee on Structures Maintenance, Subcommittee on Safety and Security of Bridges and Structures, Standing Committee on Bridge Preservation, Standing Committee on Critical Transportation Infrastructure Protection

This interactive workshop, with a panel discussion and illustrative examples, will discuss multihazard design and analysis aspects along with recent trends and advances in this field. The safety, security, and resilience of bridges and transportation structures are at the forefront in maintaining the reliability of transportation networks around the world. These structures are subjected to multiple hazards during their service life, including flooding, fire, earthquakes, snow and ice, wind, blast, and other impacts. Structures' behavior varies significantly depending on the hazard or combination of hazards, and analysis and design should carefully consider the differences in their behavior and associated failure mechanisms.

1066

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 146B

Conference on Advancing Transportation Equity's Unconference Peace Talks

Erica Blonde, HNTB Corporation, presiding

Zachary Elgart, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Equity in Transportation, Standing Committee on Accessible Transportation and Mobility, Standing Committee on Strategic Management, Standing Committee on Public Engagement and Communications

This workshop includes an "unconference" panel featuring transportation-adjacent stakeholders, such as individuals from public health, economic development, community development, affordable housing organizations (unhoused persons), and marginalized youth. It will engage in conversations around intersectional identity, including gender, disability, and others. This workshop will be formatted like "War Games" to include a case study framework with a focus on an individual experience with a transportation network (i.e., formerly incarcerated persons) with challenges added throughout the workshop. The goal is to determine how each individual would be able to navigate through the system based on their unique needs. Presentations will be made at the end of this workshop.

Panelist 1 (P24-21548)

Nissa Tupper/Minnesota Department of Transportation

(continued)

Panelist 2 (P24-21549)

Keith Baker/ReConnect Rondo

Panelist 3 (P24-21550)

Julia Castillo/Heart of Iowa Regional Transit Agency

Panelist 4 (P24-21551)

Kori Johnson/Safe Routes Partnership

1067

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 146C

Health for All: Addressing Gender Disparities in Accessing Health Care and Other Critical Destinations

Ipek Sener, Texas A&M Transportation Institute, presiding

Eve Moir, Los Angeles County Transportation Authority (LACMTA), presiding

Sponsored By Standing Committee on Transportation and Public Health, Standing Committee on Women and Gender in Transportation, Standing Committee on Native American Transportation Issues

Inequitable access to health care facilities and other critical destinations has a significant negative impact on health outcomes and the overall well-being of individuals. In recognition of the barriers and challenges that disproportionately affect different genders, this workshop focuses on addressing gender disparities in access to such destinations. Through expert panels and discussions, participants will gain a deeper understanding of the multifaceted, unique challenges faced by different genders.

Research Highlights (P24-20699)

Regan Patterson/University of California, Los Angeles

Research Highlights (P24-20701)

Margo Hill/Eastern Washington University

Research Highlights (P24-21119)

Kendra Copanas/Generate Health

Research Highlights (P24-21134)

Winnie Okello/Pennsylvania Department of Environmental Protection

Panel Discussion (P24-20703)

Valerie Lefler/Phoenix Mobility Rising

Panel Discussion (P24-20707)

Anthony Boutros/Federal Highway Administration (FHWA)

Panel Discussion (P24-20924)

Alicia Johnson/Metro Transit, Omaha

Panel Discussion (P24-21135)

Aimee Gauthier/Institute for Transportation & Development Policy

Case Study (P24-20705)

Chelsea Richer/Fehr & Peers

1068

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 140

Our Role in the Fight Against Human Trafficking

Felipe Aros-Vera, Ohio University, presiding

Sponsored By Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity, Standing Committee on Women and Gender in Transportation, Standing Committee on General Law

The purpose of this workshop is to bring together committees and interested people around the issue of human trafficking. More specifically, this workshop will focus on the role that transportation infrastructure and operations play in human trafficking today. It will begin with a panel of experts, including include academics, practitioners, law enforcement, and survivors. Next, this workshop will have a presentation to provide background on the role that transportation plays in human trafficking: main issues, policies, and data, among others. The presentation will be followed by a breakout session in which attendees will be requested to brainstorm on the roles that their agencies and institutions can use or expand current resources to help the fight against human trafficking. Finally, this workshop will close with main findings, lessons learned, and an applied research agenda for future Transportation Research Board activities.

Northeast Human Trafficking Task Force (P24-21513)

John Morgan/Cuyahoga County Government

Alabama Transportation Institute (P24-21514)

Steven Jones/Alabama Transportation Institute

Truckers Against Trafficking (P24-21515)

Kylla Lanier/Truckers Against Trafficking

1069

CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 147B

Overcoming Challenges to Decarbonizing Transportation in Small and Rural Communities

Gregory Rowangould, University of Vermont, presiding

Jonathan Rubin, University of Maine, presiding

Sponsored By Standing Committee on Transportation Energy, Rural Transportation Issues Coordinating Council, Standing Committee on Air Quality and Greenhouse Gas Mitigation

The workshop will focus on understanding the unique challenges that small and rural communities face in decarbonizing travel and then aim to identify pathways through research and policy to overcome them. The workshop will have two panels. A panel of practitioners and community leaders that will speak to decarbonization challenges in small and rural communities and a panel of researchers and experts that can respond with potential solutions, including new research directions, data, modeling tools or policy innovations. Two breakout sessions will ask workshop participants to identify additional decarbonization challenges and research needs and strategies to chart a path forward to decarbonizing travel in small and rural communities.

Panel 1: Reports on Decarbonization Challenges from the Field (P24-20576)

HollyAnna Littlebull/University of Washington

Panel 1: Reports on Decarbonization Challenges from the Field (P24-20577)

Justin Nawrocki/Washington State Department of Transportation

Panel 1: Reports on Decarbonization Challenges from the Field (P24-20578)

Bret Allphin/National Association of Development Organization (NADO)

Panel 1: Reports on Decarbonization Challenges from the Field (P24-20579)

Jeffrey Pulver/Maine Department of Transportation

Panel 2: Research Needs and Opportunities to Overcome Decarbonization Challenges (P24-20580)

Gil Tal/University of California, Davis

Panel 2: Research Needs and Opportunities to Overcome Decarbonization Challenges (P24-20581)

Jeremy Mattson/North Dakota State University

Panel 2: Research Needs and Opportunities to Overcome Decarbonization Challenges (P24-20582)

Claude Morelli/Foursquare ITP

Panel 2: Research Needs and Opportunities to Overcome Decarbonization Challenges (P24-20583)

Dana Rowangould/The University of Vermont

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 146A

Transit Data Challenge: Innovative Analytical Tools to Improve Public Transit

Laura Moeini, Washington Metropolitan Area Transit Authority, presiding

Sponsored By Standing Committee on Transit Management and Performance, Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Public Transportation Planning and Development, Standing Committee on Transit Data

The Transit Data Challenge is an opportunity for analysts to demonstrate an innovative tool, method, or product that uses data to improve decision making and get results for public transit. The submission topics range from operations to planning and maintenance to internal administration. The objectives of the challenge are to highlight data's impact in public transit, foster information sharing across public transit, and introduce more people to the research and connections that the Transportation Research Board provides. Each finalist will give a brief presentation on their submission. While judges convene to evaluate the presentations, finalists will answer attendee questions in a poster session. At the end of the workshop, a winner will be announced!

Enterprise Data Analytics Platform (P24-21097)

Chester Soares/CapMetro

TransitMatters Slow Zone Tracker (P24-21098)

Austin Paul/TransitMatters

Green Machine Analytics (P24-21103)

Ken Bales/Culver City Bus

Transit Drivecycle (P24-21104)

Saadiq Mohiuddin/Mott MacDonald, LLC

California Transit Speed Maps (P24-21105)

Katrina Kaiser/California Department of Transportation

Speed Restriction Dashboard (P24-21106)

Charlie Cabot/Massachusetts Bay Transportation Authority (MBTA)

Interactive Bikeshare Analytics and Planning Tool (P24-21107)

Ghazaleh Mohseni Hosseinabadi/York University

Bus Location Health (P24-21108)

James Pofahl/Metropolitan Atlanta Rapid Transit Authority

TransitTalk Digital Assistants (P24-21109)

Jiahao Wang/University of Toronto

metrics.mta.info (P24-21110)

Lisa Fiedler/Metropolitan Transportation Authority (MTA)

Elevator and Escalator Materials Management Dashboard (P24-21111)

Kevin Sanders/Washington Metropolitan Area Transit Authority

General Transit Feed Specifications (P24-21112)

Stefan Coe/Puget Sound Regional Council (PSRC)

Charger Scheduling Optimizer (P24-21113)

Behnaz Naeimian/York University

Zero-Emission Bus Range and Recharging Assessment (P24-21114)

Dan McCabe/University of Washington

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 145A

Accelerating Mobility Innovation: Overcoming Challenges and Re-envisioning Opportunities, Part 2 (Part 1, Session 1031)

Gwo-Wei Torng, Federal Transit Administration (FTA), presiding

Adam Cohen, University of California, Berkeley, presiding

Sponsored By Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Accessible Transportation and Mobility, Subcommittee on Equity of Innovative Mobility Services and Technologies, Standing Committee on Public Transportation Marketing and Fare Policy, Standing Committee on Passenger Intermodal Facilities, Standing Committee on Transit Data, Standing Committee on Passenger Rail Transportation

This workshop will feature the latest innovations in mobility wallets, microtransit, shared automated vehicles, and artificial intelligence applications in public transit and shared mobility. Broadly, this workshop will explore emerging lessons from demonstrations, considerations for planning and implementing these strategies, and opportunities to enhance equitable outcomes.

Spotlight Speaker (P24-20056)

Laura Chace/ITS America

Applying Artificial Intelligence Methods to Mobility (P24-20155)

Renee Autumn Ray/Hayden AI, Xiang Yan/University of Florida, Robert Sheehan/Federal Highway Administration (FHWA),

Kurtis Hodge/May Mobility, Philip Pugliese/Chattanooga Area Regional Transportation Authority

Spotlight Speaker (P24-20057)

Greg Rogers/The Mobility Podcast

Emerging Lessons from the Shared Automated Vehicle Marketplace (P24-20058)

Joshua Cregger/OST-R/Volpe Center, Danyell Diggs/Federal Transit Administration (FTA), Jean Ruestman/Michigan

Department of Transportation, Kimberly Williams/Metropolitan Transit Authority of Harris County, Paul Avery/AECOM,

Arielle Fleisher/Waymo

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 152A

Toward a Greener Future: Best Practices in Railroad Decarbonization

Davidson Ward, FMW Solutions LLC, presiding

Sponsored By Standing Committee on Rail Rolling Stock and Motive Power, Standing Committee on Railroad Operating Technologies

The journey for railroads to transition from the traditional use of hydrocarbon fuels to alternative clean fuels and propulsion technologies is complex. New technologies, delivery systems, and a host of operational and policy considerations all must be and considered prior to major investment decisions. This workshop seeks to quantify ways to measure a return on investment in clean technologies, tools to evaluate which technology is best suited for the railroad environment, and how railroads and agencies can evaluate options, and meet demanding climate policy goals. The workshop will be broken up into three speaker groups, followed by breakout sessions within the audience themselves. These groups will be: Regulatory, Passenger, and Freight.

1073

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 144C

Track Resilience: Design, Construction, and Maintenance

John Lobo, HDR, presiding

Sponsored By Standing Committee on Rail Transit Infrastructure Design and Maintenance, Standing Committee on Railroad Infrastructure Design and Maintenance

This workshop will provide presentations on the vitally important topic of the track modulus of elasticity. This little-known track quality is a measure of how resilient the track structure is. The track modulus is critical in the design of the track system, but the tools for estimating the modulus are woefully inadequate. An erroneous track modulus value can lead to the failure of the track and potentially catastrophic conditions for train operations. The workshop presenters will demonstrate best practices in design, construction, and maintenance to account for and preserve track resilience.

Railway Track Mechanical Behavior with Under Tie Pads and Under Ballast Mats (P24-21084)

Shushu Liu/Changeis Inc, Theodore Sussmann/OST-R/Volpe Center

Resilient Materials for Track Stiffness Optimization (P24-21085)

Arthur de O. Lima/University of Illinois, Urbana-Champaign

Estimating Track and Ballast Modulus of Elasticity (P24-21086)

Radim Bruzek/ENSCO, Inc., Timothy Stark/University of Illinois, Urbana-Champaign

Track Monitoring Through Acoustic Signal (P24-21087)

Ashish Jain/Sensonic, Inc.

Testing, Calculation, and Uses of Track Modulus (P24-21194)

Stephen Wilk/Association of American Railroads, Yin Gao/MxV Rail, Dingqing Li/Association of American Railroads

Design of High-Speed Rail Bridge Embankment Transition Zones (P24-21195)

Amjad Hussain/HNTB, Aamir Durrani/HNTB

1074

CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 144AB

Resilient Freight Futures: Navigating Uncertainty and Empowering Decision Making in Freight Infrastructure Planning

Sandra Rothbard, Freight Matters, presiding

Charles Edwards, University of North Carolina, Chapel Hill, presiding

Sushant Sharma, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Freight Transportation Planning and Logistics, Section - Transportation Systems Resilience, Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity, Subcommittee on Freight Modeling, Standing Committee on Urban Freight Transportation, Standing Committee on Transportation of Hazardous Materials

This workshop is designed for freight practitioners and researchers seeking innovative strategies and tools to enhance their freight planning, freight modeling, and logistics analysis. The focus will be on incorporating uncertainty into resilient freight infrastructure within state freight plans. Seasoned professionals with expertise in freight planning, modeling, operations, and logistics will serve as speakers, sharing their unique insights. They will guide participants through the key stages of freight planning exercises, including identifying planning issues, designing solution-oriented models, creating operational plans, and effectively communicating the results to decision makers and stakeholders.

Introduction (P24-21583)

Sushant Sharma/Texas A&M Transportation Institute

Freight and Supply Chain Resiliency, Infrastructure Planning Policy, and Investment (P24-21584)

Charles Edwards/University of North Carolina, Chapel Hill

Working Resilience Considerations into Ongoing Freight Planning and Analyses (P24-21176)

Anne Strauss-Wieder/Rutgers University, New Brunswick

Supply Chain Resiliency Through Statewide Infrastructure Planning, Policy, and Investment (P24-20911)

Dana Magliola/North Carolina Department of Transportation

Military Logistics Resiliency and Capability Modeling and Analysis (P24-21585)

Charles Edwards/University of North Carolina, Chapel Hill

(continued)

Resilience in Military Logistics and Supply Chain Analytics (P24-21177)

David Helton/Ease Logistics

Designing Freight Transportation Models with Resiliency Analysis Capability (P24-20919)

Monique Stinson/OST-R/Bureau of Transportation Statistics

Panel Discussion (P24-21586)

Sandra Rothbard/Freight Matters

Breakout Discussion (P24-21587)

Sushant Sharma/Texas A&M Transportation Institute, Sandra Rothbard/Freight Matters, Charles Edwards/University of North Carolina, Chapel Hill

Wrap-Up (P24-21588)

Sushant Sharma/Texas A&M Transportation Institute, Sandra Rothbard/Freight Matters, Charles Edwards/University of North Carolina, Chapel Hill

1075 CM (3.00)

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 143AB

Making Space for All: Reimagining Universal Design Practices for Airports

Mia Held, C&S Companies, presiding

Kevin Nuechterlein, Mead & Hunt, Inc., presiding

Sponsored By Aviation Group, Standing Committee on Accessible Transportation and Mobility, Standing Committee on Passenger Intermodal Facilities, Subcommittee on Young Members-Aviation, Standing Committee on Environmental Issues in Aviation, Standing Committee on Airport Terminals and Ground Access

Many of the cities we live in, the airports we fly through, and the highways we drive on were historically designed without considering the range of perspectives necessary to be fully inclusive of all users. Legacy design practices are based overwhelmingly on similar data and assumptions. This workshop will use the principles behind feminist data theory and urban design to explore the experiences of women, trans folx, gender non-conforming, neurodiverse, or other marginalized groups as they interact with the airport system and will discuss and invite participants to apply lessons from feminist data theory and feminist urban design to explore the question: What could a more equitable airport design look like?

C&S Companies Perspective (P24-20309)

Mia Held/C&S Companies

King County International Airport Perspective (P24-20310)

Kevin Nuechterlein/Mead & Hunt, Inc.

HNTB Corporation Perspective (P24-20311)

Max Vale/HNTB Corporation

Easterseals Perspective (P24-20312)

Judy Shanley/Easterseals

Texas A&M Transportation Institute Perspective (P24-20313)

Todd Hansen/Texas A&M Transportation Institute

Gensler Perspective (P24-20314)

Jennie Santoro/Gensler

Port of Seattle Aviation Division Perspective (P24-20315)

Heather Karch/Port of Seattle Aviation Division

Progressive AE Perspective (P24-20316)

Michael Perry/Progressive AE

Denver International Airport Perspective (P24-20317)

Michelle Sandoval/Denver International Airport

Oregon State University Perspective (P24-20318)

Katharine Hunter-Zaworski/Oregon State University

Gerald R. Ford International Airport Perspective (P24-20319)

Casey Ries/Gerald R. Ford International Airport

Metropolitan Washington Airports Authority Perspective (P24-20320)

Andrew Ndolo/Metropolitan Washington Airports Authority

Emotions Matter, Inc. Perspective (P24-20342)

Joe Mancini/Emotions Matter, Inc.

1076

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 147A

Reporting Airport Pavement Strength Using FAARFIELD 2.1

Katie Chou, Stantec, presiding

David Brill, Federal Aviation Administration (FAA), presiding

Sponsored By Standing Committee on Aircraft/Airport Compatibility

The International Civil Aviation Organization ACR/PCR system is the first major update to international airport pavement strength reporting standards since its introduction in 1981. Anticipating full applicability in November 2024, the FAA will require US airports receiving federal funds to apply this new reporting system by September 2024. The FAA also released FAARFIELD 2.1, which implements ACR/PCR. This workshop will cover the principles of the ACR/PCR method, data requirements and procedures for PCR reporting as outlined in AC 150/5335-5D, and key differences from the PCN system. Experts will demonstrate the FAARFIELD 2.1 software using real-world examples and will discuss the transition to PCR reporting in Airport Master Records.

Workshop Introduction (P24-20343)

Katie Chou/Stantec, David Brill/Federal Aviation Administration (FAA)

Federal Aviation Administration Guidance and Transition Planning (P24-20344)

Harold Muniz/Federal Aviation Administration (FAA)

FAARFIELD 2.1 Demonstration (Part I) (P24-20345)

Daniel Offenbacher/Federal Aviation Administration (FAA)

FAARFIELD 2.1 Demonstration (Part II) (P24-20346)

Daniel Offenbacher/Federal Aviation Administration (FAA)

Data Collection for Pavement Classification Rating Evaluation (P24-20347)

Navneet Garg/Federal Aviation Administration (FAA)

Aircraft Classification Rating-Pavement Classification Rating Topics (P24-20348)

David Brill/Federal Aviation Administration (FAA)

Open Discussion and Q&A (P24-21159)

Katie Chou/Stantec

1077

Sunday, 01:30 p.m. - 04:30 p.m., Convention Center, 145B

Freight Systems and Marine Transportation Unconference

Shannon McLeod, American Association of Port Authorities, presiding

Jolene Hayes, Fehr & Peers, presiding

Erika Witzke, CPCS Transcom, presiding

Sponsored By Standing Committee on Ports and Channels, Standing Committee on Inland Water Transportation, Standing Committee on Freight Transportation Planning and Logistics, Standing Committee on International Trade and Transportation, Standing Committee on Intermodal Freight Transport, Standing Committee on Trucking Industry Research, Standing Committee on Freight Rail Transportation

An "unconference" is a participant-driven meeting. While the process is intended to be organic, organizers will pose framing questions and organize interactive activities that will stimulate discussion with the goal of identifying topics ripe for further formal research needs. This workshop is intended to foster research needs statement development ideas to be undertaken by the Freight Systems and Marine Group committees.

Sunday, 02:30 p.m. - 04:00 p.m., Convention Center, Ballroom AB

New Attendee Engagement Session

Victoria Sheehan, Transportation Research Board, presiding

Sponsored By Technical Activities Council

Attend and learn about the many opportunities available through engagement in TRB. Get tips on navigating the Annual Meeting and making the most of your time during the week. Learn about the value of continued participation through TRB technical committees. Understand the available tools, resources, programs, and extensive research capabilities available to transportation professionals through TRB. The session includes a networking segment to introduce you to the committee leadership in your area of interest—a first step in your journey to establishing lifelong professional networks through TRB.

Sunday, 04:00 p.m. - 07:00 p.m., Convention Center, Hall D&E

Exhibit Hall Opening Reception

Sponsored By Technical Activities Council

The opening of the Exhibit Hall includes the popular reception with light hors d'oeuvres and cash bars. Visit the nearly 200 exhibits, including the TRB booth, showcasing the many transportation-related products and services. View the floor plan and interactively search for exhibiting organizations on the Mobile App.

Monday, January 08 (Sessions 2001 - 2122, 2124 - 2239, 3068)

2001

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 103A

Lane Change Interactions

Hany Hassan, Louisiana State University, presiding

Sponsored By Standing Committee on Human Factors of Infrastructure Design and Operations

Failed Lane-Changing Detection and Prediction Using Naturalistic Vehicle Trajectories (TRBAM-24-03268)

Yutong Wu/Tongji University, Ling Wang/Tongji University, Hongwei Wang/Tongji University, Yingying Xing/Tongji University, Yichuan Peng/Tongji University

Prediction of Dangerous Lane-Changing Behavior Based on Enhanced Hidden Markov Model (TRBAM-24-02159)

Miao miao Liu/Beihang University School of Transportation Science and Engineering, Mingyue Zhu/Beihang University School of Transportation Science and Engineering, Yiqi Liu/Beihang University School of Transportation Science and Engineering

Lane-Change Intention Recognition Considering Oncoming Traffic: Novel Insights Revealed by Advances in Deep Learning (TRBAM-24-02241)

LIU HAO/Guilin University of Electronic Technology, Tao Wang/Guilin University of Electronic Technology, Wenyong Li/Guilin University of Electronic Technology, Xiaofei Ye/Guilin University of Electronic Technology, Quan Yuan/Guilin University of Electronic Technology

2002

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon A

Management and Operations of Traffic Signals: Scrambled Transportation Systems Management and Operations for Assets

Kevin Balke, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Traffic Signal Systems

This session examines the tools, techniques and processes that agencies use to sustain and manage their traffic signal assets. Speakers will describe how agencies are incorporating big data, innovative management practices, and emerging technologies to identify and prioritize traffic signal operations and assets with the goal of improving the safety and mobility of all intersection users.

Mainstreaming Emerging Technologies (P24-21403)

Raj Ponnaluri/Florida Department of Transportation

What Do We Know as the State of Practice (P24-21035)

Woody Hood/Mead & Hunt, Inc.

Data Infused Workflows for Transportation Management Centers (P24-21404)

Lance Ballard/Kimley-Horn and Associates, Inc.

How Can We Prioritize Signal Improvements (P24-21036)

Burak Cesme/Kittelson & Associates, Inc.

2003

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon C

Recent Advances in Traffic Flow Theory and Characteristics

S. Ilgin Guler, Pennsylvania State University, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

This session presents an overview of the different research topics covered by the ACP50 (TFTC) Committee. It showcases the recent advances in traffic flow theory from different angles.

Percolation Probabilities Versus Artificial Intelligence for Network Trajectory Generation: A Step Toward Bridging the Gap Between Traffic Science and Complex Theory (TRBAM-24-02887)

Wissam Sleiman/George Washington University, Mohaiminul Haque/George Washington University, Mohammad Saiful Amin/George Washington University, Pan Deng/George Washington University, Samer Hamdar/George Washington University, Seungmo Kang/George Washington University

Exploring Commercial Vehicle Detouring Patterns Through the Application of Probe Trajectory Data (TRBAM-24-02157)

Mark Franz/University of Maryland, College Park, Sara Zahedian/University of Maryland, College Park, Dhairya Parekh/University of Maryland, College Park, A. M. Tahsin Emtenan/University of Maryland, College Park, Greg Jordan/University of Maryland, College Park

Universality of Area Occupancy-Based Fundamental Diagrams in Mixed Traffic (TRBAM-24-06011)

Nandan Maiti/Indian Institute of Technology, Madras, Jorge A. Laval/Indian Institute of Technology, Madras, Bhargava Chilukuri/Indian Institute of Technology, Madras

Lane-Based Traffic State Estimation on Freeways Using Empirical Automated Vehicle Data (TRBAM-24-06374)

Athanasia Karalakou/Technical University Munich, Felix Rempe/Technical University Munich, Lisa Kessler/Technical University Munich, Yunfei Zhang/Technical University Munich, Klaus Bogenberger/Technical University Munich

String Stability Analysis of Car-Following Models in Nonlinear Settings: Metastability and Crashes (TRBAM-24-03700)

Marcello Montanino/University of Naples Federico II, Gaetano Zaccaria/University of Naples Federico II, Vincenzo Punzo/University of Naples Federico II

2004

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon B

Hot Topics in Transportation Safety Management Systems: A LECTERN-POSTER SESSION

Frank Gross, VHB, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems

This "hybrid" session will showcase seven selected papers addressing a specific aspect of safety management. Each author will present an overview of their research in a rapid-fire, 5-minute pitch followed by one-on-one discussions with the authors in front of their poster. See the online program at MyTRB.com for details.

Pedestrian and Car Occupant Crash Casualties Over a 9-Year Span of Vision Zero in New York City (TRBAM-24-04373)

Ge Shi/University of Connecticut, Yu Song/University of Connecticut, Carol Atkinson-Palombo/University of Connecticut, Norman Garrick/University of Connecticut

Developing A Comprehensive Vulnerable Road User Safety Screening Method Using Multi-Level Data (TRBAM-24-06325)

Manmohan Joshi/University of Connecticut, Mohammad Shaon/University of Connecticut, Saki Rezwana/University of Connecticut, Kai Wang/University of Connecticut, Shanshan Zhao/University of Connecticut, John Ivan/University of Connecticut, Eric Jackson/University of Connecticut

Traffic Safety Program Evaluation: The Empirical Bayes Model and Mean Reversion Bias (TRBAM-24-02723)

Justin Gallagher/Montana State University, Paul Fisher/Montana State University

Effectiveness of Median Treatments in Enhancing Unsignalized Intersection Safety: A Comprehensive Evaluation of Driver Behavior, Conflicts, and Crash Reduction (TRBAM-24-01270)

Huaguo Zhou/Auburn University, Humayra Kabir Priyanka/Auburn University

How Drivers' Attitudes Affect Traffic Violations: An International Study Based on Seven Countries Questionnaire Surveys (TRBAM-24-06014)

Yujia Shi/Tongji University, Chaopeng Tan/Tongji University, Hong Zhu/Tongji University, Keshuang Tang/Tongji University

Spatial Analysis of Road Crashes: A Case Study in Medellin, Colombia (TRBAM-24-04297)

Maria Valencia-Cardenas/University of California, Davis, Juan López/University of California, Davis, Miguel Jaller/University of California, Davis

A Vehicle Safety Early Warning Method Based on Risk Map (TRBAM-24-05299)

Chuang CUI/Southeast University, Bocheng An/Southeast University, Linheng Li/Southeast University, Xu Qu/Southeast University

2005

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 150A

Multimodal Data Fusion and Modeling for Improved Traffic Monitoring and Management

Krishnan Viswanathan, Whitman, Requardt and Associates, LLP, presiding

Sponsored By Standing Committee on Urban Transportation Data and Information Systems

Multi-modal data fusion and modeling techniques are proposed to enhance traffic monitoring capabilities and support effective transportation planning and management decisions. Methods range from developing an attention-based model that fuses heterogeneous data sources to accurately estimate missing lane-level traffic volume to applying a mixed geographically weighted regression model using weather, traffic, and spatial factors to examine their heterogeneous impacts on intercity highway traffic volumes. Together, these studies showcase advanced multi-modal data fusion and predictive modeling techniques to generate comprehensive traffic monitoring capabilities and support improved transportation planning and congestion management.

An Attention-Based, Multimodal, Fusion Model for Estimating Lane-Level Missing Traffic Volume in Urban Networks (TRBAM-24-01114)

Jin Hong Min/Seoul National University, Seung Woo Ham/Seoul National University, Dong-Kyu Kim/Seoul National University

Advancing and Lagging Effects of Weather Conditions on Intercity Traffic Volume: A Geographically Weighted Regression Analysis in the Guangdong-Hong Kong-Macao Greater Bay Area (TRBAM-24-03215)

Peiqun Lin/South China University of Technology, Yuanbo Hong/South China University of Technology, Yitao He/South China University of Technology, Mingyang Pei/South China University of Technology

Vehicle Trajectory Reconstruction Based on Hidden Markov Model and Piecewise Cubic Hermite Interpolation Polynomial (TRBAM-24-04768)

Jingfeng Ma/Southeast University, Claudio Roncoli/Southeast University, Gang Ren/Southeast University, Qi Cao/Southeast University, Yue Deng/Southeast University, Jianwei Du/Southeast University

Estimating Urban Arterial Traffic Speed Distributions Using XGBoostLSS (TRBAM-24-05492)

Eugene Antwi Boasiako/Kentucky Transportation Center, Xu Zhang/Kentucky Transportation Center, Mei Chen/Kentucky Transportation Center

2006

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 150B

State of the Art and Future Vision on Artificial Intelligence Research and Applications in Transportation

Osama Osman, Leidos, Inc., presiding

Sponsored By Standing Committee on Artificial Intelligence and Advanced Computing Applications

If you are interested in Artificial intelligence (AI) or Machine Learning (ML), this is the session you do not want to miss. This session features a timely update on AI research and some of the state-of-the-practice AI applications in transportation. Invited speakers from academia, transportation agencies, and the industry will share success stories and challenges of using AI in transportation practice. Furthermore, the AED50 committee will summarize cutting-edge research activities and share its vision for promoting the use of AI in transportation research and development in the coming years. Please join this highly informative and interactive session to learn from experts in the field and share your thoughts and experiences as well.

The Federal Role in Supporting Safe Research, Development, and Implementation of Artificial Intelligence in Transportation (P24-20305)

David Kuehn/Federal Highway Administration (FHWA)

Innovative Artificial Intelligence and Machine Learning Strategies in State Departments of Transportation (P24-20711)

Jesse Newberry/Massachusetts Department of Transportation

The Advancement of Large Language Models and Their Application in Transportation and Mobility Research (P24-20717)

Qiang Ning/Amazon Web Services (AWS)

Hot Topics in Artificial Intelligence Research and AED50's Planned Activities (P24-20306)

Yinhai Wang/University of Washington

2007 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 152B

Micromobility: Vehicles, Stations, Connectivity, and the User Experience

Gregory Giaimo, WSP, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

Attendees will learn ways to better plan for micro-mobility services, notably electric scooters and golf carts. Topics include demand estimation, operation and management of these services, ways to evaluate service improvements, potential land use impacts, mechanisms for station location, and impacts on competing modes (notably the automobile) and complementary modes (fixed rail transit services). Analytical techniques include geospatial analysis (including K-means clustering), multinomial logistic regression, zero-inflated ordered probit modeling, analytic hierarchy process, and difference-in-difference regression analysis.

Unlocking the Role of Shared Dockless E-Scooters in First- and Last-Mile Connectivity to Metro Rail Transit: A Quasi-Experimental Study of Los Angeles (TRBAM-24-00404)

Wookjae Yang/University of Utah, Reid Ewing/University of Utah

GIS-Based Comprehensive Shared Micromobility Station Siting Optimization for Small Urban Areas (TRBAM-24-00837)

Hannah DeBruin/University of Minnesota, Twin Cities, Alireza Khani/University of Minnesota, Twin Cities

Comparative Analysis and Modeling of E-Scooter Usage in Three Locations (TRBAM-24-04028)

Hans-Heinrich Schumann/Loughborough University, He Haitao/Loughborough University, Asya Natapov/Loughborough University, Mohammed Quddus/Loughborough University

The User Experience of Golf Carts: A Case Study of Florida (TRBAM-24-05863)

Kabhabhela Bukuru/University of North Florida, Abdallah Kinero/University of North Florida, Enock Mwambeleko/University of North Florida, Thobias Sando/University of North Florida

Exploring the Shared E-Scooter Adoption Behavior: A Case Study of Chicago (TRBAM-24-06472)

Nazmul Arefin Khan/Argonne National Laboratory, Krishna Murthy Gurumurthy/Argonne National Laboratory, Amir Davatgari/Argonne National Laboratory, Joshua Auld/Argonne National Laboratory

2008 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 151A

Public Transport and Transportation Demand Management: From Interventions to Evaluation

Rimon Rafiah, Economikr, presiding

Sponsored By Standing Committee on Transportation Demand Management

In this session, attendees will learn more about various strategies to help reduce vehicle congestion and single occupancy vehicle usage. This session will focus specifically on Public Transport and Transportation Demand Management (TDM) from interventions to evaluation, featuring presentations on Unpacking the Sardines: What Makes Public Transit Demand Management Programs Successful?, Modeling Transportation Mode Choices under Private Car Use Constraints, and Nudging Towards Sustainable Urban Mobility: Exploring Behavioral Interventions for Promoting Public Transit Usage.

Unpacking the Sardines: What Makes Public Transit Demand Management Programs Successful? (TRBAM-24-00137)

Bogdan Kapatsila/University of Alberta, Emily Grise/University of Alberta

Modeling Transportation Mode Choices Under Private Car Use Constraints (TRBAM-24-00867)

Filippos Adamidis/Technical University of Munich, Christelle Al Haddad/Technical University of Munich, Constantinos Antoniou/Technical University of Munich

Nudging Toward Sustainable Urban Mobility: Exploring Behavioral Interventions for Promoting Public Transit Usage (TRBAM-24-05013)

Avani Aravind/University of Memphis, Sabyasachee Mishra/University of Memphis, Matthew Meservy/University of Memphis

2009

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 152A

How Well (or Not) Are We Doing?: Effective Performance Evaluation Practices

Peter Rafferty, Cambridge Systematics, presiding

Sponsored By Standing Committee on Performance Management

Are we moving the needle toward strategic and policy priorities? Is performance-based planning working? Do we have the evidence we need to really know? As we adopt data-driven approaches for informed decisions, have we gone back to assess whether we're achieving desired outcomes? This retrospective provides an honest look at what's working well (or not) and efforts to assess the effectiveness of our investments and project delivery. Drawing from latest measurement advances and tools for a range of priorities, the panel will reflect on progress improving performance, highlight innovative efforts to effectively measure outcomes across an array of organizations, and outline needs for closing known gaps in our practice.

Preliminary Performance Outcomes of the Accelerating Innovative Mobility and Integrated Mobility Innovation Demonstration Programs (P24-20556)

Justin John/Federal Transit Administration (FTA)

Assessing the Performance of Completed SMART SCALE Projects (P24-20555)

Margie Ray/Virginia Department of Transportation

Evaluating the Delivery and Oversight of State-Funded Local Bridge Projects (TRBAM-24-02628)

Zhaoxiang He/University of Wisconsin, Milwaukee, Habib Tabatabai/University of Wisconsin, Milwaukee, Xiao

Qin/University of Wisconsin, Milwaukee

Moving the Needle: Connecting Outputs to Equitable Outcomes in Seattle (P24-21071)

Samuel Marshall/City of Seattle

2010

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 151B

Implementation of Binders for Flexible Pavement Papers

Brian Hirt, CTC and Associates LLC, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management, Standing Committee on Binders for Flexible Pavement

After hearing about each of the chosen papers, respondents will brainstorm, discuss, and develop strategies to ensure asphalt practitioners require and researchers contemplate knowledge and technology transfer options for each research project and, if appropriate, set aside resources so implementation is possible once the research project is complete. Each of the four papers will be presented (focus on the results, not the methods) and then discussed (responses and audience discussion).

Laboratory Short-Term Aging of Crumb Rubber Modified Asphalt: Rolling Thin Film Oven Test Temperature Optimization and Performance Investigation (TRBAM-24-01870)

Tian Jin/Tongji University, Liping Liu/Tongji University, Yue Hu/Tongji University, Jiang Yuan/Tongji University, Lijun Sun/Tongji University

Implementation Response (P24-20501)

Ashley Buss/Iowa Department of Transportation

Toward More Comprehensive Rejuvenated Asphalt Binder Analysis: A Case Study of Chemical and Failure Properties (TRBAM-24-02962)

Yudi Wang/University of Illinois, Urbana-Champaign, Babak Asadi/University of Illinois, Urbana-Champaign, Ramez Hajji/University of Illinois, Urbana-Champaign

Implementation Response (P24-20502)

Ross "Oak" Metcalfe/Montana Department of Transportation

Chemical and Rheological Properties of Bitumen Partially Substituted with Rice Straw-Based Lignin from Bio-Ethanol Industry Residue (TRBAM-24-03373)

Thavamani Andiyappan/Indian Institute of Technology, Kharagpur, Rahul Reddy Banapuram/Indian Institute of Technology, Kharagpur, Minchala Divakar/Indian Institute of Technology, Kharagpur, Kranthi Kuna/Indian Institute of Technology, Kharagpur

(continued)

Implementation Response (P24-20503)

Robert McGennis/HF Sinclair Corporation

Recommended Changes to the Precision Estimates of AASHTO T 313 (TRBAM-24-05167)

Haleh Azari/Pavement Systems, LLC, Chandra Akisetty/Pavement Systems, LLC, Alaeddin Mohseni/Pavement Systems, LLC

Implementation Response (P24-20505)

Aaron Perez/North Dakota Department of Transportation, Jhony Habbouche/Virginia Transportation Research Council

2011

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 156

Alternatives to Fixed Price Contracts

Patricia de la Peña, Nossaman LLP, presiding

Sponsored By Standing Committee on Contract Law

The market for large infrastructure projects has undergone numerous changes in the past several years, one of which is an increasing aversion by some contractors and service providers to the traditional fixed-price contract model. Contractors are seeking alternatives to lump sum pricing. A panel of industry experts will discuss the current state of the market for construction and service projects and the resulting impacts on contractor availability and competition. The discussion will include popular alternatives to lump-sum pricing, contractual mechanisms to mitigate the associated risks, as well as procurement options related to contractor selection methods and alternative delivery methods involving negotiated pricing.

Alternatives to Fixed Price Contracts (P24-21060)

Douglas Gransberg/Gransberg & Associates, Inc., Ann-Therese Schmid/Nossaman LLP, Robert Raynes/Turner & Townsend Inc, Jay Hietpas/Minnesota Department of Transportation

2012

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 201

Risk Management Perspectives on Resilience Planning

Terri Parker, Missouri Department of Transportation, presiding

Sponsored By Standing Committee on Tort Liability and Risk Management

Panel members will participate in a round table discussion about risk management issues relating to resiliency planning including innovative predictive methods that can be used to predict events such as flooding or fires that may impact transportation systems. The panel will also discuss the potential legal and ethical implications for a public agency that does not inform of changing conditions accurately or appropriately.

Risk Management Perspectives on Resilience Planning (P24-21053)

Joshua Root/Minnesota Department of Transportation, Heidi Skinner/County of San Diego, Michael Fleming/Washington State Department of Transportation, Jason Bodart/S-E-A Limited

2013

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 204C

Corrosion Mitigation and Durability for Concrete Bridges

Wael Zatar, Marshall University, presiding

Sponsored By Standing Committee on Concrete Bridges

This session will consist of four presentations focusing on research that looks at causes and mitigation or prevention measures in concrete bridges. This session will look at what causes cracks in bridge decks, cost to repair corrosion damage and two novel material uses to preserve and prevent damage and corrosion.

Investigation of the Causes of Transverse Bridge Deck Cracking (TRBAM-24-00133)

Abdalla Alomari/Iowa State University, Brent Phares/Iowa State University, Zhengyu Liu/Iowa State University

(continued)

Cost Analysis of the Repair of Corrosion Damaged Members (TRBAM-24-05004)

goli Nossoni/University of New Haven, Olatomide Fayomi/University of New Haven, Aberahim Ardeshir/University of New Haven

Damage Mitigation of Prestressed Girders End Regions Using Shape Memory Alloys (TRBAM-24-00645)

Siyoung Park/University of Illinois, Urbana-Champaign, Bassem Andrawes/University of Illinois, Urbana-Champaign

Comparison of Flexural Behavior of Prestressed Concrete Bridge Beams with Different Strand Materials: A Case Study (TRBAM-24-05190)

Ayman Okeil/Louisiana State University, Abdeldjelil Belarbi/Louisiana State University

2014

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 207B

Material Characterization for Pavement Base Materials

Robert Bachus, Geosyntec Consultants, Inc., presiding

Sponsored By Standing Committee on Soil and Rock Properties and Site Characterization

Laboratory and Field Modulus Measurement of Missouri Coarse-Grained Soils Using Zorn Lightweight Deflectometers (TRBAM-24-05205)

Chuanjun Liu/Missouri University of Science and Technology, Xiong Zhang/Missouri University of Science and Technology,

Jenny Liu/Missouri University of Science and Technology, Beshoy Riad/Missouri University of Science and Technology

Harnessing Machine Learning for Resilient Modulus Prediction of Subgrade Soil: Leveraging an Extensive Data Set from Indiana (TRBAM-24-03003)

Laith Sadik/University of Cincinnati, Jia-Bin Chang/University of Cincinnati, Zhi-Ting Yeh/University of Cincinnati, Nayyar

Siddiki/University of Cincinnati, Mehdi Norouzi/University of Cincinnati, sara khoshnevisan/University of Cincinnati

Quality Control and Testing Methods for Compaction of Soil-Rock Mixture Subgrade (TRBAM-24-00489)

Longqi Liu/Inner Mongolia University, Zhenhao Fan/Inner Mongolia University, Qiao Hua/Inner Mongolia University, Yunshu

Yang/Inner Mongolia University

Optimized Characterization of the Permanent Deformation of Unbound Granular Materials Considering the Master Curve Concept (TRBAM-24-00051)

Bruno Mota/Federal University of Rio de Janeiro, Mariluce Ubaldo/Federal University of Rio de Janeiro, Caroline

Lima/Federal University of Rio de Janeiro, Luis Alberto Nascimento/Federal University of Rio de Janeiro, Thiago

Aragão/Federal University of Rio de Janeiro

2015

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 209AB

Evaluation of Material Properties for Transportation Earthworks

Stacey Kulesza, Texas State University, presiding

Surya Congress, Michigan State University, presiding

Sponsored By Standing Committee on Transportation Earthworks

Feasibility Study on the Use of Drone-Based Infrared Thermography for Soil Moisture Detection in Highway Embankment and Dam Inspection (TRBAM-24-02606)

Qiming Chen/Louisiana Department of Transportation and Development, Zhongjie Zhang/Louisiana Department of

Transportation and Development

Estimation of Subgrade Resilient Modulus Using Repeated Load California Bearing Ratio Test (TRBAM-24-06154)

Supratim Kaushik/National Institute of Technology, Calicut, Suman Kumar/National Institute of Technology, Calicut, Anjan

Siddagangaiah/National Institute of Technology, Calicut

Determination of Failure Depth of a Slope Using Electrical Resistivity Imaging and Drone (TRBAM-24-06512)

Md Fahimuzzaman Khan/Jackson State University, Audrika Nahian/Jackson State University, Fariha Rahman/Jackson

State University, Sadik Khan/Jackson State University, Rakesh Salunke/Jackson State University, Ian La Cour/Jackson

State University

Evaluation of Material Properties of Lightweight Cellular Concrete Backfill for Earthworks (P24-20737)

Jie Han/University of Kansas, Yu-qiu Ye/University of Kansas, Brad Dolton/CEMATRIX (Canada) Inc., Robert

Parsons/University of Kansas

(continued)

Hysteresis and Electromagnetic Response of Unsaturated Fouled Ballast (P24-20763)

Stacey Kulesza/Texas State University, Mohammed Shakeel Abid/Texas State University

2016

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 202A

The Three Es: Holistically Assessing the Sustainability of Asphalt Pavements

Derek Nener-Plante, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Production and Use of Asphalt

This session will deliver an in-depth exploration of asphalt pavements and mixtures, focusing on sustainability holistically and the quantification of performance, economic, and environmental aspects. Learn how tools such as balanced mix design and perpetual pavement design can help agencies and contractors maximize performance while balancing costs through life-cycle cost analysis. The new science of environmental product declarations and life cycle assessment will be explored to quantify environmental impacts. Finally, attendees will explore what it will take to bring all these ideas together offering a deeper understanding of asphalt sustainability and its multifaceted components.

Thinking Big Picture: What Does Sustainability Mean for Asphalt Pavements? (P24-20158)

Derek Nener-Plante/Federal Highway Administration (FHWA)

Building on Performance (P24-20159)

Adam Hand/University of Nevada, Reno

When Cash Is King: Assessing Economic Impacts (P24-20160)

Curt Turgeon/Minnesota Department of Transportation

Green Is in: Environmental Impacts (P24-20161)

Amlan Mukherjee/WAP Sustainability

Bringing It All Together (P24-20162)

James Willis/National Asphalt Pavement Association

2017

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 202B

Doctoral Research in Asphalt: Hybrid Lightning Lectern-Poster Session

Amir Ghalipour, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Binders for Flexible Pavement, Standing Committee on Production and Use of Asphalt, Standing Committee on Asphalt Materials Selection and Mix Design, Standing Committee on Asphalt Mixture Evaluation and Performance

Design, Placement, Laboratory, and Field Evaluation of Rejuvenated Cold Recycled Asphalt Mixtures (P24-21125)

Development of Mechanistic-Empirical Analysis Framework to Assess the Resiliency of Pavements Against Flooding at Project and Network Levels (P24-21126)

Sustainable and Effective Chip Seal Construction: Insights into Quality Control, Reclaimed Materials, and Performance Testing (P24-21127)

Compatibility Characterization of Reclaimed Asphalt Pavement, Binder, and Recycling Agents in Asphalt Mixtures (P24-21128)

Assessment of Variability in Source of Polyethylene on the Design of Plastic Modified Asphalt Mixtures (P24-21129)

Enhancing Durability of Asphalt Mixtures with High Recycled Asphalt Materials Contents (P24-21130)

Reflective Cracking Model for Airport Asphalt Overlay Design (P24-21131)

(continued)

Developing a High-Efficient Pavement Modeling Software for Digital Twins of Roadway Infrastructure (P24-21132)

Laboratory Studies on Cool Pavement Technologies (P24-21133)

2018

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 204AB

Advancements on Techniques to Promote Self-Healing in Asphalt Mixtures

Edith Arambula, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Asphalt Mixture Evaluation and Performance

Emerging Technologies in Self-Healing Bituminous Materials for Pavement Infrastructure (P24-20212)

Jose Norambuena-Contreras/University of Bio-Bio

Crack Healing of Asphalt Materials: An Overview of Rilem TC-278 Activities (P24-20215)

Hassan Baaj/University of Waterloo

Engineering Porous Self-Healing Capsules for Asphalt Mixtures Using Simulations and Experiments (P24-20213)

Ramez Hajj/University of Illinois, Urbana-Champaign, Yujia Lu/University of Illinois, Urbana-Champaign

Characterization of Fatigue Damage and Self-Healing of Asphalt Mortars with Alginate-Based Polynuclear Capsules (P24-20214)

Silvia Caro/Universidad de Los Andes, Angelica Viana-Sepulveda/Universidad de Los Andes, Jose Norambuena-Contreras/University of Bio-Bio

2019

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 101

Improving Concrete Pavement Design

Xijun Shi, Texas State University, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Concrete Pavements

Erosion Potential of Stabilized Support Layers for Concrete Pavements and Overlays (TRBAM-24-01337)

John DeSantis/Youngstown State University, Jeffery Roesler/Youngstown State University

Local High Reliability Calibration of Faulting Model Using Pavement Management Data (TRBAM-24-01991)

Lucio De Salles/Rochester Institute of Technology (RIT), Haoran Li/Rochester Institute of Technology (RIT), Lev Khazanovich/Rochester Institute of Technology (RIT)

Concrete Pavement Design Analysis Using AASHTOWare Pavement Mechanistic-Empirical Design Software (TRBAM-24-05169)

Xingdong Wu/Kansas State University, Seyedarmin Motaharibari/Kansas State University, Mustaque Hossain/Kansas State University, Stacey Kulesza/Kansas State University, Nat Velasquez/Kansas State University

Assessment of Revisions to the Pavement Mechanistic-Empirical Design Cracking Model for Continuously Reinforced Concrete Pavement Design (TRBAM-24-05710)

Myungjin Seong/Texas A&M University, Atheer Jumaah/Texas A&M University, Dan Zollinger/Texas A&M University

2020

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 207A

Asphalt Pavement Network Evaluation for Heavy Loads

Mena Souliman, University of Texas, Tyler, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Asphalt Pavements

This lectern session presents the evaluation of asphalt pavement networks in terms of how to design for heavy loads and changing vehicle dynamics. Asphalt pavement modeling is presented in detail.

(continued)

Impact of Dynamic Wheel Loading on Flexible Pavement Responses for Non-Free Rolling Conditions (TRBAM-24-00226)

JOHANN CARDENAS HUAMAN/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

The Effect of Heavy-Duty Electric Vehicles on Pavement Contact Forces (TRBAM-24-01926)

Jaime Hernandez/Marquette University, Angeli Jayme/Marquette University, JOHANN CARDENAS HUAMAN/Marquette University, Imad Al-Qadi/Marquette University

Local Calibration and Implementation of Pavement Mechanistic-Empirical for Composite Pavements in New Jersey (TRBAM-24-03152)

Pengyu Xie/Rutgers University, Hao Wang/Rutgers University, Zhe Wan/Rutgers University, Thomas Bennert/Rutgers University

Prediction of Network-Level Cracking Performance for Flexible and Rigid Pavements in Louisiana Using Neural Network Models (TRBAM-24-04492)

yilong Liu/Louisiana Department of Transportation and Development, Zhong Wu/Louisiana Department of Transportation and Development

2021

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 103B

Advancements in Winter Maintenance

Richard Nelson, American Association of State Highway and Transportation Officials, presiding

Sponsored By Standing Committee on Winter Maintenance

Dilution Rate of Solid NaCl Anti-Icers Under Freezing Rain Conditions (TRBAM-24-00680)

Scott Koefod/Cargill Salt Group

Design and Implementation of a Full-Scale Shallow Geothermal Bridge De-Icing System in North Texas (TRBAM-24-02270)

Aditya Deshmukh/Texas A&M University, College Station, Alireza Fakhrabadi/Texas A&M University, College Station, Gang Lei/Texas A&M University, College Station, Xinbao Yu/Texas A&M University, College Station, Anand Puppala/Texas A&M University, College Station

Model-Scale Investigation of Snow Flow Dynamics and Cast Characteristics of Snowplows (TRBAM-24-01731)

Alex Klein-Paste/Norwegian University of Science and Technology (NTNU), Oda Aspevold/Norwegian University of Science and Technology (NTNU)

Using Connected Vehicle Data to Assess the Impact of Winter Road Maintenance Operations on Traffic Safety (TRBAM-24-02888)

Minsoo Oh/Iowa State University, Jing Dong-O'Brien/Iowa State University

Unveiling the Black Box Through Explainable Artificial Intelligence for Winter Road Surface Conditions Prediction (TRBAM-24-01414)

Mingjian Wu/University of Alberta, Tae Kwon/University of Alberta

2022

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 206

Data Analysis for Bridge Management

Arezoo Imani, BDI, presiding

Sponsored By Standing Committee on Bridge and Structures Management

This session consists of four presentations related to bridge data analysis. The first explores data interconnection gaps related to overheight bridge vehicle strikes. The second details a bridge consumption analysis study. The third looks at the challenges with predicting bridge ratings. The last presentation discusses a machine learning model used to better predict bridge performance.

Unveiling Data Interconnection Gaps: Linking Overheight Vehicle Bridge Strike Data (TRBAM-24-02735)

Mohammad Amer/University of Wisconsin, Milwaukee, Yang Li/University of Wisconsin, Milwaukee, Xiao Qin/University of Wisconsin, Milwaukee

Bridges Consumption Analysis for Oversize and Overweight Vehicles on Roads of Texas (TRBAM-24-00919)

Jose Weissmann/University of Texas, San Antonio, Angela Weissmann/University of Texas, San Antonio, Danilo Inoue/University of Texas, San Antonio, Jorge Prozzi/University of Texas, San Antonio

A Framework of Deep Neural Networks to Predict Bridge Condition Rating: Challenges and Opportunities (TRBAM-24-02969)

F. Clara Fang/University of Hartford, Daniel Jimenez Gil/University of Hartford, Mohammadrahim Kazemzadeh/University of Hartford, Weiliang Xu/University of Hartford

Evaluating the Accuracy of Predicted Bridge Condition Using Machine Learning: The Role of Condition History (TRBAM-24-02075)

Parham Paydavosi/KN Toosi University, Mohammad Saied Dehghani/KN Toosi University, Sue McNeil/KN Toosi University

2023 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 146B

Travel Barriers to Accessibility and Practices in Improved Americans with Disabilities Act Implementation

Todd Hansen, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Accessible Transportation and Mobility

In the U.S., accessible transportation options for persons with disabilities and older adults are not equitably distributed, and accessibility improvements can lag behind in being fully implemented. This session will discuss these issues in transportation inequality and inequity in mobility options, and also potential ways for agencies and organizations to improve the implementation of ADA improvements for those using active transportation modes.

Mobility of Movement Challenged Persons and Transportation Inequality (TRBAM-24-03345)

Md Musfiqur Rahman Bhuiya/University of California, Davis, Md Musleh Uddin Hassan/University of California, Davis, Jesus Barajas/University of California, Davis

Inequity in the Mobility of Older Adults in the United States, 2001–2017 (TRBAM-24-00755)

Ralph Buehler/Virginia Polytechnic Institute, John Pucher/Virginia Polytechnic Institute, Rico Wittwer/Virginia Polytechnic Institute, Regine Gerike/Virginia Polytechnic Institute

What Can Organizations and Practitioners Do to Improve Americans with Disabilities Act Implementation for Infrastructure Design and Supply? (TRBAM-24-00297)

Molly Wagner/University of Colorado, Denver, Manish Shirgaokar/University of Colorado, Denver, Aditi Misra/University of Colorado, Denver, Wesley Marshall/University of Colorado, Denver

Performance Metrics for Tracking Americans with Disabilities Act Transition Plan Implementation (TRBAM-24-04765)

Yochai Eisenberg/University of Illinois, Chicago, Mackenzie Hayes/University of Illinois, Chicago, Amy Hofstra/University of Illinois, Chicago, Delphine Labbe/University of Illinois, Chicago, Robert Gould/University of Illinois, Chicago, Robin Jones/University of Illinois, Chicago

2024 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 146C

A Discussion of Multidisciplinary Frameworks to Improve Systems, Enterprise, and Cyber Resilience

Scott Tousley, IT Cadre, presiding

Sponsored By Standing Committee on Systems, Enterprise, and Cyber Resilience

In this session attendees will gain a comprehensive understanding of the challenges and strategies related to multidisciplinary projects crossing from product design, to policy and programming as well as from cyber to safety and physical infrastructures. The session will explore practical applications, industry experiences, and future-oriented research efforts aimed at enhancing the resilience of transportation systems in the face of evolving cyber threats.

Merging Cybersecurity and Safety Analysis in Product Design (P24-20299)

Dajiang Suo/Massachusetts Institute of Technology

Bridging the Gap: Testing Physical and Cybersecurity Vulnerabilities in Trucking and Cargo Movements (P24-20300)

Urban Jonson/National Motor Freight Traffic Association (NMFTA)

(continued)

Shaping the Future: Advanced Research Projects Agency–Infrastructure's Approach to Advancing the Cyber Resilience of Critical Infrastructure Systems (P24-20301)

Matthew Miller/Cambridge Systematics

2025 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 146A

Air Quality Co-Benefits of Electric Vehicles and Environmental Justice

Shams Tanvir, California State University Long Beach, presiding

Sponsored By Standing Committee on Air Quality and Greenhouse Gas Mitigation, Standing Committee on Resource Conservation and Recovery, Standing Committee on Transportation Energy, Standing Committee on Alternative Fuels and Technologies

This session will focus on the implications of electric mobility for air quality and environmental justice. Attendees will learn 1) methods to quantify the greenhouse gas reductions associated with vehicle electrification, 2) the co-benefits of electric vehicles for air quality and health, across population sub-groups, 3) beyond cars, the benefits of other forms of electric mobility.

Lifecycle CO2 Emissions Estimation for Electric Scooters: How Is the Sector Progressing? (TRBAM-24-01904)

Emmanouil Chaniotakis/University College London, Dylan Johnson/University College London, Maria Kamargianni/University College London

The Influence of Automated Control Integrated with Electrification on Fuel Efficiency of Human-Driven Vehicles in the Network (TRBAM-24-05329)

Zulqarnain Khattak/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

Can Electric Vehicle Carsharing Bridge the Green Divide?: A Study of BlueLA's Environmental Impacts Among Underserved Communities and the Broader Population (TRBAM-24-05445)

Ziad Yassine/University of California, Berkeley, Elliot Martin/University of California, Berkeley, Susan Shaheen/University of California, Berkeley

Developing an Integrated Activity-Based Travel Demand Model for Analyzing the Impact of the Electric Vehicle on Traffic Network and Vehicular Emissions (TRBAM-24-05499)

Hasan Shahrier/Dalhousie University, Vajeeran Arunakiranthan/Dalhousie University, Fariba Hossain/Dalhousie University, Muhammad Habib/Dalhousie University

Quantification of the 2022–2050 Cumulative Air Quality Benefits of Dynamic Fleet Electrification Scenarios for Light-Duty Vehicles in the United States (TRBAM-24-02616)

Jean Schmitt/University of Toronto, Marianne Hatzopoulou/University of Toronto, Heather MacLean/University of Toronto, I. Daniel Posen/University of Toronto

Oregon Department of Transportation: Emerging Methods for Connecting Life-Cycle Project Greenhouse Gas (GHG) Calculations to GHG Goals (TRBAM-24-03950)

Tara Weidner/Oregon Department of Transportation, Sharon Liljenwall/Oregon Department of Transportation, Alex Bettinardi/Oregon Department of Transportation, Chi Mai/Oregon Department of Transportation, Ryan Farncomb/Oregon Department of Transportation, Scott Noel/Oregon Department of Transportation

2026 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 140

The Land Use–Transportation Feedback Loop: New Data and Insights

Noreen McDonald, University of North Carolina, Chapel Hill, presiding

Sponsored By Standing Committee on Economic Development and Land Use

This session presents papers with novel approaches for better understanding the land-use and transportation feedback loop and emphasizes the power of data for informing policies and actions. Case studies are presented on the topics of spatial data mining for urban form analysis, challenges in intergovernmental data sharing, introducing more granular land use data in conventional travel models, and using buildings' telecommunications telemetry data for more tailored transportation and building operations.

Commercial Land Use Change and Growth Processes: An Assessment of Retail Location in Lisbon, Portugal, 2010–2020, Using Cellular Automata and a Volunteered Geographic Information–Enriched Data Set (TRBAM-24-00100)

Rui Colaco/Universidade de Lisboa Instituto Superior Tecnico, João de Abreu e Silva/Universidade de Lisboa Instituto Superior Tecnico

Transportation Data Utilization in Local Governments' Sustainable Land Use Decisions (TRBAM-24-01418)

So-Ra Baek/California State Polytechnic University, Pomona, Dohyung Kim/California State Polytechnic University, Pomona

How Can Travel and Building Occupancy Feed into Each Other?: An Integrated Framework for Modeling Interactions Between Transport and Building Systems (TRBAM-24-03362)

Huiqiao Hou/Imperial College London, Jacek Pawlak/Imperial College London, Aruna Sivakumar/Imperial College London

How Land Use and Travel Impedance Affect Spatial Interactions: An Intracity Metro Perspective (TRBAM-24-06054)

Mingshu Tian/Tongji University, Hangfei Lin/Tongji University, Xiang Liu/Tongji University

2027 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 145A

Innovative Public Transit Fare Policies: Lessons from the Real World

Lee Biernbaum, No Organization, presiding

Sponsored By Standing Committee on Public Transportation Marketing and Fare Policy

This session will present on the public transit customer impacts of innovative fare policies implemented in the real world. The first presentation will report early results from Germany's Deutschlandticket, which started in May 2023 and is priced at only 49 euros per month. Next, we will hear evaluation results from a pilot program conducted in Washington, DC in which transit prices were discounted for low-income riders. The third talk will focus on commuter rail rider behavior in the Chicago region to estimate transit fare elasticities post-COVID-19. Last, we will learn about a new institutional pass program implemented in the Philadelphia area and how it has impacted customer travel behavior.

Germany's Newest Fare, the Deutschlandticket: First Insights on Funding and Travel Behavior (TRBAM-24-04269)

Allister Loder/TU Munich, Fabienne Cantner/TU Munich, Victoria Dahmen/TU Munich, Klaus Bogenberger/TU Munich

Can Free or Half-Price Discounted Transit Increase Public Transportation Use for Low-Income Residents?: Evidence from a Randomized Pilot Program in Washington, DC (TRBAM-24-05553)

Alyssa Huberts/The Lab @ DC, Kayleigh Campbell/The Lab @ DC, Roxanne Oroxom/The Lab @ DC, Danielle Moore/The Lab @ DC, Katherine Gan/The Lab @ DC, Sam Quinney/The Lab @ DC

Post-COVID-19 Sensitivity of Commuter Rail Pass Holders to Multi-System Fares (TRBAM-24-02776)

Dan O'Neil/Korbato, John Attanucci/Korbato, Frederick Salvucci/Korbato

Participation and Behavior Changes in the First Year of SEPTA's Key Advantage Institutional Pass Program (TRBAM-24-02435)

Gabrielle Pristera/Jawnt, John Holmes/Jawnt, Ruth Miller/Jawnt

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 145B

Mobility Hubs: Improving Access Through Research and Practice

Charles Rivasplata, San Jose State University, presiding

Lisa Ballard, King County (WA) Metro Transit, presiding

Sponsored By Standing Committee on Passenger Intermodal Facilities, Standing Committee on Transit Management and Performance, Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Public Transportation Planning and Development, Standing Committee on Ferry Transportation, Standing Committee on Bicycle Transportation

The past decade has seen an increased emphasis on mobility hubs worldwide. Mobility hubs bring together transport modes such as public transit, bicycles, car share, micromobility, and other means of travel. They should offer a safe, convenient, and accessible space to transfer from one mode to another. Mobility hubs can be designed to support a community's needs, such as including a one-stop shop to access vital services, incorporating transit-oriented development, or supporting electric charging. This session reviews past literature on mobility hubs and their role in community planning and design, as well as progress on these hubs among professionals involved in their planning and implementation in North America.

Planning for Multimodal Mobility Hubs in the New Mobility Era: State of Practice, Research Trends, and Knowledge Gaps (TRBAM-24-04262)

Eliana Duarte/University of Florida, Anran Zheng/University of Florida, Louis Merlin/University of Florida, John Renne/University of Florida, Xiang Yan/University of Florida

Panel Discussion (P24-20761)

Krute Singa/Metropolitan Transportation Commission (MTC), Jacob Armstrong/King County Metro, Judy Shanley/Easterseals, Steve Jaffe/Los Angeles County Transportation Authority (LACMTA)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 144C

Improved Risk Assessment and Analysis for Derailment Prevention

Jo Strang, American Short Line and Regional Rail Association, presiding

Theodore Sussmann, OST-R/Volpe Center, presiding

Sponsored By Standing Committee on Rail Safety, Standing Committee on Railroad Infrastructure Design and Maintenance

This joint session hosted by the Rail Safety and Railroad Infrastructure Committees will discuss accident analyses and risk assessments for derailment prevention from multiple perspectives. Presentations will address human and organizational factors, train length and distributed power, high-risk shipments, and inspection considerations. Speakers will also share industry and regulatory perspectives on this important issue.

Involvement of Human Organizational Factors in Railway Accidents: Application of the Human Factors Analysis, Classification System, and Bayesian Network (P24-21178)

Md. Rifat Hossain Bhuiyan/Islamic University of Technology

Comparative Analysis of the Effect of Distributed Power on Long-Train Derailment Characteristics (P24-21179)

Xinhao Liu/University of Illinois, Urbana-Champaign, Christopher Barkan/University of Illinois, Urbana-Champaign, Chen-Yu Lin/National Yang Ming Chiao Tung University

Derailment Risk Assessment for High-Risk Shipments for the Texas Department of Transportation (P24-21185)

David Bierling/Texas A&M Transportation Institute, Jeffery Warner/Texas A&M Transportation Institute

Inspections to Support Improved Derailment Risk Assessment (P24-21186)

Rick Lloyd/Texas A&M Transportation Institute, Jeffery Warner/Texas A&M Transportation Institute

2030

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 147B

Intermodal Freight Transportation Interactive Research Charette

Jolene Hayes, Fehr & Peers, presiding

Sponsored By Standing Committee on Intermodal Freight Transport

This session will feature short lectern presentations by paper authors followed by a small poster session in the rear portion of the session room.

A Diffused Memetic Optimizer for Berth Allocation and Scheduling at Marine Container Terminals Under Disruptive Events (TRBAM-24-01020)

Bokang Li/Florida A&M University-Florida State University, Zeinab Elmi/Florida A&M University-Florida State University, Maxim Dulebenets/Florida A&M University-Florida State University

An Exact Optimization Method for Multi-Objective Ship Schedule Recovery in Liner Shipping in the Wake of Disruptive Events (TRBAM-24-01022)

Zeinab Elmi/Florida A&M University-Florida State University, Bokang Li/Florida A&M University-Florida State University, Benbu Liang/Florida A&M University-Florida State University, Yui-yip Lau/Florida A&M University-Florida State University, Marta Borowska-Stefańska/Florida A&M University-Florida State University, Szymon Wiśniewski/Florida A&M University-Florida State University, Maxim Dulebenets/Florida A&M University-Florida State University

Crane Operation Optimization in Sharing Yards of Sea-Rail Intermodal Ports (TRBAM-24-01127)

Wenqian Liu/Beijing Jiaotong University, Xiaoning Zhu/Beijing Jiaotong University, Li Wang/Beijing Jiaotong University, Siyu Li/Beijing Jiaotong University

Chassis: The Bottleneck to Trade and Transportation (TRBAM-24-04134)

Bethany Stich/University of New Orleans, Janey Camp/University of New Orleans, Craig Philip/University of New Orleans, Miguel Moravec/University of New Orleans, Faisal Mallum/University of New Orleans

Decentralized Dispatching for Efficiency in Container Terminals (TRBAM-24-04463)

Lawrence Henesey/Blekinge Institute of Technology, Mihalis Golias/Blekinge Institute of Technology

Auction-Based Berth Allocation at Passenger Marine Terminals with Continuous Berth Space (TRBAM-24-05104)

Dimitrios Giampouranis/S&P Global, Mihalis Golias/S&P Global, Sotirios Theofanis/S&P Global, Maria Boile/S&P Global

Decarbonization Potential of Drayage Trucks Using Real-World Data in Southern California (TRBAM-24-05426)

Guoliang Feng/University of California, Irvine, Craig Rindt/University of California, Irvine, Stephen Ritchie/University of California, Irvine

2031

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 144AB

Planning for Trucks

Daniel Murray, American Transportation Research Institute (ATRI), presiding

Sponsored By Standing Committee on Trucking Industry Research

Truck Parking and Planning Research: A deep dive on AI, Environmental Justice, Prioritization, and Regional Planning

Impacts of Truck Parking on Environmental Justice Communities: A Case Study in Kern County, California (TRBAM-24-01544)

Runhua Xiao/University of California, Davis, Miguel Jaller/University of California, Davis

A Two-Stage Prioritization Framework for Identifying and Ranking Truck Parking Projects (TRBAM-24-02694)

Dan Andersen/Cambridge Systematics, Katie Kirk/Cambridge Systematics, Guilherme Leao/Cambridge Systematics, Bridget Wiegart/Cambridge Systematics, Sebastian Guerrero/Cambridge Systematics, Shashank Pulikanti/Cambridge Systematics, Jenni Hosey/Cambridge Systematics

Forecasting Short-Term Truck Parking Demand with Multivariate Time Series and Temporal Fusion

Transformers: An Artificial Intelligence Approach (TRBAM-24-03763)

Jack Kong/Texas A&M Transportation Institute, Nicole Katsikides, Ph.D./Texas A&M Transportation Institute, William Eisele/Texas A&M Transportation Institute, Jeffery Warner/Texas A&M Transportation Institute, Jason Wallis/Texas A&M Transportation Institute, Yunlong Zhang/Texas A&M Transportation Institute

(continued)

Assessing Regional Agency Interest in Truck Freight Planning Practices: Insights from Virginia (TRBAM-24-04161)

John Miller/Virginia Department of Transportation, Nishara Vavitta Parambil/Virginia Department of Transportation

2032 CM (1.75)

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 143C

Integrating Hydrogen and Related Infrastructure in the Aviation System

Chris Groh, University of New Orleans, presiding

Jacqueline Kuzio, Texas A&M Transportation Institute, presiding

Fin Bonset, VHB, presiding

Sponsored By Standing Committee on Aviation System Planning, Standing Committee on Environmental Issues in Aviation, Standing Committee on Aviation Safety, Security and Emergency Management

The session will provide various perspectives of the hydrogen initiatives being developed across the country and how aviation will play a role in the multimodal fuel and the impacts to the overall aviation system. We will feature speakers with different roles in the effort to expand hydrogen's use as an alternative funding source, address strategies in which airports can leverage themselves to become more involved in conversations, and how certain projects may be used to attract new funding and private development.

Aviation Hydrogen Commercial User (P24-20757)

Todd Solomon/ZeroAvia

State Hydrogen Perspective (P24-20758)

Stephen Holliday/Louisiana Department of Transportation and Development

U.S. Federal Government Perspective (P24-20759)

Kazunori Nagasawa/National Renewable Energy Laboratory (NREL)

2033

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 143AB

Airfield Pavement Evaluation Criteria for Rutting, Roughness, Skid Resistance, and Survival Life Analysis for Pavement Markings

Eileen Vélez-Vega, Puerto Rico Department of Transportation and Public Works, presiding

Sponsored By Standing Committee on Aircraft/Airport Compatibility

Using a Dual-Wheel Aircraft Gear on Thin Asphalt Pavements to Evaluate Rutting Criteria (TRBAM-24-02163)

William Robinson/U.S. Army Corps of Engineers (USACE), Jeb Tingle/U.S. Army Corps of Engineers (USACE)

Criteria and Methods for Evaluating Pavement Roughness That Affects Pavement–Aircraft Interaction (TRBAM-24-01579)

Angeliki Armeni/National Technical University of Athens (NTUA), Christina Plati/National Technical University of Athens (NTUA), Andreas Loizos/National Technical University of Athens (NTUA)

A Method Determining Critical Operating Parameters for Landing Aircraft Based on Runway Pavement Skid Resistance (TRBAM-24-02919)

Yuanyuan Liu/East China JiaoTong University, Tongtong Wan/East China JiaoTong University

Survival Life and Life-Cycle Cost Analysis of Airfield Pavement Markings (TRBAM-24-03103)

Zhe Wan/Rutgers University, Hao Wang/Rutgers University

Preliminary Evaluation of Rutting Tests Criteria for Flexible Airfield Pavements (TRBAM-24-05319)

Nicole Elias/University of Nevada, Reno, Elie Hajj/University of Nevada, Reno, Thomas Bennert/University of Nevada, Reno, Fujie Zhou/University of Nevada, Reno, Adam Hand/University of Nevada, Reno, Navneet Garg/University of Nevada, Reno

2034

Monday, 08:00 a.m. - 09:45 a.m., Convention Center, 147A

Research in Maritime Decarbonization

Michael Aldridge, U.S. Environmental Protection Agency (EPA), presiding

Sponsored By Standing Committee on Marine Environment

This lectern session comprises papers pertaining to the decarbonization of ports via efficiency improvements, shore power, shipping routes and mode shifts.

A GIS-Assisted Framework for Maritime Network Design Under Electrification and Port Efficiency Evaluation (TRBAM-24-00424)

Orfeas Karountzos/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA), Orestis Schinas/National Technical University of Athens (NTUA)

Emerging Research Challenges and Priorities for Enabling Net-Zero Shipping: Identification and Expert Evaluation (TRBAM-24-01350)

Rubal Dua/King Abdullah Petroleum Studies and Research Center, Ahm Anwar/King Abdullah Petroleum Studies and Research Center, Prateek Bansal/King Abdullah Petroleum Studies and Research Center

Getting to Zero Shipping Emissions at Berth: Solution Space and Future Needs (TRBAM-24-05965)

Thalis Zis/Cyprus University

The Green Route: An Analysis of Mode Change as a Strategy for Carbon Emission Reduction (TRBAM-24-06113)

Elizabeth Bruttomesso/Massachusetts Institute of Technology, Shruti Pant/Massachusetts Institute of Technology, Thomas Koch/Massachusetts Institute of Technology, Elenna Dugundji/Massachusetts Institute of Technology

2035



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Ballroom A

U.S. Department of Transportation Leadership in Innovation: Technology to Protect Vulnerable Road Users

Valerie Briggs, Federal Highway Administration (FHWA), presiding

Sponsored By Executive Committee

Technological advances in transportation hold a lot of promise toward reaching the transportation community's Safe System goal of zero traffic fatalities. This dynamic panel will explore innovations that can make our roadways safer for our most vulnerable road users: non motorists. Attendees are invited to join in an open forum to discuss current challenges and learn ways to integrate technology into the transportation system and hear from early adopters of technologies that are saving lives. During this session, attendees will also examine ways to protect non motorists through a multi-faceted prism of technological opportunities that can be incorporated in strategic plans for safer streets, including vehicle-to-everything communication (connected vehicles), infrastructure designs, and other emerging innovations.

Panel Discussion (P24-21192)

Debra Bezzina/University of Michigan, Transportation Research Institute, Paul Scullion/Alliance for Automotive Innovation, Diane Gutierrez-Scaccetti/New Jersey Department of Transportation

2036



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Freeway Operations Research

Aemal Khattak, University of Nebraska, Lincoln, presiding

Sponsored By Standing Committee on Freeway Operations

Safety and Operational Analysis of Free Right-Turn Ramps (TRBAM-24-02235) - B767

MM Shakiul Haque/University of Nebraska, Lincoln, Jon Camenzind/University of Nebraska, Lincoln, Aemal Khattak/University of Nebraska, Lincoln

(continued)

Safety Impact of Introducing an Automated Road Debris Removal System in South Korea (TRBAM-24-00009) - B758

Subin Park/Korea Institute of Civil Engineering and Building Technology (KICT), Jin Guk Kim/Korea Institute of Civil Engineering and Building Technology (KICT), Choong Heon Yang/Korea Institute of Civil Engineering and Building Technology (KICT)

Operational Reliability of Hard Shoulder Running on Freeways (TRBAM-24-04859) - B762

Justin Geistefeldt/Ruhr University, Bochum

Evaluation of the Operational and Safety Effects of a Variable Speed Limit System in Virginia (TRBAM-24-00812) - B759

Hyun Cho/Virginia Transportation Research Council, Erin Robartes/Virginia Transportation Research Council, Michael Fontaine/Virginia Transportation Research Council

Effectiveness of Speed Reduction Treatments on Rural-to-Urban Freeway Transition Zones (TRBAM-24-01910) - B768

Raul Pineda-Mendez/Kimley-Horn and Associates, Inc., Andrew Tarko/Kimley-Horn and Associates, Inc.

Methodology for Automatically Setting Camera View to Mile Marker for Traffic Incident Management (TRBAM-24-02422) - B754

Jijo Mathew/Purdue University, Haydn Malackowski/Purdue University, Christopher Gartner/Purdue University, Jairaj Desai/Purdue University, Edward Cox/Purdue University, Ayman Habib/Purdue University, Darcy Bullock/Purdue University

High-Resolution Traffic State Estimation Using Pix2Pix Generative Adversarial Networks Model Based on Sparse Probe Data (TRBAM-24-06456) - B750

Jongho Kim/Korea Advanced Institute of Science and Technology (KAIST), Hwasoo Yeo/Korea Advanced Institute of Science and Technology (KAIST), Kitae Jang/Korea Advanced Institute of Science and Technology (KAIST)

Integrated Control of Variable Speed Limit and Ramp Metering Using Deep Reinforcement Learning and Elliptic Bivariate Relationship (TRBAM-24-03267) - B755

Dongju Ka/Seoul National University, Geongyu Min/Seoul National University, Sungyong Chung/Seoul National University, Chungwon Lee/Seoul National University

Evaluating the Safety Effectiveness of Control of Access Fencing Using a Propensity Scores Framework (TRBAM-24-04557) - B757

David Appiah/Louisiana Transportation Research Center (LTRC), Milhan Moomen/Louisiana Transportation Research Center (LTRC), M. Ashifur Rahman/Louisiana Transportation Research Center (LTRC), Julius Codjoe/Louisiana Transportation Research Center (LTRC)

Does Traffic Congestion Impact Traffic Incidents?: A Case Study of a Major United Kingdom Motorway (TRBAM-24-03138) - B764

Paraskevi Koliou/Imperial College London, South Kensington, Léah Camarcat/Imperial College London, South Kensington, Mohammed Quddus/Imperial College London, South Kensington, Paraskevi Michalaki/Imperial College London, South Kensington

Proactive Traffic Source Back-Tracing Framework in Real Time for Congestion Avoidance in Urban Road Networks (TRBAM-24-02219) - B760

Yanqing Yang/Tongji University, Jichen Zhu/Tongji University, Xiaoguang Yang/Tongji University, Yuqi Shi/Tongji University

Investigating the Benefits, Challenges, and Potential Applications of Waze for Real-Time Traffic Management in Public Safety Answering Points (TRBAM-24-03854) - B763

Silvy Munira/Center for Transportation Research, Kristie Chin/Center for Transportation Research, Michael Moore/Center for Transportation Research, Natalia Juri/Center for Transportation Research

A Novel Approach to Freeway Traffic State Estimation Using Only Mobile Sensing Data (TRBAM-24-02113) - B752

Yuyu Zhang/Zhejiang University, Mingming Zhao/Zhejiang University, Yibing Wang/Zhejiang University, Yujie Zhang/Zhejiang University, Xi Luo/Zhejiang University, Qirong Lu/Zhejiang University

Cooperative Decision Making of Connected Automated Vehicles On-Ramp Merging Based on Multi-Agent Reinforcement Learning (TRBAM-24-01268) - B753

Boyuan Zhao/Harbin Institute of Technology, Jianxun Cui/Harbin Institute of Technology, Tianyi Zhang/Harbin Institute of Technology, Handong Yao/Harbin Institute of Technology

Variable Speed Limit for Non-Recurrent Congestion to Improve Safety: Empirical Analysis of Dynamic Variable Speed Limit Coordination (TRBAM-24-01039) - B769

Yuhang Zhang/Vanderbilt University, Marcos Quinones-Grueiro/Vanderbilt University, William Barbour/Vanderbilt University, Joshua Scherer/Vanderbilt University, Zhiyao Zhang/Vanderbilt University, Junyi Ji/Vanderbilt University, Clay Weston/Vanderbilt University, Gautam Biswas/Vanderbilt University, Daniel Work/Vanderbilt University

(continued)

Exploring the Risks and Opportunities for Ramp Metering Control in Mixed Autonomy Traffic: A Case Study in Minnesota (TRBAM-24-02990) - B765

Benjamin Rosenblad/University of Minnesota, Mingfeng Shang/University of Minnesota, Raphael Stern/University of Minnesota

2037



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advances in Truck and Bus Safety Research

Robert Scopatz, VHB, presiding

Sponsored By Standing Committee on Truck and Bus Safety

Crashes Involving Light-Duty Trucks: Exploring Contributing Factors by Crash Types Using Decision Forest and Decision Tree Classifier (TRBAM-24-00058) - B730

Md Mahmud Hossain/Auburn University

A Data-Driven Driving Performance Evaluation Method for Truck Drivers in the Internet of Vehicle Environment (TRBAM-24-00103) - B731

Chenxiao Zhang/Southeast University, Yongfeng Ma/Southeast University, Shuyan Chen/Southeast University, Guanyang Xing/Southeast University

Analysis of Influencing Factors of Highway Traffic Conflicts Considering the Proportion of Large Vehicles Interaction Effect (TRBAM-24-00323) - B732

Cai Jing/Kunming University of Science and Technology, Rui Zhao/Kunming University of Science and Technology, Xiaojing Wang/Kunming University of Science and Technology, Fengxiang Guo/Kunming University of Science and Technology

Analysis of Diverse Crash Types Involving Different Heavy Vehicles: A Case Study from Queensland, Australia (TRBAM-24-01681) - B733

Paula Macias/Queensland University of Technology, Florian Heraud/Queensland University of Technology, Krishna Behara/Queensland University of Technology, Alexander Paz/Queensland University of Technology

Full Bayes Before and After Analysis to Evaluate the Freight Vehicle Rest Break Policy Changes (TRBAM-24-01911) - B734

Nuri Park/Hanyang University, Sungjun Lee/Hanyang University, Juneyoung Park/Hanyang University

A Binary Logit Model to Assess Safe Speed for Trucks in Adverse Road Weather Conditions (TRBAM-24-02429) - B735

Homa Motavallian Naeini/University of Manitoba Faculty of Engineering, Rillagoda Yasanthi/University of Manitoba Faculty of Engineering, Babak Mehran/University of Manitoba Faculty of Engineering, Jonathan Regehr/University of Manitoba Faculty of Engineering

Predicting Truck Crash Involvement (TRBAM-24-02433) - B736

Abigail Huffman/American Transportation Research Institute (ATRI), Brenda Lantz/American Transportation Research Institute (ATRI)

Investigating the Temporal Stability of Factors Affecting Run-Off-Road Crashes Involving Large Trucks (TRBAM-24-02648) - B737

Md Al Adib Sarker/Florida International University, Hamid Rezaei/Florida International University, Xia Jin/Florida International University

An Evaluation Framework of the Behavior of Bus Drivers Based on GPS Traces and Bus Schedules: A Case Study in Qingdao (TRBAM-24-02727) - B738

Liye Zhang/Institute of High Performance Computing, Yanyan Sun/Institute of High Performance Computing, Wenkai Xu/Institute of High Performance Computing, Jie Song/Institute of High Performance Computing

Screening Professional Drivers for Brain Injury: Reliability and Convergent Validity of the Frontal Systems Behavior Scale (TRBAM-24-02783) - B739

Ali Khanpour/University of Texas, Austin, Aniseh Yaseri/University of Texas, Austin, Mark King/University of Texas, Austin, Paolo Perego/University of Texas, Austin, Fatemeh Marofi/University of Texas, Austin

Enhancing Safety in Freight Logistics: Insights from Heterogeneity of Truck Fatal Crashes Based on Nationwide Crash Data (TRBAM-24-03353) - B748

John Kodi/HNTB, Angela Kitalli/HNTB, Henrick Haule/HNTB, Emmanuel Kidando/HNTB, Boniphace Kutela/HNTB, Subasish Das/HNTB

Text Mining and Reliable Network Analysis of Police Narrative Reports: Understanding Traffic Violations in Severe Truck-Involved Crashes (TRBAM-24-03450) - B742

Kai Kang/Chang'an University, Jie Zhang/Chang'an University, Wenjian Jia/Chang'an University, Tong Zhu/Chang'an University

Heavy Goods Vehicle Drivers Safety Efficiency Assessment Based on Data Envelopment Analysis (TRBAM-24-03518) - B743

Jianhua Zhang/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Ying Yao/Beijing University of Technology, Yujia Xiang/Beijing University of Technology, Chang Liu/Beijing University of Technology

Revision of the Driver Behavior Questionnaire for Bus Drivers in China Based on In-Vehicle Monitoring Data (TRBAM-24-03789) - B744

Yujun Jiao/Tongji University, Xuesong Wang/Tongji University, David Hurwitz/Tongji University

Predicting Commercial Motor Vehicle Crash Severity in Kansas at District Level Using Explainable Machine Learning (TRBAM-24-04614) - B745

Nikesh Gyawali/Kansas State University, Sarthak Khanal/Kansas State University, Doina Caragea/Kansas State University, H. M. Abdul Aziz/Kansas State University, Eric Fitzsimmons/Kansas State University

Investigating Key Factors of Large Truck Rollover Crashes on Interstates: A Study Using the Random-Parameter Binary Probit Model (TRBAM-24-04683) - B747

M. Ashifur Rahman/Louisiana Transportation Research Center (LTRC), Milhan Moomen/Louisiana Transportation Research Center (LTRC), Julius Codjoe/Louisiana Transportation Research Center (LTRC), Vijaya Gopu/Louisiana Transportation Research Center (LTRC)

Factors Explaining Truck-Involved Fatal Crashes on a National Highway in India (TRBAM-24-06018) - B749

Hasan Naqvi/National Highways Authority of India

2038



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Complex Behavior Requires Advanced Methods

Ramin Shabanpour, University of North Florida, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

The session includes papers that used an advanced approach in analyzing travel behavior.

Fully Interpretable Deep Causal Model and Counterfactual Forecasting Framework for Travel Behavior Applications (TRBAM-24-02254) - A120

Kimia Kamal/Toronto Metropolitan University, Bilal Farooq/Toronto Metropolitan University, Farshad Keshani/Toronto Metropolitan University

Extensive Hypothesis Testing for the Testing and Estimation of Latent Classes and Travel Choice Models (TRBAM-24-02922) - A130

Prithvi Beeramoole/QUT FIT: Queensland University of Technology Faculty of Science and Engineering, Ryan Kelly/QUT FIT: Queensland University of Technology Faculty of Science and Engineering, Md. Mazharul Haque/QUT FIT: Queensland University of Technology Faculty of Science and Engineering, Paul Scott/QUT FIT: Queensland University of Technology Faculty of Science and Engineering, Alexander Paz/QUT FIT: Queensland University of Technology Faculty of Science and Engineering

Does Experience Affect Route Choice?: An Instance-Based Learning Approach Using Vehicle Trajectory Data (TRBAM-24-02934) - A133

Varun Varghese/Hiroshima University, Lichen Luo/Hiroshima University, Yoshinao Ishii/Hiroshima University, Shintaro Fukushima/Hiroshima University, Makoto Chikaraishi/Hiroshima University

Comparing Satellite and Street View Images in Predicting Travel Behavior (TRBAM-24-04113) - A140

Jinghao Cao/University of Florida, Qingyi Wang/University of Florida, Shenhao Wang/University of Florida

Recognition of Representative Activity Patterns Using Latent Dirichlet Allocation Topic Models (TRBAM-24-04383) - A141

Dawei Li/Southeast University, Jiulonghu, Dongding Li/Southeast University, Jiulonghu, Yuchen Song/Southeast University, Jiulonghu

An Empirical Investigation of the Distribution of Travelers' Willingness to Pay: A Comparison Between a Parametric and a Non-Parametric Approach (TRBAM-24-06031) - A142

Maliheh Tabasi/University of New South Wales - Kensington Campus: University of New South Wales, John Rose/University of New South Wales - Kensington Campus: University of New South Wales, Andrea Pellegrini/University of New South Wales - Kensington Campus: University of New South Wales, Taha Rashidi/University of New South Wales - Kensington Campus: University of New South Wales

Modelling Choices: The Conflict Between Realism, Ease of Implementation and Prediction Performance (TRBAM-24-06426) - A143

Panagiotis Tsoleridis/University of Leeds, Thomas Hancock/University of Leeds, Stephane Hess/University of Leeds

Willingness to Shift Toward Biogas-Fueled Bus Rapid Transit in Karachi, Pakistan: A Push-Pull-Mooring Perspective (TRBAM-24-00216) - A151

Farrukh Baig/Central South University, Aqsa Talpur/Central South University, An Liu/Central South University, Mir Aftab Hussain Talpur/Central South University, Jaeyoung Lee/Central South University

Accounting for Individual Preferences in Combined Decision Choice Behaviors: Exploring the Travel Characteristics of the Spectators (TRBAM-24-00636) - A152

Chunjiao Dong/Beijing Jiaotong University, Junyue Wang/Beijing Jiaotong University, Daiyue Dong/Beijing Jiaotong University, Xuedong Yan/Beijing Jiaotong University, Zhihua Xiong/Beijing Jiaotong University

Does Implicit Attitude Affect Travel Mode Choice Behaviors?: A Study of Customized Bus Attraction to Urban Railway Riders (TRBAM-24-00708) - A153

Xinyun Lao/Tongji University, Yu Shen/Tongji University, Jing Cao/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

Trip Chaining Patterns of Tourists: A Real-World Case Study (TRBAM-24-01225) - A111

Cong Qi/Southeast University, Jonas De Vos/Southeast University, Tao Tao/Southeast University, Linxuan Shi/Southeast University, Xiucheng Guo/Southeast University

A New Behavioral Model of Infection Fear and Transit Avoidance: Theoretical Development and Testing (TRBAM-24-01809) - A162

Rumana Sarker/Monash University, Graham Currie/Monash University, James Reynolds/Monash University

Tour-Level Mode Choices and Their Effect on Car Ownership Decisions (TRBAM-24-02740) - A163

Mohammad Mehdi Oshanreh/University of Washington, Seattle, Rubina Singh/University of Washington, Seattle, Nazmul Arefin Khan/University of Washington, Seattle, Don MacKenzie/University of Washington, Seattle

Exploring the Role of the Built and Natural Environment in Encouraging Active Travel for Different Trip Purposes in Montreal (TRBAM-24-02839) - A172

Pegah Salsabilian/McGill University, Jose Arturo Jasso Chavez/McGill University, Kevin Manaugh/McGill University

2039



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Unlocking the Travel Behavior Puzzle: Insights into Activities, Modes, Time Usage, Patterns, and Related Contexts and Covariates

Toshiyuki Yamamoto, Nagoya University, presiding

Mahdieh Allahviranloo, City College of New York, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

Welcome to this captivating poster session! Here, we showcase a collection of intriguing posters that offer unique perspectives on travel behavior. Through diverse datasets and innovative methodologies, our posters delve into the fascinating world of how people move and why. Join us in exploring the myriad facets of travel behavior through these visually engaging and thought-provoking presentations.

Exploring Time Allocation and Travel Behavior in Qatar Using Sequence Alignment and Multivariate Data Analysis (TRBAM-24-02291) - A173

Konstadinos Goulias/University of California, Santa Barbara, Kadin Rascoe/University of California, Santa Barbara

An Empirical Study of Walking Route Choice Preferences in Sydney, Australia (TRBAM-24-02756) - A182

Tanapon Lilasathapornkit/University of New South Wales, Meead Saberi/University of New South Wales

Research on Behavior Mechanism of Travel Mode Choice During Large-Scale Events (TRBAM-24-02997) - A183

Wen Zheng/Zhejiang University College of Civil Engineering and Architecture, Der-Horng Lee/Zhejiang University College of Civil Engineering and Architecture, Xiqun Chen/Zhejiang University College of Civil Engineering and Architecture, Zhiwu Dong/Zhejiang University College of Civil Engineering and Architecture, Shangkun Jiang/Zhejiang University College of Civil Engineering and Architecture

(continued)

Investigating Mode Choice Preferences in a Tradable Mobility Credit Scheme (TRBAM-24-03526) - A113
Thomas Schatzmann/ETH Zurich, Santiago Álvarez-Ossorio Martínez/ETH Zurich, Allister Loder/ETH Zurich, Kay Axhausen/ETH Zurich, Klaus Bogenberger/ETH Zurich

Travel Behavior and the 15-Minute City: Access Sufficiency and Alternative Mode Use in the City of Toronto (TRBAM-24-03868) - A192
Anton Yu/University of Toronto, Scarborough, Christopher Higgins/University of Toronto, Scarborough

Examining School Escorting Travel Behaviors from the Perspective of the Trip Chain (TRBAM-24-05207) - A193
Yanli Wang/Tongji University, Zhengliang Xiang/Tongji University, Linbo Li/Tongji University

Comparative Analysis of the Work Commutes of Natives and Foreign-Born Persons in the Washington, DC, Metropolitan Area (TRBAM-24-05349) - A200
Martin Ndegwa/Morgan State University, Celeste Chavis/Morgan State University, Hyeon-shic Shin/Morgan State University

A Novel Approach for Reducing Vehicle Miles Travelled by Simply Re-Sequencing Trips (TRBAM-24-05565) - A122
Ameer Shakur/University of Washington, Xiangyang Guan/University of Washington, Arsalan Esmaili/University of Washington, Shuai Huang/University of Washington, Cynthia Chen/University of Washington

Modeling Analysis of Travel Behavior in the Post-Pandemic Era Considering Individual Heterogeneity (TRBAM-24-05774) - A201
Yue Du/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Xizhen Chen/Beijing Jiaotong University, Daqian Wan/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Framework for Generating 7-Day Activity Schedules Considering Household Interactions (TRBAM-24-05958) - A101
Anna Reiffer/Karlsruhe Institute of Technology, Peter Vortisch/Karlsruhe Institute of Technology

Prediction of Telecommuting Engagement Through Machine Learning to Enhance Travel Survey Data (TRBAM-24-05983) - A102
Anna Reiffer/Karlsruhe Institute of Technology, Martin Kagerbauer/Karlsruhe Institute of Technology, Peter Vortisch/Karlsruhe Institute of Technology

Activity and Trip Making by Commuters in Metropolitan Areas (TRBAM-24-06040) - A202
Jihyun Hwang/Korea Advanced Institute of Science and Technology (KAIST), Kitae Jang/Korea Advanced Institute of Science and Technology (KAIST)

Relationship between Subjective Meanings of Travel-based Multitasking and Activity Types (TRBAM-24-06436) - A203
Teppei Mizoguchi/University of Tsukuba

Are the Senior Citizens Satisfied with Their Travel Environment and Mode Choice Decisions? (TRBAM-24-05244) - A210
Hasan Shahrier/Dalhousie University, Muhammad Habib/Dalhousie University, Devin Husk/Dalhousie University

Investigation of Travel Mode Choices in Greater Toronto and Hamilton Area in the Presence of Fully Autonomous Vehicle Modal Alternatives (TRBAM-24-05227) - A131
Mohammad Faizus Salehin/University of Toronto, Adam Weiss/University of Toronto, Khandker Habib/University of Toronto

Restaurant Preference Personas: Travel-Based Motivations of Eating Out (TRBAM-24-03613) - A123
Kaitlyn Ng/University of Washington, Gouri Shankar Mishra/University of Washington, Cynthia Chen/University of Washington

Segments of Senior Urban Mobility in the United Kingdom and Canada (TRBAM-24-01925) - A211
Manon Prédhumeau/University of Leeds, Ed Manley/University of Leeds

How Does the Work Stress of Laborers Affect Their Commuting Mode from the Perspective of Physical and Mental Feeling (TRBAM-24-01860) - A110
Hanshang Du/Southeast University, Junlan Chen/Southeast University, Jiawen Yu/Southeast University, Qianyi Jiang/Southeast University, Xiucheng Guo/Southeast University

Travel Behavior Changes Among Post-Secondary Students After the COVID-19 Pandemic: A Case of Greater Toronto and Hamilton Area, Canada (TRBAM-24-01644) - A212
Attiya Haseeb/Toronto Metropolitan University, Raktim Mitra/Toronto Metropolitan University

Exploring Stability in Travel Attitudes: Evidence from a Repeated Cross-Sectional Study in Sydney, Australia (TRBAM-24-00618) - A213
Veronique Van Acker/No Organization, Corinne Mulley/No Organization

(continued)

Experience with Autonomous Taxi Rides and Continuous Use Intention of Travelers in China: Associated and Insightful (TRBAM-24-03702) - A220

Yilin Sun/Zhejiang University, Yinan Dong/Zhejiang University, Dianhai Wang/Zhejiang University, E.O.D Waygood/Zhejiang University, Hamed Naseri/Zhejiang University, Yueqing Jiang/Zhejiang University

Personal Activity Queue Inference: Assessing Activity Stress and Loads of Travelers (TRBAM-24-04605) - A221

Ahmadreza Azizzadeh/University of Hawai'i, Manoa, Roger Chen/University of Hawai'i, Manoa

Analyzing Travel Behavior of Underrepresented Youth for Out-of-School Time Activities Using Discrete Choice Modeling Techniques (TRBAM-24-05544) - A222

Nazifa Akter/University of Kansas School of Engineering, Saumik Sakib Bin Masud/University of Kansas School of Engineering, Bradley Lane/University of Kansas School of Engineering, Alexandra Kondyli/University of Kansas School of Engineering

Understanding Mode Choice Behavior of People with Disabilities: A Case Study in Utah (TRBAM-24-05608) - A223

Megh Bahadur KC/University at Buffalo, SUNY, Ziqi Song/University at Buffalo, SUNY, Keunhyun Park/University at Buffalo, SUNY, Keith Christensen/University at Buffalo, SUNY

Post-COVID-19 Work and Leisure Preferences in Switzerland: A Multivariate Multiple Discrete Continuous Probit Approach (TRBAM-24-05813) - A112

Caroline Winkler/Swiss Federal Institute of Technology (ETH Zurich), Katherine Asmussen/Swiss Federal Institute of Technology (ETH Zurich), Aupal Mondal/Swiss Federal Institute of Technology (ETH Zurich), Chandra Bhat/Swiss Federal Institute of Technology (ETH Zurich), Kay Axhausen/Swiss Federal Institute of Technology (ETH Zurich)

Drivers and Barriers of Public Transport Usage: Insights from Psychographic Profiles of a Latent Class Analysis (TRBAM-24-06092) - A103

Jan Vallee/Karlsruhe Institute of Technology, Lisa Ecke/Karlsruhe Institute of Technology, Lukas Barthelmes/Karlsruhe Institute of Technology, Peter Vortisch/Karlsruhe Institute of Technology

How Do Individuals Travel When Shared Mobility Services Are Not Available? (TRBAM-24-06145) - A230

Dakota Svendsen/University of British Columbia, Okanagan, Uthpalee Hewage/University of British Columbia, Okanagan, Mahmudur Fatmi/University of British Columbia, Okanagan

Investigating Factors Affecting In-Vehicle Activities and Activity Duration of Railway Passengers (TRBAM-24-06167) - A231

YongJin Chung/Yonsei University, Baekkyu Namkung/Yonsei University, Jinhee Kim/Yonsei University

Can Decoy Effects Nudge Ride-hailing Drivers' Preferences to Adopt Electric Vehicles? (TRBAM-24-06329) - A232

Jiaxuan Ding/National University of Singapore, Eui-Jin Kim/National University of Singapore, Vladimir Maksimenko/National University of Singapore, Jiangbo Yu/National University of Singapore, Prateek Bansal/National University of Singapore

Understanding the Impacts of Extreme Heat on Human Activity-Mobility and Time Use Patterns (TRBAM-24-06327) - A121

Irfan Batur/Arizona State University, Victor Alhassan/Arizona State University, Mikhail Chester/Arizona State University, Steven Polzin/Arizona State University, Cynthia Chen/Arizona State University, Chandra Bhat/Arizona State University, Ram Pendyala/Arizona State University

Impact of Weather on Travel Behavior throughout the Seasons - Analysis of two National German Household Surveys (TRBAM-24-06481) - A100

Pia Tulodetzki/Karlsruher Institut für Technologie, Gabriel Wilkes/Karlsruher Institut für Technologie, Martin Kagerbauer/Karlsruher Institut für Technologie, Peter Vortisch/Karlsruher Institut für Technologie

A Structural Equation Modelling and Machine Learning Approach for understanding mode choice using values and attitudes (TRBAM-24-06511) - A233

Yihan Xu/Technical University of Munich, Sana Jaafar/Technical University of Munich, David Duran-Rodas/Technical University of Munich

Understanding User Switching Willingness from Online Car to Customized Bus: A Comparative Analysis of Three User Types (TRBAM-24-01300) - A240

Xueqi Ding/Southeast University, Xizhen Zhou/Southeast University, Yanjie Ji/Southeast University

How Frequent Is Frequent Enough?: Exploring the Relationship Between the Approach to Identify Ridesourcing Users and the Specification of Ridesourcing Adoption Models (TRBAM-24-00713) - A132

Maria Vetrici/University of Toronto, Patrick Loa/University of Toronto, Felita Ong/University of Toronto, Khandker Habib/University of Toronto



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Characterization of Cementitiously Stabilized Geomaterials

Shenghua Wu, University of South Alabama, presiding

Jami Rushing, U.S. Army Engineer Research and Development Center, presiding

Sponsored By Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Low-Volume Roads, Standing Committee on Aggregates, Joint Subcommittee on Unbound Granular Materials (with AKG00), Standing Committee on Pavement Condition Evaluation

Mechanical Characterization of Stabilized Soils Using a Simple Strain Sweep Cyclic Testing (TRBAM-24-03768)

- B716

Ayazhan Bazarbekova/Texas A&M University, College Station, Yong-Rak Kim/Texas A&M University, College Station, Dallas Little/Texas A&M University, College Station, John Rushing/Texas A&M University, College Station

The Impact of the Clay Content of Base Material on the Performance of Cement-Modified Recycled Base

(TRBAM-24-05988) - B717

Omar Amer/Clemson University, Isaiah Conrad/Clemson University, Haitham Hussein/Clemson University, Prasad Rangaraju/Clemson University

Resilient Moduli Characterization of Cement-Treated Silty Soil at High-Compaction Energy Condition

(TRBAM-24-02354) - B726

Prince Kumar/Texas A&M University, College Station, Anand Puppala/Texas A&M University, College Station, Surya Congress/Texas A&M University, College Station, Jeb Tingle/Texas A&M University, College Station

Assessment of Durability of Chemically Stabilized Soils Using Different Moisture Susceptible Methods

(TRBAM-24-02355) - B727

Prince Kumar/Texas A&M University, College Station, Anand Puppala/Texas A&M University, College Station, Nriporjyoti Biswas/Texas A&M University, College Station, Surya Congress/Texas A&M University, College Station, Jeb Tingle/Texas A&M University, College Station, Dallas Little/Texas A&M University, College Station

Application of Ultrasonic Pulse Velocity as Non-Destructive Tool to Determine Engineering Properties of Cementitiously Stabilized Aggregates Mixes (TRBAM-24-03912) - B719

Rohit Kumar Sharma/Indian Institute of Technology, Bombay, Dharamveer Singh/Indian Institute of Technology, Bombay, Satyanarayana Dasaka/Indian Institute of Technology, Bombay

Estimating the Laboratory Resilient Modulus for Cement-Treated Base Materials (TRBAM-24-02033) - B728

Jinho Kim/Texas A&M Transportation Institute, Stephen Sebesta/Texas A&M Transportation Institute

Microcracking Considerations in Full-Depth Reclamation with Cement (TRBAM-24-04429) - B718

Stephanus Louw/University of California, Davis, David Jones/University of California, Davis, John Harvey/University of California, Davis, Joseph Hammack/University of California, Davis



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Unique Applications of Nontraditional Stabilizers and Recycled Materials

Sara Ghatee, Connecticut Department of Transportation, presiding

Sponsored By Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Low-Volume Roads, Standing Committee on Aggregates, Joint Subcommittee on Unbound Granular Materials (with AKG00), Standing Committee on Design and Rehabilitation of Asphalt Pavements

Foamed Asphalt Stabilization of Incinerated Bottom Ash for Use in Road Pavements (TRBAM-24-02792) - B724

Carl Bierman/Texas A&M Transportation Institute, André Greyling/Texas A&M Transportation Institute, Ole Grann Andersson/Texas A&M Transportation Institute

Investigation of Bridge Scour Mitigation with Nature Binding Materials Biopolymers (TRBAM-24-02211) - B720

Kejun Wen/Jackson State University, Bin Zhang/Jackson State University, Junjie Li/Jackson State University, Farshad Amini/Jackson State University

Stabilization Mechanisms of Lateritic Clay Soil Using KR Slag Based on Chemical and Microstructure Analysis and Their Effects on Soil-KR Resilient Modulus and Permanent Deformation Response (TRBAM-24-04657) - B723

Flávia Bastos/University of Nebraska, Lincoln, Lucas Bridi/University of Nebraska, Lincoln, Patrício Pires/University of Nebraska, Lincoln, Jamilla Teixeira/University of Nebraska, Lincoln

Evaluation of EICP-Treated Soil Performance under Freeze-Thaw Cyclic Effect (TRBAM-24-06298) - B721

Shaini Aluthgun Hewage/Rowan University, Kaniz Roksana/Rowan University, Chao Sheng Tang/Rowan University, Cheng Zhu/Rowan University

Evaluation of Locally Available, Calcined, Clay-Based Geopolymer for the Stabilization of Expansive Soils (TRBAM-24-01394) - B725

Sopharith Chou/Texas A&M University, College Station, Nripojyoti Biswas/Texas A&M University, College Station, Anand Puppala/Texas A&M University, College Station, Oscar Huang/Texas A&M University, College Station, Miladin Radovic/Texas A&M University, College Station

Feasibility study of Geopolymer Treated Base using Full Depth Reclamation- A Sustainable Approach (TRBAM-24-06280) - B722

Abhitesh Sachdeva/Indian Institute of Technology, Roorkee, Gondaimi Rongmei Naga/Indian Institute of Technology, Roorkee, PRAVEEN KUMAR/Indian Institute of Technology, Roorkee, MERAJ KHAN/Indian Institute of Technology, Roorkee

Enhancing Durability of Stabilized Expansive Clays Through Gypsum Incorporation (TRBAM-24-03811) - B715

Ayazhan Bazarbekova/Texas A&M University, College Station, Yong-Rak Kim/Texas A&M University, College Station, Dallas Little/Texas A&M University, College Station, Jong Suk Jung/Texas A&M University, College Station, Yong-Boo Park/Texas A&M University, College Station

Mechanical Performance of Sandy Soil Treated with a Cationic Polyelectrolyte (TRBAM-24-04388) - B714

Jianxin Huang/Texas A&M University, College Station, Ayazhan Bazarbekova/Texas A&M University, College Station, Javier Grajales/Texas A&M University, College Station, Dallas Little/Texas A&M University, College Station, Yong-Rak Kim/Texas A&M University, College Station, John Rushing/Texas A&M University, College Station

2042



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advanced Concrete Placement and Testing Techniques

Parth Panchmatia, Kansas State University, presiding

Sponsored By Standing Committee on Properties of Concrete and Constituent Materials

Poster session for research exploring advanced concrete placement and testing techniques

The Effect of Initial Curing Temperature and Duration on the 28-Day Concrete Compressive Strength (TRBAM-24-02539) - B713

Anton Schindler/Auburn University, Jackson White/Auburn University, Kyle Fleming/Auburn University

Compaction Delay and Temperature Effects on Early-Age Properties of Roller-Compacted Concrete (TRBAM-24-02912) - B712

Jeffery Roesler/University of Illinois, Urbana-Champaign, Jordan Ouellet/University of Illinois, Urbana-Champaign, Joshua Cheung/University of Illinois, Urbana-Champaign, Jeffrey LaHucik/University of Illinois, Urbana-Champaign, Aaron Dunton/University of Illinois, Urbana-Champaign

Nonproprietary Ultra-High Performance Concrete for Application to Pretensioned Bridge Girders: Design, Development, Evaluation, and Full-Scale Testing (TRBAM-24-04273) - B711

Mary Beth Hueste/Texas A&M University, Hyeonki Hong/Texas A&M University, Amreen Fatima/Texas A&M University, Anol Mukhopdhyay/Texas A&M University, John Mander/Texas A&M University, Stefan Hurlebaus/Texas A&M University, Tevfik Terzioglu/Texas A&M University

Improved Roller-Compacted Concrete Compaction Efficiency Enabled by Cellulose Ethers (TRBAM-24-04309) - B710

Matheus Dorneles de Mello/Dow, Jessica Levin/Dow, Judith Espinoza/Dow, Andrew Mooney/Dow, Michael Radler/Dow

Preliminary Investigation into Using Resistivity to Assess Concrete Curing (TRBAM-24-04564) - B701

ETIENNE BEYA NKONGOLO/University of Missouri, Kansas City, DAN KING PE/University of Missouri, Kansas City, Peter Taylor/University of Missouri, Kansas City, John Kevern/University of Missouri, Kansas City

Early Observations of Thermodynamic Signatures of Sustainable Concrete Mixes at MnROAD (TRBAM-24-04893) - B700

Emil Bautista/Minnesota Department of Transportation, Joseph Podolsky/Minnesota Department of Transportation, Bernard Izevbekhai/Minnesota Department of Transportation

2043



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Modern Materials in Concrete Mixture Design

Parth Panchmatia, Kansas State University, presiding

Sponsored By Standing Committee on Properties of Concrete and Constituent Materials

Poster session discussing research of modern materials included in concrete mixture design and their effects on critical performance parameters.

Investigation on Properties of Cement Mortar Containing Various Sizes of Crumb Rubber as Sand

Replacements: Role of Edge-Oxidized Graphene Oxide Incorporation (TRBAM-24-00384) - B705

Mohammed Alamri/King Saud University

Effect of Fiber Content on Properties of Non-Proprietary Ultra-High Performance Concrete for Prestressed Girder Repair (TRBAM-24-00841) - B706

Dip Banik/Purdue University, Mujtaba Ahmadi/Purdue University, Jeffery Volz/Purdue University, Royce Floyd/Purdue University

The Impact of Vacuum Saturation Duration on Concrete Porosity: Validation of a Shorter Vacuum

Saturation-Based Procedure (TRBAM-24-05160) - B704

Makorogo Barugahare/University of Alabama, Tuscaloosa, Waleed Samour/University of Alabama, Tuscaloosa, Mary Kellogg/University of Alabama, Tuscaloosa, Armen Amirkhanian/University of Alabama, Tuscaloosa

Mechanical Behavior of Hybrid Fiber Reinforced Concrete with Recycled and Manufactured Steel Fibers (TRBAM-24-05656) - B703

Pratik Gujar/Texas State University, Beng Chong/Texas State University, Precious Aduwenye/Texas State University, Xijun Shi/Texas State University, Zachary Grasley/Texas State University

The Influence of Physicochemical Properties of Non-Traditional and Natural Pozzolans on Selected Characteristics of Concrete (TRBAM-24-06099) - B702

Alberto Castillo/Purdue University, Raikhan Tokpatayeva/Purdue University, Jan Olek/Purdue University, Farshad Rajabipour/Purdue University, Sulapha Peethamparan/Purdue University

2044



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Data Modeling and Prediction of Aggregate Materials in Pavements

Maziar Moaveni, Savannah State University, presiding

Sponsored By Standing Committee on Aggregates, Standing Committee on Geotechnical Instrumentation and Modeling, Joint Subcommittee on Unbound Granular Materials (with AKG00)

Prediction of Permanent Deformation Characteristics of Hybrid Unbound Granular Materials Using Modified Shakedown Criteria (TRBAM-24-04428) - B708

ASHISH MISHRA/National Institute of Technology Raipur, SUNNY GUZZARLAPUDI/National Institute of Technology Raipur

Investigating Aggregate Dynamic Response During Pavement Bulk Material Mixing via Practical-Virtual Real-Time Digital Twin Model (TRBAM-24-02080) - B699

Chonghui Wang/Rheinisch-Westfälische Technische Hochschule Aachen, Xiaodong Zhou/Rheinisch-Westfälische Technische Hochschule Aachen, Yuqing Zhang/Rheinisch-Westfälische Technische Hochschule Aachen, Markus Oeser/Rheinisch-Westfälische Technische Hochschule Aachen, Pengfei Liu/Rheinisch-Westfälische Technische Hochschule Aachen

Development of Aggregate Dielectric Constant Database for Asphalt Concrete Density Prediction (TRBAM-24-00150) - B709

Lama Abufares/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

Discrete Element Modeling of Light Weight Deflectometer Testing on Open-Graded Aggregate Materials (TRBAM-24-05782) - B707

Md. Fazole Rabbi/Oklahoma State University, Mahsa Gharizadehvarnosefaderani/Oklahoma State University, Ratul Mondal/Oklahoma State University, Debakanta Mishra/Oklahoma State University

2045



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Simulation and Case Study Results of Aggregates in Road Construction

Charles. Ochola, National Slag Association, presiding

Sponsored By Standing Committee on Aggregates, Standing Committee on Stabilization of Geomaterials and Recycled Materials, Joint Subcommittee on Unbound Granular Materials (with AKG00)

Durability of Recycled Concrete Aggregate as a Pavement Base Material Including Drainage: A Laboratory and Simulation Study (TRBAM-24-04065) - B698

Syed Ashik Ali/University of Oklahoma, Norman, Paul Cancino Arevalo/University of Oklahoma, Norman, Musharraf Zaman/University of Oklahoma, Norman, Royce Floyd/University of Oklahoma, Norman, Javier Rojas-Pochyla/University of Oklahoma, Norman

Stiffness Of Coarse Unbound Granular Material Used in Road Construction (TRBAM-24-00556) - B696

Lisa Hannasvik/Norwegian University of Science and Technology (NTNU), René Kierstein/Norwegian University of Science and Technology (NTNU), Johnny Johansen/Norwegian University of Science and Technology (NTNU), Ragnar Evensen/Norwegian University of Science and Technology (NTNU), Inge Hoff/Norwegian University of Science and Technology (NTNU)

Steel Slag as an Alternative Sustainable Road Construction Material: A Case Study from Bangladesh (TRBAM-24-04369) - B697

Ausmita Sarker/BRR: Bangladesh Road Research Laboratory, Md Obaidur Rahaman/BRR: Bangladesh Road Research Laboratory, Annesha Das Hasi/BRR: Bangladesh Road Research Laboratory, Md Abdullah Al Mamun/BRR: Bangladesh Road Research Laboratory

2046



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Innovation in Pavement Condition Evaluation: From Research to Practice

Ali Zalgout, GMU Geotechnical, Inc., presiding

Nathan Bech, ARRB Systems, presiding

Edgardo Block, Connecticut Department of Transportation, presiding

Gervas Wambura, JMT, Inc., presiding

Gerardo Flintsch, Virginia Polytechnic Institute, presiding

Sponsored By Standing Committee on Pavement Condition Evaluation

This session covers innovative approaches for pavement condition evaluation. It includes examples of novel sensor technologies, data fusing approaches, and automatic detection technologies at different levels of development. The posters cover products that have been tested in research projects, as well as other that are being implemented in both project and network level pavement managements applications. In particular, several posters present very interesting applications of artificial intelligence for pavement condition assessment.

Segment to Track for Pavement Crack on Unmanned Wheeled Robot with Light-Weight Neural Network (TRBAM-24-00760) - B680

Jianqi Zhang/Chang'an University, Xu Yang/Chang'an University, Wei Wang/Chang'an University, Hainian Wang/Chang'an University, Ling Ding/Chang'an University, Jayantha Kodikara/Chang'an University

Rutting Characterization of Steel Bridge Asphalt Pavement Based on Layer Thickness Profiling Using Ground-Penetrating Radar Based on Simulation and Accelerated Pavement Testing Data (TRBAM-24-00932) - B681

Siqi Wang/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Xin Sui/Hong Kong Polytechnic University, Jiwang Jiang/Hong Kong Polytechnic University, zijian he/Hong Kong Polytechnic University

Condition Survey and Data Analysis of Field Pavement Distress Development of Epoxy Asphalt Pavement on Steel Bridge Deck (TRBAM-24-01076) - B682

Zhu Zhang/Southeast University, Jiaqi Huang/Southeast University, Jiwang Jiang/Southeast University, Yajin Han/Southeast University, Shuheng Yu/Southeast University, Fujian Ni/Southeast University

A Multi-Label Convolutional Neural Network Model for Asphalt Distress Classification (TRBAM-24-01664) - B683

Mai Sirhan/Technion - Israel Institute of Technology, Shlomo Bekhor/Technion - Israel Institute of Technology, Arieh Sidess/Technion - Israel Institute of Technology

(continued)

Machine Learning–Based Ensemble Techniques for Optimal Prediction of Pavement Condition (TRBAM-24-01561) - B684

Sachin Gowda M K/Central Road Research Institute CSIR, Nandan C S/Central Road Research Institute CSIR, M A Jayaram/Central Road Research Institute CSIR, Aakash Gupta/Central Road Research Institute CSIR, Sampath Pasupunuri/Central Road Research Institute CSIR, Jaya Shinganmakki/Central Road Research Institute CSIR

Composite Dielectric Model of Asphalt Mixture Based on the General Effective Media Equation and the Mortar Theory (TRBAM-24-01533) - B685

Xingde Lin/Southeast University, Jiulonghu, Guanming Zhang/Southeast University, Jiulonghu, En Fan/Southeast University, Jiulonghu, Xianhua Chen/Southeast University, Jiulonghu

Fine-Grained Semantic Segmentation of Asphalt Pavement Cracks (TRBAM-24-01098) - B686

Jinhuan Shan/Chang'an University, Wei Jiang/Chang'an University, Yue Huang/Chang'an University

Deep Learning–Enhanced Numerical Simulation of Ground Penetrating Radar and Image Detection of Cracks Inside Pavement Structures (TRBAM-24-01135) - B687

Zhen Liu/Southeast University, Lutai Wang/Southeast University, Danyu Wang/Southeast University, Yihan Chen/Southeast University, Xingyu Gu/Southeast University

Improved Micromechanics Model of Carbon Nanotubes Modified Piezoresistive Polymethyl Methacrylate Considering the Effect of Mineral Fillers (TRBAM-24-01162) - B688

Tianling Wang/Southeast University, Markus Oeser/Southeast University, Pengfei Liu/Southeast University

Application of the YOLOv8s Algorithm in Distress Detection of Concrete Pavement: Performance Assessment Using Economic Training Process (TRBAM-24-01771) - B689

Mrityunjay Midya/National Institute of Technology, Rourkela, Mahabir Panda/National Institute of Technology, Rourkela, Gourab Saha/National Institute of Technology, Rourkela

Automatic Extraction of Cross Slope for Curved Ramps Using Light Detection and Ranging Point Clouds (TRBAM-24-02198) - B672

Yuchen Wang/No Organization, Yuhang Liu/No Organization, Jinzhou Liu/No Organization, Xiaoyang Chen/No Organization, Le Xu/No Organization, Bin Yu/No Organization

A Spatial Statistical Model to Analyze Historical Rutting Data (TRBAM-24-02478) - B673

Natoya Olita Amantha Stephen Jourdain/Norwegian University of Science and Technology (NTNU), Ingelin Steinsland/Norwegian University of Science and Technology (NTNU), Mamoona Birkhez-Shami/Norwegian University of Science and Technology (NTNU), Dagfin Gryteselv/Norwegian University of Science and Technology (NTNU), Doreen Siebert/Norwegian University of Science and Technology (NTNU), Alex Klein-Paste/Norwegian University of Science and Technology (NTNU)

An Improved Collection Method of High-Resolution Pavement Images and Deep Learning Models for Pavement Distress Detection (TRBAM-24-02586) - B674

Zachary Todd/University of Canterbury Te Kura Pāngarau: University of Canterbury School of Mathematics and Statistics, Jacobus Van der Walt/University of Canterbury Te Kura Pāngarau: University of Canterbury School of Mathematics and Statistics, Mofreh Saleh/University of Canterbury Te Kura Pāngarau: University of Canterbury School of Mathematics and Statistics, Heyang Li/University of Canterbury Te Kura Pāngarau: University of Canterbury School of Mathematics and Statistics

Defect Location Detection in Asphalt Materials Using Coplanar Capacitance Measurement (TRBAM-24-02830) - B675

Bin Shi/Southeast University, Qiao Dong/Southeast University, Xueqin Chen/Southeast University, Yao Kang/Southeast University, Shiao Yan/Southeast University, Xing Hu/Southeast University

Automatic Pavement Type Recognition for Image-Based Data Using a Multi-Features Fusion Network (TRBAM-24-02961) - B677

Zhen Chen/Tongji University, Hong Lang/Tongji University, Aidi Wang/Tongji University, Yuan Peng/Tongji University, Yingying Xing/Tongji University

Efficient Data Selection Based on Difficulty-Aware Module for Pavement Distress Segmentation (TRBAM-24-03862) - B678

Jiang Chen/Tongji University, Ye Yuan/Tongji University, Hong Lang/Tongji University, Shuo Ding/Tongji University, Jian Lu/Tongji University

Enhancing Pavement Performance Assessment: KSA Case Study (TRBAM-24-04195) - B679

Khaled Galal/Engineering & Research International, Inc., Mario Manosalvas-Paredes/Engineering & Research International, Inc., Syed Mubashirhussain/Engineering & Research International, Inc., Zaid Alyami/Engineering & Research International, Inc., Waleed Aldurgham/Engineering & Research International, Inc.

Study of Key Factors in Pavement Distress Segmentation Using Deep Learning Techniques (TRBAM-24-04641) - B662

Haitao Gong/Texas State University, Xiaohua Luo/Texas State University, Jueqiang Tao/Texas State University, Feng Wang/Texas State University

Feature-Based Pavement Image Registration: Performance Evaluation and Model Comparison (TRBAM-24-04679) - B663

Zhongyu Yang/Georgia Institute of Technology, Mohsen Mohammadi/Georgia Institute of Technology, Haolin Wang/Georgia Institute of Technology, Yi-Chang Tsai/Georgia Institute of Technology

Deep Learning–Based Recognition of Paved Road Shoulder for the Namibia B2 Highway (TRBAM-24-04739) - B664

Jeffrey Bullard/University of Alabama, Tuscaloosa, Marco Knipfer/University of Alabama, Tuscaloosa, Erik Johnson/University of Alabama, Tuscaloosa, Abhay Lidbe/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

Achieving Quality Assurance in Receiving Automated Pavement Condition Data: Threshold Development and Error Pattern Analysis (TRBAM-24-04745) - B665

Jueqiang Tao/Texas State University, Xiaohua Luo/Texas State University, Feng Wang/Texas State University, Ajmain Faieq/Texas State University, Haitao Gong/Texas State University, Xin Qiu/Texas State University

Edge Computing–Enabled Road Condition Monitoring: System Development and Evaluation (TRBAM-24-04824) - B667

Abdulateef Daud/MU: University of Missouri, Mark Amo-Boateng/MU: University of Missouri, Neema Jakisa Owor/MU: University of Missouri, Armstrong Aboah/MU: University of Missouri, Yaw Adu-Gyamfi/MU: University of Missouri

Crack Segmentation by Severity in 3D Asphalt Pavement Images Using Deep Learning Models (TRBAM-24-04868) - B668

Francisco Contreras-Correa/Universidad Tecnica Federico Santa Maria, Alelí Osorio-Lird/Universidad Tecnica Federico Santa Maria, Héctor Allende-Cid/Universidad Tecnica Federico Santa Maria

Pavement Responses and Performance Evaluation from an Instrumented Pavement Section (TRBAM-24-04899) - B669

Zafrul Khan/University of New Mexico, Rafi Tarefder/University of New Mexico, Saiqa Susmita/University of New Mexico

Full-Section Detection of Pavement Rutting via Area Array Structured Light (TRBAM-24-04927) - B650

Yuchuan Du/Tongji University, Ziyue Gao/Tongji University, Yishun Li/Tongji University, Chenglong Liu/Tongji University, Difei Wu/Tongji University

In Situ Dynamic Modulus Determination Using Transfer Learning Based on Sensing Data and Finite Element Method Simulation (TRBAM-24-05070) - B651

CHENG ZHANG/Pennsylvania State University, University Park, Shihui Shen/Pennsylvania State University, University Park, Hai Huang/Pennsylvania State University, University Park, Shuai Yu/Pennsylvania State University, University Park

Active Mode Traffic Road Cracks Detection and Analysis System (TRBAM-24-05669) - B652

Sicong Zhu/Beijing Jiaotong University, Li Yong/Beijing Jiaotong University, Jiayao Li/Beijing Jiaotong University, Cheng Zhang/Beijing Jiaotong University

Ensemble Machine Learning Classification Models for Predicting Pavement Condition (TRBAM-24-06148) - B653

Frederick Chung/Georgia Institute of Technology, Andy Doyle/Georgia Institute of Technology, Ernay Robinson/Georgia Institute of Technology, Yejee Paik/Georgia Institute of Technology, Mingshu Li/Georgia Institute of Technology, Minsoo Baek/Georgia Institute of Technology, Brian Moore/Georgia Institute of Technology, Baabak Ashuri/Georgia Institute of Technology

Deformable Registration on Pavement Images for Topological Crack Propagation Analysis (TRBAM-24-06229) - B654

Haolin Wang/Georgia Institute of Technology, Zhongyu Yang/Georgia Institute of Technology, Mohsen Mohammadi/Georgia Institute of Technology, Yi-Chang Tsai/Georgia Institute of Technology

TransUNet: A Hybrid Model for Block Pavement Segmentation and Distress Detection (TRBAM-24-06430) - B655

Eskindir Getachew Denu/Chung-Ang University, Yoon-Ho Cho/Chung-Ang University

The Two-Step Method of Pavement Pothole and Raveling Detection and Segmentation Based on Deep Learning (TRBAM-24-02687) - B656

Aidi Wang/Tongji University, Zhen Chen/Tongji University, Hong Lang/Tongji University, Yichuan Peng/Tongji University, Jian Lu/Tongji University

Combining 3D Scanning and 3D Printing Technologies for Pavement Management Practices: Preliminary Results (TRBAM-24-04118) - B690

Mehdi Haghghatjoo/Syracuse University, Parisa Sanaei/Syracuse University, Baris Salman/Syracuse University, Erick Lojano-Quispe/Syracuse University



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Pavement Structural Testing and Evaluation: Falling Weight Deflectometer, Traffic Speed Deflection Device, Accelerated Pavement Testing, and More

Erdem Coleri, Oregon State University, presiding

Alvaro Ulloa, Applied Research Associates, Inc., presiding

Angeli Jayme, University of Illinois, Urbana-Champaign, presiding

Issam Khoury, Ohio University, presiding

Daba Gedafa, University of North Dakota, presiding

Sponsored By Standing Committee on Pavement Structural Testing and Evaluation

Intelligent Assessment of Pavement Structural Conditions: A Novel FeMViT Classification Network for Ground-Penetrating Radar Images (TRBAM-24-00005) - B658

Zhen Liu/Southeast University, Xingyu Gu/Southeast University, Danyu Wang/Southeast University, Lutai

Wang/Southeast University, Bingyan Cui/Southeast University

Temperature Normalization of Traffic Speed Deflectometer Measurements (TRBAM-24-00432) - B659

Dirk Jansen/Federal Highway Research Institute, Mehdi Kalantari/Federal Highway Research Institute

A Comprehensive Model Optimization for YOLOv5-Based Recognition of Pavement Structural Damage in Radar Images (TRBAM-24-00568) - B640

Xiaogang Guo/Middle Tennessee State University, Ning Wang/Middle Tennessee State University, Yan Li/Middle

Tennessee State University, Ruixin Zhai/Middle Tennessee State University, Bowei Sun/Middle Tennessee State

University

Improved Moduli Backcalculation of the Upper Layers in Asphalt Pavements (TRBAM-24-00637) - B641

Eyal Levenberg/Technical University of Denmark, Albert Navarro/Technical University of Denmark, Umberto

Pinori/Technical University of Denmark

Field and Laboratory Investigation on Superpave 9.5 mm (SP-9.5) Mixtures in Florida (TRBAM-24-00665) - B642

Frank Ni/University of Florida, Ohhoon Kwon/University of Florida, Gregory Sholar/University of Florida, Charles

Holzschuher/University of Florida

Intelligent Reconstruction of Road Structural Defects: A Method Combining Ground-Penetrating Radar and Back Projection Algorithm (TRBAM-24-00939) - B643

Lutai Wang/Southeast University, Zhen Liu/Southeast University, Xingyu Gu/Southeast University, Danyu

Wang/Southeast University

Analysis of 3D Reconstruction of Road Structural Defects Combining Ground-Penetrating Radar and Reverse Time Migration Imaging (TRBAM-24-00941) - B644

Lutai Wang/Southeast University, Zhen Liu/Southeast University, Xingyu Gu/Southeast University, Danyu

Wang/Southeast University

Comparison of Lab Versus Backcalculated Layer Moduli of Virgin Aggregate and Recycled Aggregate Base (TRBAM-24-01100) - B645

Syed Waqar Haider/Michigan State University, Qasim Zulfikar/Michigan State University, Bora Cetin/Michigan State

University, Haluk Sinan Coban/Michigan State University, Seyed Farhad Abdollahi/Michigan State University

The Impact of Road Roughness on Tire-Pavement Contact Stresses During Vehicle Maneuvering (TRBAM-24-01113) - B646

JOHANN CARDENAS HUAMAN/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois,

Urbana-Champaign

Prediction of Modified Structural Number for Asphalt Pavements Using Machine Learning Algorithms (TRBAM-24-01685) - B647

Aakash Gupta/Central Road Research Institute CSIR, Sachin Gowda M K/Central Road Research Institute CSIR,

Sampath Pasupunuri/Central Road Research Institute CSIR

A Novel Pavement Layer Modulus Back-Calculation Method Considering Centralized Extended Kalman Filter-Based Information Fusion (TRBAM-24-01818) - B648

Yebo Cen/Tongji University, Jiading, Mu Guo/Tongji University, Jiading, Xiang Li/Tongji University, Jiading, HongDuo

Zhao/Tongji University, Jiading, Chen Jin/Tongji University, Jiading

Conversions of Viscoelastic Deflections of Asphalt Pavement Under the Traffic Speed Deflectometer Load to Elastic Ones Under the Falling Weight Deflectometer Load for Pavement Condition Assessments (TRBAM-24-02010) - B649

Zhang Chen/Tongji University, Xiaoying Tong/Tongji University, Huailei Cheng/Tongji University, Yuanlu Liang/Tongji University, Di Zhao/Tongji University, Lulu Yang/Tongji University, Tianxu Li/Tongji University, Zihan Wang/Tongji University

Extracting Features of Falling Weight Deflectometer Time History Data to Estimate Temperature Adjustment Factors for Pavement Deflections (TRBAM-24-02325) - B630

Nima Kargah-Ostadi/Callentis Consulting Group, Kostiantyn Vasylevskyi/Callentis Consulting Group, Andrei Ablets/Callentis Consulting Group, Andrew Drach/Callentis Consulting Group

Optimized Asphalt Overlay Configuration to Control Reflective Cracking Using a New Innovative Full-Scale Testing (TRBAM-24-02364) - B631

Zehui Zhu/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign, Aravind Ramakrishnan/University of Illinois, Urbana-Champaign, Ramadan Salim/University of Illinois, Urbana-Champaign, Hasan Ozer/University of Illinois, Urbana-Champaign, John Senger/University of Illinois, Urbana-Champaign, Laura Heckel/University of Illinois, Urbana-Champaign

Using Thermocouple Data at MnROAD as a Surrogate for Performance of Flexible Pavement (TRBAM-24-02511) - B632

Joseph Podolsky/Minnesota Department of Transportation, Raul Velasquez/Minnesota Department of Transportation, Emil Bautista/Minnesota Department of Transportation

A Temporal Homogenization Modeling of Viscoelastic Asphalt Materials and Pavement Structures Under Large Numbers of Cyclic Loading (TRBAM-24-02642) - B633

Hanyu Zhang/University of Nottingham, Gordon Airey/University of Nottingham, Yuqing Zhang/University of Nottingham

Parameter Correction of Traffic Velocity Deflectometer Considering Vehicle Pavement Environment Factors Using Multi-Condition Simulation and Machine Learning (TRBAM-24-02991) - B634

Xiang Wang/Southeast University, Qiao Dong/Southeast University, Xueqin Chen/Southeast University, Genyu Li/Southeast University, Xintong Li/Southeast University

Impact of Wide-Base Tire on Flexible Pavement Responses: Coupling Effects of Multi-Axle and Dynamic Loading (TRBAM-24-03171) - B635

Kairen Shen/Rutgers University, Hao Wang/Rutgers University

Prediction of Critical Strains from Traffic Speed Deflectometer Measurement on Flexible Pavement (TRBAM-24-03181) - B636

Kairen Shen/Rutgers University, Hao Wang/Rutgers University

Performance Prediction for Network-Level Flexible Pavements Using an Optimized Artificial Neural Network Approach (TRBAM-24-03311) - B637

Zengyi Wang/Tongji University, Jianming Ling/Tongji University, Jiake Zhang/Tongji University, Xiang Li/Tongji University

Evaluation of Multiple Light Weight Deflectometer Configurations for Thin Asphalt Pavement Testing (TRBAM-24-04302) - B638

Margarita Ordaz/U.S. Army Corps of Engineers (USACE), Jesse Doyle/U.S. Army Corps of Engineers (USACE)

Construction of Remote Data-Acquisition System for Jointed Plain Concrete Pavement and Performance Monitoring (TRBAM-24-04570) - B639

Yongsung Koh/Iowa State University, Halil Ceylan/Iowa State University, Sunghwan Kim/Iowa State University, In Ho Cho/Iowa State University

Investigation of Doppler Laser Technology for Measuring Deflection Velocity During Accelerated Pavement Testing: Initial Approach for Data Modeling (TRBAM-24-04621) - B620

Ernesto Urbaz/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute, Samer Katicha/Virginia Polytechnic Institute, Brian Diefenderfer/Virginia Polytechnic Institute, Reza Jafari/Virginia Polytechnic Institute

Rigid Layer Depth Setting Method Based on the Uniformity of the Backcalculated Subgrade Modulus (TRBAM-24-04638) - B621

Yue Hu/Tongji University, Guoshuai Zang/Tongji University, Lijun Sun/Tongji University

Economical and Durable Porous Encapsulation for Capacitance Type Relative Humidity and Temperature Sensors: Enhanced Monitoring of Concrete in Harsh Environmental Conditions (TRBAM-24-04758) - B622

Souvik Roy/University of California, Berkeley, Angel Mateos/University of California, Berkeley, Julio Paniagua/University of California, Berkeley, Somayeh Nassiri/University of California, Berkeley

Mechanistic Pavement Modeling of Typical Brazilian Pavements: Cohesive Zone Damage Modeling and Continuum Damage Modeling (TRBAM-24-04883) - B623

Santosh Reddy Kommidi/Texas A&M University, College Station, Marcos Rocha/Texas A&M University, College Station, Yong-Rak Kim/Texas A&M University, College Station, Thiago Aragão/Texas A&M University, College Station, Luis Alberto Nascimento/Texas A&M University, College Station

(continued)

Analyzing the Mechanical Response of a Calibrated Finite Element Model for Flexible Pavement with Embedded Dynamic Wireless Power Transfer Technology (TRBAM-24-06037) - B624

Hector Cruz/University of Texas, El Paso, Oscar Moncada/University of Texas, El Paso, Behnam Jahangiri/University of Texas, El Paso, Cesar Tirado/University of Texas, El Paso, Soheil Nazarian/University of Texas, El Paso, John Haddock/University of Texas, El Paso

Traffic Speed Deflectometer Data Interpretation Using the Falling Weight Deflectometer–Based Structural Indicators to Assess Full-Depth Asphalt Pavements (TRBAM-24-00526) - B625

Bongsuk Park/Montana Technological University, Seonghwan Cho/Montana Technological University, Tommy Nantung/Montana Technological University, John Haddock/Montana Technological University

Effect of Temperature and Curing Time on the Structural Capacity of Cold-Recycled Pavements (TRBAM-24-03644) - B626

Andrea Graziani/Università Politecnica delle Marche, Andrea Grilli/Università Politecnica delle Marche, Chiara Mignini/Università Politecnica delle Marche

Effects of Temperature Variations on Falling Weight Deflectometer Deflection Data from Full-Depth Asphalt Pavements (TRBAM-24-02428) - B627

Pablo Orosa Iglesias/Purdue University, Bongsuk Park/Purdue University, Seonghwan Cho/Purdue University, John Haddock/Purdue University

2048



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Innovations in Friction and Texture Measurements and Analysis for Pavements

David Merritt, Transtec Group, Inc., presiding

Ahmad A Alhasan, Applied Research Associates, Inc., presiding

Sponsored By Standing Committee on Pavement Surface Properties and Vehicle Interaction

Frictional Characteristics of Recycled Stone Matrix Asphalt Mixtures (TRBAM-24-05474) - B657

Ahmed El-Ashwah/Missouri University of Science and Technology, Magdy Abdelrahman/Missouri University of Science and Technology

Using the Estimated Available Friction at the Posted Speed as a Pavement Safety Performance Measure on Freeways (TRBAM-24-04762) - B628

Behrokh Bazmara/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute, Edgar de León Izeppi/Virginia Polytechnic Institute, Samer Katicha/Virginia Polytechnic Institute

The Use of Vehicle Telematics Data to Estimate Road Friction: A United Kingdom Technology Trial (TRBAM-24-01924) - B629

Federico Perrotta/AECOM, David Woodward/AECOM, Tony Parry/AECOM, Ramesh Perera/AECOM, Gordon Airey/AECOM

Pavement Friction Estimation Using Convolutional Neural Network and Surface Texture Parameters (TRBAM-24-06383) - B610

Pingzhou (Lucas) Yu/Georgia Institute of Technology, Ryan Salameh/Georgia Institute of Technology, Pavan Chandrasekar/Georgia Institute of Technology, Yi-Chang Tsai/Georgia Institute of Technology

Calculation of the Coefficient of Friction from California Portable Skid Tester (TRBAM-24-02082) - B611

Phillip Donovan/Applied Research Associates, Inc., Hyung Suk Lee/Applied Research Associates, Inc.

Research on Real Texture Simulation Based on Discrete Element Simulation Method for Wearing Layer (TRBAM-24-02027) - B612

Xiyin Liu/Southeast University School of Transportation, Can Chen/Southeast University School of Transportation, Tao Ma/Southeast University School of Transportation, Siyu Chen/Southeast University School of Transportation, Xiaodong Zhou/Southeast University School of Transportation

The Influence of Aggregate Properties and Mineralogy on Friction Results from the 2000 National Center for Asphalt Technology Test Track (TRBAM-24-04553) - B613

Nathan Moore/National Center for Asphalt Technology (NCAT), Brian Prowell/National Center for Asphalt Technology (NCAT)

Development of a Relationship Between Pavement Surface Texture and Volumetric Design Properties (TRBAM-24-03021) - B614

Amir Cawich/National Cheng Kung University, Shih-Hsien Yang/National Cheng Kung University

(continued)

Digital Sand Patch: Using Discrete Element Simulation and Laser Scanning for More Accurate Pavement Texture Depth Measurements (TRBAM-24-03650) - B615

Lunpeng Li/Tongji University, Yishun Li/Tongji University, Chenglong Liu/Tongji University, Difei Wu/Tongji University, Yuchuan Du/Tongji University

Predicting Pavement Skid Resistance Using Texture Indices Considering Directional Characteristics of Pavement Texture and Skid Resistance (TRBAM-24-00303) - B616

Weiwei Guo/Chang'an University, Longjia Chu/Chang'an University, T. F. Fwa/Chang'an University

An Investigation of Factors Affecting the Skid Resistance and Mechanical Strength of Prefabricated Concrete Pavement Textures Assisted with 3D Printing Technology (TRBAM-24-05978) - B617

Wei Sheng/Hong Kong Polytechnic University, Xingyu Chen/Hong Kong Polytechnic University, Ruiming Li/Hong Kong Polytechnic University, Xiaoxu Zhu/Hong Kong Polytechnic University, Yuhong Wang/Hong Kong Polytechnic University

Comparative Analysis of Smooth and Ribbed Locked Wheel Test Data in Ohio (TRBAM-24-06262) - B618

Mustafa Mansour/University of Akron, Ala Abbas/University of Akron

Reliability Analysis of the Performance Margin (TRBAM-24-00043) - B619

Troy Kim/Virginia Polytechnic Institute, John Ferris/Virginia Polytechnic Institute

2049



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Samples of Maintenance Issues: Concrete Surface Defect Detection, Comparing Deflectometers, Leveraging Alternative Fuel Fleets, and University Fleet Operations

Rob Zilay, Dye Management Group, Inc., presiding

Sponsored By Standing Committee on Maintenance and Operations Management, Standing Committee on Environmental Analysis and Ecology, Standing Committee on Landscape and Environmental Design, Subcommittee on Pollinators

Research on - Concrete Surface Defect Detection, - Comparing Deflectometers, - Leveraging Alternative Fuel Fleets, and - University Fleet Operations

Consistency Between Traffic Speed Deflection Devices and Falling Weight Deflectometer (TRBAM-24-02336) - B691

Arman Hamidi/Norwegian University of Science and Technology (NTNU), Ali Foroutan Mirhosseini/Norwegian University of Science and Technology (NTNU), Inge Hoff/Norwegian University of Science and Technology (NTNU), Helge Mork/Norwegian University of Science and Technology (NTNU), Kim Rune Grannes/Norwegian University of Science and Technology (NTNU), Per Aursand/Norwegian University of Science and Technology (NTNU)

Concrete Surface Defect Detection and Classification from Uncrewed Aerial Vehicle Imagery Using Ensemble Learning (TRBAM-24-02917) - B692

Emmanuel Marfo/North Carolina A&T State University, Tesfamichael Getahun/North Carolina A&T State University, Ali Karimodini/North Carolina A&T State University

Leveraging Alternative Fuel Vehicles in Operation and Asset Management Strategies to Reduce Fleet Economic and Societal Impacts (TRBAM-24-05069) - B693

Hamid Mozafari/Michigan State University, Amirali Soltanpour/Michigan State University, Farish Jazlan/Michigan State University, Mehrnaz Ghamami/Michigan State University, Ali Zockaie/Michigan State University

Environmental Considerations in University Fleet Operations and Management Strategies Amid the COVID-19 Pandemic (TRBAM-24-05481) - B694

Hamid Mozafari/Michigan State University, Amirali Soltanpour/Michigan State University, Farish Jazlan/Michigan State University, Mehrnaz Ghamami/Michigan State University, Ali Zockaie/Michigan State University

2050



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Pollinator Communities on the Roadside and Using Soil Bacteria to Control Invasive Grasses of the Idaho Department of Transportation

Cathy Ford, Idaho Transportation Department, presiding

Sponsored By Standing Committee on Roadside Maintenance Operations, Standing Committee on Environmental Analysis and Ecology, Standing Committee on Landscape and Environmental Design, Standing Committee on Roadside Maintenance Operations, Subcommittee on Pollinators

Title: "Integration of weed-suppressive bacteria with herbicides to reduce exotic annual grasses and wildfires on Roadsides" Using weed-suppressive bacteria with herbicides to control exotic annual grasses in order to reduce fuel for wildfires along the roadside. Title: "Pollinator Communities in Roadside Habitats: Identifying Patterns, Protecting Monarchs, and Informing Management" Identify qualities of a good pollinator habitat, determine how road class (highway type) and NDVI relate to pollinator abundance and diversity, determine roadside hotspots for bee and butterfly diversity, BMPs to benefit pollinators, identify conditions that support milkweed and conditions that support threatened monarch populations.

Pollinator Communities on the Roadside and Using Soil Bacteria to Control Invasive Grasses in the Idaho Department of Transportation (P24-20930) - B695

Cathy Ford/Idaho Transportation Department

2051



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Emergency Responder Safety, Travel Demand, and Routing

Scott Parr, Embry Riddle Aeronautical University, presiding

Sponsored By Section - Transportation Systems Resilience, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Transportation Safety Management Systems, Standing Committee on Traffic Law Enforcement, Section - Transportation Systems Resilience

This session will feature cutting-edge research and insights into the intricate world of emergency responder transportation, safety measures, and strategic planning. Interact with leading experts, researchers, and practitioners in the field of emergency responder transportation and safety. Explore the posters, engage in meaningful discussions, and take away actionable insights to support the safety and efficiency of emergency responders in your community.

Analysis of Crashes Involving First Responder Vehicles (P24-20398) - B501

Josie Gray/HNTB Corporation, Scott Parr/Embry Riddle Aeronautical University, Sean Parr/Miami-Dade Fire Rescue Department

Preparing First Responders for Future Electrical Vehicle Emergencies Through Multimodality Virtual Reality Training Systems (TRBAM-24-02245) - B503

Yangming Shi/Colorado School of Mines, Ziming Liu/Colorado School of Mines, Jun Liu/Colorado School of Mines

Incorporating Uncrewed Aircraft Systems into State Traffic Incident Management Programs (TRBAM-24-02737) - B500

Brian Porter/Florida Department of Transportation, Joseph Post/Florida Department of Transportation, Achilleas Kourtellis/Florida Department of Transportation, Yu Zhang/Florida Department of Transportation

Injury Severity of Police Officers Involved in Traffic Crashes: A Spatial Analysis of Alabama (TRBAM-24-02905) - B502

Ningzhe Xu/University of Alabama, Jun Liu/University of Alabama, Zihe Zhang/University of Alabama, Steven Jones/University of Alabama

Travel Demand Modeling for Medical Emergency Trips in the Context of a Developing Mega City (TRBAM-24-02984) - B504

Atkia Ibnat/Islamic University of Technology, Sakib Fahim/Islamic University of Technology, Nafisa Binte Farid Prova/Islamic University of Technology, Md. Wahid Hasan/Islamic University of Technology, Moinul Hossain/Islamic University of Technology, Md Asif Raihan/Islamic University of Technology, Mohammed Quddus/Islamic University of Technology

(continued)

A Systematic Review of Routing and Priority Control for Emergency Vehicle (TRBAM-24-03696) - B510

Zhengbo Hao/Tongji University, Yang Xia/Tongji University, Xiaoguang Yang/Tongji University, Yizhe Wang/Tongji University, Chenyang Wang/Tongji University

Struck-by Fatalities of Motor Vehicle Towing and Roadside Assistance Providers: Identification of Cases and Descriptive Analysis of Crash Characteristics in the United States, 2015–2021 (TRBAM-24-00854) - B511

Anqi Wei/AAA Foundation for Traffic Safety, Rebecca Steinbach/AAA Foundation for Traffic Safety, Brian Tefft/AAA Foundation for Traffic Safety

Emergency Resource Layout with Multiple Objectives Under Complex Disaster Scenarios (TRBAM-24-02897) - B512

changwei yuan/University of Central Florida, Shengxuan Ding/University of Central Florida, yin wang/University of Central Florida, jian feng/University of Central Florida, Ningyuan Ma/University of Central Florida, Renteng Yuan/University of Central Florida, chenhao zhang/University of Central Florida

Factors Affecting Secondary Crashes on Freeways: A Case Study of National Freeways No. 1 and No. 3 in Taiwan (TRBAM-24-03928) - B513

Ken-Ruei Liu/National Yang Ming Chiao Tung University, Shou-Ren Hu/National Yang Ming Chiao Tung University

Endogeneity of Pedestrian Survival Time and Emergency Medical Service Response Time: Variations Across Disadvantaged and Non-Disadvantaged Communities (TRBAM-24-04207) - B514

A. Latif Patwary/University of Tennessee, Asad Khattak/University of Tennessee

The Impact of Communication Advances on Emergency Notification and Response Times for Fatal Rural and Urban Motor Vehicle Collisions (TRBAM-24-04718) - B520

Nicholas Ferenchak/University of New Mexico

Exploring Special Case Investigation Reports Associated with Ambulances (TRBAM-24-05696) - B521

Subasish Das/Texas State University, Valerie Vierkant/Texas State University

Location and Priority Optimization of First Responders Under Hypercube Queuing Equilibriums (TRBAM-24-05943) - B522

Cheng Liu/China Coal Technology and Engineering Group, Qingjie Qi/China Coal Technology and Engineering Group, Han Liu/China Coal Technology and Engineering Group, Yu Gu/China Coal Technology and Engineering Group, Shibo Wei/China Coal Technology and Engineering Group, Chao Lei/China Coal Technology and Engineering Group

Emergency Response Resource Allocation and Reassignment Considering Vehicle Types (TRBAM-24-02692) - B523

Changle Song/The University of Sydney, David Levinson/The University of Sydney, Emily Moylan/The University of Sydney

A Location Allocation Model for the Optimization of Emergency Medical Services in Dehradun (TRBAM-24-06204) - B524

Manish Kumar Yadav/IITR: Indian Institute of Technology Roorkee, Indrajit Ghosh/IITR: Indian Institute of Technology Roorkee, Mohammad Sadrani/IITR: Indian Institute of Technology Roorkee, Constantinos Antoniou/IITR: Indian Institute of Technology Roorkee

2052



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advances in Critical Transportation Infrastructure Resilience

Sybil Derrible, University of Illinois, Chicago, presiding

Arif Mohaimin Sadri, University of Oklahoma, presiding

Angelo Furno, Universite Gustave Eiffel, presiding

Sponsored By Standing Committee on Critical Transportation Infrastructure Protection

This poster session showcases recent advances in critical transportation infrastructure protection and transportation resilience more generally. The posters cover a variety of topics pertaining to transportation resilience, from infrastructure interdependency modeling and multi-modal transportation resilience and sustainability to public transportation planning, and the analysis of depopulation on transportation infrastructure.

Modeling Interdependent Infrastructure System Vulnerability with Imprecise Information Using Two Fuzzy Inference Systems (TRBAM-24-05970) - B583

Shidong Pan/University of Texas, Austin, Kyle Bathgate/University of Texas, Austin, Zhe Han/University of Texas, Austin, Jingran Sun/University of Texas, Austin, Zhanmin Zhang/University of Texas, Austin

Construction and Node Value Evaluation of Road-Rail-Air Multimodal Travel Network: From a Hyper-Network Perspective (TRBAM-24-04729) - B530

Mengmeng Yin/Nanjing University of Science and Technology, Kun Tang/Nanjing University of Science and Technology, Tian Xu/Nanjing University of Science and Technology, Tangyi Guo/Nanjing University of Science and Technology

Transfer Learning for Transportation System Resilience Patterns Prediction Using Floating Car Data (TRBAM-24-02379) - B534

Ningkang Yang/Technical University of Munich, Qing-Long Lu/Technical University of Munich, Cheng Lyu/Technical University of Munich, Constantinos Antoniou/Technical University of Munich

Optimizing the Location and Configuration of Disaster Resilience Hubs Under Transportation and Electric Power Network Failures (TRBAM-24-02629) - B550

Daniel Rodriguez-Roman/Universidad de Puerto Rico, Mayaguez, Hector Carlo/Universidad de Puerto Rico, Mayaguez, Joshua Sperling/Universidad de Puerto Rico, Mayaguez, Andrew Duvall/Universidad de Puerto Rico, Mayaguez, Ruben Leoncio Caban/Universidad de Puerto Rico, Mayaguez, Carla López del Puerto/Universidad de Puerto Rico, Mayaguez

Adaptation in Transportation Planning: Why Is the Traditional Resilience Approach Failing in the Face of Emerging Challenges? (TRBAM-24-05531) - B551

Mazin AbdelMagid/FAMU-FSU College of Engineering: Florida A&M University-Florida State University College of Engineering, Yassir AbdelRazig/FAMU-FSU College of Engineering: Florida A&M University-Florida State University College of Engineering

Leveraging Electric Vehicles as a Resiliency Solution for Backup Power During Outages (TRBAM-24-00265) - B540

Shanshan Liu/University of Illinois, Urbana-Champaign, Alex Vlachokostas/University of Illinois, Urbana-Champaign, Eleftheria Kontou/University of Illinois, Urbana-Champaign

Vulnerability Assessment of Electric Vehicles and Charging Station Network During Evacuations (TRBAM-24-00369) - B541

Denissa Purba/University of Illinois, Urbana-Champaign, Eleftheria Kontou/University of Illinois, Urbana-Champaign

Assessing Road Network Resilience in the Era of Connected and Autonomous Vehicles: Belgium Road Network (TRBAM-24-00820) - B552

Behzad Bamdad Mehrabani/Transport and Mobility Leuven, Luca Sgambi/Transport and Mobility Leuven, Adam Pel/Transport and Mobility Leuven, Simeon Calvert/Transport and Mobility Leuven, Maaïke Snelder/Transport and Mobility Leuven

Leveraging Food Delivery Programs as a Community Resilience Resource: A Demand-Driven Spatial and Temporal Analysis of Need (TRBAM-24-00906) - B553

Gretchen Bella/Northwestern University, Elisa Borowski/Northwestern University, Amanda Stathopoulos/Northwestern University

Efficient Machine Learning Model for Settlement Prediction of Large Diameter Helical Pile in $c - \phi$ Soil (TRBAM-24-01072) - B544

Nur Mohammad Shuman/Jackson State University, Mohammad Sadik Khan/Jackson State University, Farshad Amini/Jackson State University

A Systematic Vulnerability Analysis of Urban Metro Networks: Comparing the Impact of Random and Targeted Disruptions (TRBAM-24-01354) - B560

Kaveh Rezvani Dehaghani/Polytechnique Montreal Departement des Genies Civil Geologique et des Mines, Catherine Morency/Polytechnique Montreal Departement des Genies Civil Geologique et des Mines

On the Dynamic Demand-Influenced Vulnerability of Urban Rail Transit Systems (TRBAM-24-02548) - B584

Shouzheng Pan/University of Utah, Ning Jia/University of Utah, Der-Horng Lee/University of Utah, Zhengbing He/University of Utah

Assessing the Resilience of Urban Traffic Networks Under Extreme Rainfall and Flood Events: A Perspective on Dynamic Accessibility and the Percolation Theory (TRBAM-24-01695) - B542

Xinyi Fang/Shanghai Jiao Tong University, Linjun Lu/Shanghai Jiao Tong University, Yilin Hong/Shanghai Jiao Tong University, Ziwen Wang/Shanghai Jiao Tong University

Vulnerability Analysis Under Multiple Area-Covering Disruptions in Transportation Networks (TRBAM-24-01635) - B563

Junze Yang/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Xiangdong XU/Key Laboratory of Road and Traffic Engineering of the Ministry of Education

Exploring Spatial Patterns of Sustainability and Resilience of Metropolitan Areas in the United States Using Self-Organizing Maps (TRBAM-24-03010) - B562

Haiqing Liu/Sun Yat-Sen University, Na Chen/Sun Yat-Sen University, Xinhao Wang/Sun Yat-Sen University

(continued)

Modeling of Multi-Hazard Warning Dissemination Time Distributions: An Agent-Based Approach

(TRBAM-24-03834) - B564

Mohammad Rayeedul Kalam Siam/Oregon State University, Michael Lindell/Oregon State University, Haizhong Wang/Oregon State University

An Innovative Avalanche Monitoring System for Roadways in Avalanche-Threatened Areas (TRBAM-24-03930) - B570

Yifan Ling/University of Washington, Yifan Zhuang/University of Washington, Yin Hai Wang/University of Washington

Application of Clustering Algorithms for Dimensionality Reduction in Infrastructure Resilience Prediction Models (TRBAM-24-03940) - B572

Srijith Balakrishnan/University of Texas, Austin, Arun Verma/University of Texas, Austin, Beatrice Cassottana/University of Texas, Austin

A Framework for Identifying Critical Roads in Urban Road Traffic Networks Based on Resilience Perspective (TRBAM-24-03458) - B543

Yiding Lu/Shanghai Jiao Tong University, Linjun Lu/Shanghai Jiao Tong University, Xinyi Fang/Shanghai Jiao Tong University

Resilience Assessment of Interdependent Metro-Bus Transit Networks Based on Bi-Directional Function Dependency (TRBAM-24-03462) - B573

Peng-Cheng Xu/Chang'an University, Qing-Chang Lu/Chang'an University, Xin Xu/Chang'an University, Jing Li/Chang'an University, Zixuan Hu/Chang'an University

Quantifying the Impact of Precipitation on Interstate and Principal Arterial Capacity to Support Resilience Planning and Operations (TRBAM-24-05000) - B532

Fernando Cordero/Auburn University, Jeffrey LaMondia/Auburn University

Hypergraph-Based Node Value Evaluation for High-Speed Railway Network Using Operation Data (TRBAM-24-04710) - B531

Tian Xu/NanJing University of Science and Technology, Kun Tang/NanJing University of Science and Technology, Mengmeng Yin/NanJing University of Science and Technology, Tangyi Guo/NanJing University of Science and Technology

Vulnerability Assessments Incorporating Accessibility Considerations to Enhance Transportation System Resilience and Equity (TRBAM-24-04827) - B533

Adair Garrett/Georgia Institute of Technology, Praful Patil/Georgia Institute of Technology, Maya Orthous Inchauste/Georgia Institute of Technology, Adjo Amekudzi-Kennedy/Georgia Institute of Technology

Recovery Strategies for Urban Multimodal Transportation Networks Considering Structural Resilience (TRBAM-24-05571) - B574

Jie Li/Hunan University, Siyu Chen/Hunan University, Mengjia Zhang/Hunan University

Adapting to the Unprecedented. Analyzing The Resilience Capacity Of Two Major Automotive Clusters Against Covid-19 (TRBAM-24-06519) - B592

Maria Triantafyllou/University of Warwick

Risk Assessment of Urban Transportation Complex Hub from Resilience Perspective: An Empirical Study on Xi'an North Railway Station (TRBAM-24-06065) - B593

Gaole Wan/Chang'an University, Daniel(Jian) Sun/Chang'an University, Binbin Peng/Chang'an University, Xinhua Mao/Chang'an University

Measuring Resilience in Multimodal Transportation Systems (TRBAM-24-00884) - B594

Smith Khumpraphan/Rutgers University, New Brunswick, Balaji Rao/Rutgers University, New Brunswick, Raif Bucar/Rutgers University, New Brunswick, Yeganeh Hayeri/Rutgers University, New Brunswick

Analysis of the Probability of Failure of Corroded Buried Water Pipes Under the Influence of Fault Behavior During Earthquakes (TRBAM-24-01328) - B600

Alireza Mohsen/Rowan University, Seyed Hooman Ghasemi/Rowan University

Bayesian Network-Based Resilience Assessment of Interdependent Infrastructure Systems Under Optimal Resource Allocation Strategies (TRBAM-24-01467) - B582

Jingran Sun/Center for Transportation Research, Kyle Bathgate/Center for Transportation Research, Zhanmin Zhang/Center for Transportation Research

Who Pays for the Additional Maintenance Costs: Per Capita Roadway Length in Response to the Changing Demographics in U.S. Cities to 2050 (TRBAM-24-02339) - B601

Uttara Sutradhar/University of Illinois, Chicago, Miguel Benavides Lara/University of Illinois, Chicago, Sybil Derrible/University of Illinois, Chicago

A Data-Driven Resilience Framework of Directionality Configuration Based on Topological Credentials in Road Networks (TRBAM-24-04838) - B602

H M Imran Kays/University of Oklahoma, Khondhaker Al Momin/University of Oklahoma, K.K. "Muralee" Muraleetharan/University of Oklahoma, Arif Mohaimin Sadri/University of Oklahoma

(continued)

Toward a Just Transition: A Proposed Vulnerability, Criticality, and Community Resilience Framework for Fast Forwarding Roadway Infrastructure Resilience Planning (TRBAM-24-05560) - B603

Austin Jarrell/West Virginia University, Collin Yarbrough/West Virginia University, Lauren Gardner/West Virginia University, Muhammad Ishfaq/West Virginia University, Jim Pappas/West Virginia University, Stephanie Johnson/West Virginia University

Analyzing Resilience of Urban Rail Transit Network Under Operational Incidents (TRBAM-24-05293) - B554

Yuxiong Ji/Tongji University, Wenxuan Fan/Tongji University, Minhang Zhou/Tongji University, Yu Shen/Tongji University

2053



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advancements in Passenger Rail Operations and Planning

Laura McWethy, National Railroad Passenger Corporation, presiding

Sponsored By Standing Committee on Passenger Rail Transportation

Stochastic Scheduling of High-Speed Railway Meal Service for On-Time Delivery (TRBAM-24-00020) - A250

Lei Xu/Shenzhen University, Wenjie Huang/Shenzhen University, Yaping Zhao/Shenzhen University, Siqi Ma/Shenzhen University, Rongsen Jin/Shenzhen University

Effect of High-Speed Railway on Population Change in Japan: Causal Inference Using the Propensity Score

Matching and Difference-in-Difference Method (TRBAM-24-00593) - A251

Jingyuan Wang/Tokyo University of Science, Shintaro Terabe/Tokyo University of Science, Hideki Yaginuma/Tokyo University of Science, Haruka UNO/Tokyo University of Science, Yu Suzuki/Tokyo University of Science

Collaborative Optimization of the Train Operation Plan for High-Speed and Conventional Trains

(TRBAM-24-01691) - A252

Boliang Lin/Beijing Jiaotong University, Yufei Meng/Beijing Jiaotong University, Zhenyu Wang/Beijing Jiaotong University, Wenjian Zhong/Beijing Jiaotong University, Yaoming Shen/Beijing Jiaotong University

Optimization of High-Speed Train Circulation Plan Considering the Number of Train Sets (TRBAM-24-02372) -

A253

Yaoming Shen/Beijing Jiaotong University, Xuetao Jiang/Beijing Jiaotong University, Boliang Lin/Beijing Jiaotong University

Research on Risk Factors Affecting Delay of High-Speed Railway in China Based on Association Rules

(TRBAM-24-03444) - A262

Aidi Wang/Tongji University, Shiwen Zhang/Tongji University, Yingying Xing/Tongji University, Hong Lang/Tongji University, Jian Lu/Tongji University

Research on the Preparation and Adjustment of Train Line Planning Under the Condition of Multiple Formation

(TRBAM-24-03823) - A272

Chen Li/Beijing Jiaotong University, Qi Zhang/Beijing Jiaotong University, Yuguang Wei/Beijing Jiaotong University

Time-Varying Demand Distribution Estimation for High-Speed Rail Networks with Schedule-Based Assignment

(TRBAM-24-04046) - A263

Tangjian Wei/Western University, Richard Batley/Western University, Ronghui Liu/Western University, Guangming Xu/Western University, Yili Tang/Western University

Mode Choice and Value of Time on Long-Distance Vacation Trips (TRBAM-24-04448) - A273

Bartosz Bursa/University of Innsbruck

2055



Monday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Optimization of Freight Transportation and Logistics Systems

Prasanta Sahu, Birla Institute of Technology and Science, Pilani, presiding

Evangelos I. Kaisar, Florida Atlantic University, presiding

Sponsored By Standing Committee on Freight Transportation Planning and Logistics

This poster session brings in sixteen selected papers that focus on mathematical optimization of freight and logistics systems.

Mathematical Models for Selecting Optimal Dry Port Locations: A Case Study (TRBAM-24-02477) - A281
Morteza Bagheri/Iran University of Science and Technology, Hossein Abbasi/Iran University of Science and Technology, Saeed Yaghoubi/Iran University of Science and Technology, Mir Saman Pishvaei/Iran University of Science and Technology, Mehdi Fallahi/Iran University of Science and Technology

Impacts of a Railway Corridor on the Service Design of Intermodal Coal Transportation Networks and Industrial Location Utilities: A Land Use and Transportation Interaction Modeling Approach (TRBAM-24-03375) - A282
Zongbao Wang/Wuhan University of Technology, Ming Zhong/Wuhan University of Technology, Xiaofeng Pan/Wuhan University of Technology

Unpacking the Last Mile: A Geospatial Characterization (TRBAM-24-04267) - A283
Lasse Bienenzeisler/Technische Universität Braunschweig, Oskar Wage/Technische Universität Braunschweig, Bernhard Friedrich/Technische Universität Braunschweig

Optimizing Logistics Park Layouts Through Simulation and Adaptive Genetic Algorithms (TRBAM-24-01699) - A301
Cheng Cheng/Southeast University, Gengchen Zhu/Southeast University, Yuting Yan/Southeast University, Zengshuang Li/Southeast University, Chenjie Xiong/Southeast University

Freight-Transit Tour Synthesis Entropy-Based Formulation: Sharing Infrastructure for Buses and Trucks (TRBAM-24-05924) - A291
Diana Moreno-Palacio/Universidad de Antioquia, Carlos Gonzalez-Calderon/Universidad de Antioquia, Hector Lopez-Ospina/Universidad de Antioquia, Jhan Gil-Marin/Universidad de Antioquia, John Posada-Henao/Universidad de Antioquia

Optimizing No-Show Trucks' Re-Serving Schedule in a Truck Appointment System at Container Terminals: A Reinforcement Learning Approach (TRBAM-24-00517) - A302
Shichao Sun/Dalian Maritime University, Xin Shi/Dalian Maritime University, Depeng Zheng/Dalian Maritime University

Freight Facility Identification Using Satellite Imagery and Deep Learning Algorithms (TRBAM-24-01896) - A280
Haocheng Lin/Tongji University, Quan Yuan/Tongji University, Zhiwei Yang/Tongji University

A New Model and Branch-and-Cut Algorithm for the One-to-One Pickup and Delivery Problem with Transshipment (TRBAM-24-01484) - A300
Yongjin Xing/Southeast University, Jian Lu/Southeast University, Fang Zhang/Southeast University

Collaboration of Trucks and Drones for Delivery and Surveillance Missions After Disasters (TRBAM-24-01914) - A310
Wenbo Sun/University of Hong Kong, Fangni Zhang/University of Hong Kong

An Envy-Based Parcel Delivery Workload Balancing Problem with Heterogeneous Drivers' Preferences (TRBAM-24-06214) - A292
HanByul Ryu/Inha University, Riju Lavanya/Inha University, Daisik Nam/Inha University

A Literature Synthesis of Emerging Last-Mile Delivery Technologies and Their Applications to Rural Areas: Drones, Autonomous Delivery Vehicles, and Truck Drones (TRBAM-24-04379) - A312
Marcella Kaplan/University of Tennessee, Knoxville, Kevin Heaslip/University of Tennessee, Knoxville

Analyzing Equity in Truck-Drone Cooperative Delivery for Rural Areas (TRBAM-24-05112) - A313
Henan Zhu/Rensselaer Polytechnic Institute (RPI), Xiaozheng (Sean) He/Rensselaer Polytechnic Institute (RPI), Ziping Wang/Rensselaer Polytechnic Institute (RPI)

Dynamic Truck-Drone Delivery with Synchronization on Routes and Uncertain Requests Arrival Times (TRBAM-24-02977) - A311
Keyu Li/Shenzhen University, Xuxin Zhang/Shenzhen University, Haipeng Cui/Shenzhen University

Finding the Optimal Sharing Point in Shared Delivery Services Using Google OR-Tools (TRBAM-24-04470) - A290
Peyman Hashemi Baragoori/Ozyegin University, Bekir Bartin/Ozyegin University

Optimizing Space-time-state Network Flows with Capacity and Congestion Considerations in a Multi-Allocation Hub-and-Spoke Network (TRBAM-24-06286) - A293
Ming Wang/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Yixuan Bao/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

A GRASP-Based Algorithm for Near-Optimal Delivery of Autonomous Truck Fleet with Drones in Tandem (TRBAM-24-01081) - A303
Ta-Yin Hu/National Cheng Kung University, I-Hsuan Kuo/National Cheng Kung University, Tsai-Yun Liao/National Cheng Kung University

Monday, 09:00 a.m. - 04:00 p.m., Convention Center, Hall D&E

Exhibits

Sponsored By Technical Activities Council

Plan to visit the nearly 200 exhibits, including the TRB booth, showcasing the many transportation-related products and services. View the floor plan and interactively search for exhibiting organizations on the Mobile App. Between sessions, food concessions are available in the Exhibit Hall. Located in the exhibit hall, the Solutions Showcase theaters will feature presentations from exhibiting and patron organizations on the goods, services, and solutions they provide. Presentations begin every half hour during exhibit hours, and are 30 minutes in length. For a list of presentations, see the mobile app (available in early December) or the onsite printed program.

Monday, 09:30 a.m. - 04:00 p.m., Convention Center, Exhibit Hall D Theater

Solutions Showcase Theater

Sponsored By Technical Activities Council

The Solutions Showcase Theater is your opportunity to hear from exhibitors and patrons about the newest trends and products in the transportation industry. Participating companies will give 30-minute presentations on goods, services, and solutions their organizations provide. See below for the full schedule.

What to Do About the Electrification of North America's Commercial Fleet: Geotab (P24-21392)

JP Bastida/Geotab Inc, Matthew Konski/Geotab Inc

Super Fleet Operation Technology for a Demand-Responsive Transport Operating Platform: Studio Galilei Co., Ltd. (P24-21393)

Jinwoo Lee/Korea Advanced Institute of Science and Technology (KAIST)

Using Mobile and Cloud Technology for Guide Rail Assessment in Ontario: Builterra and Safe Roads Engineering (P24-21472)

Jeff Lyons/Builterra, Joseph Gowrie/Safe Roads Engineering

Transport General Authority: Kingdom of Saudi Arabia (P24-21473)

Extending Highway Safety Programs into the Commercial Truck Segment of Connected Vehicles: Drivewyze (P24-21496)

Celine LePage/Drivewyze, Inc.

American Concrete Institute Resource Centers: Training, Education, and Certification for the Concrete Construction Industry (P24-21497)

Michael Morrison/American Concrete Institute

2056

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 102B

"Best of" Research on Bicycling and Micromobility Safety

Calvin Thigpen, Lime, presiding

Sponsored By Standing Committee on Bicycle Transportation, Joint Subcommittee on Emerging Vehicles for Low Speed Transportation (with ACH10, ANB40, and AP020)

Join us to learn about the latest research on bicycling, e-bike, and e-scooter safety.

Safety Insights from E-Scooter Rider and Bicyclist Behavior Observations in Two U.S. Cities (TRBAM-24-05584)

Ashkan Neshagaran/University of Tennessee, Knoxville, Christopher Cherry/University of Tennessee, Knoxville, Rebecca Sanders/University of Tennessee, Knoxville

The Shifting Demographics of Unreported Struck Cyclists During the First COVID-19 Year (TRBAM-24-04413)

Mickey Edwards/University of Cincinnati

(continued)

Tram Bike Crash Risks: A Cyclist Market Survey (TRBAM-24-02774)

James Reynolds/Monash University, Ramisa Bhuiyan/Monash University, Graham Currie/Monash University, Marilyn Johnson/Monash University

Interactive Effects Analysis of Road, Traffic, and Weather Characteristics on Shared E-Bike Speeding Risk: A Data-Driven Approach (TRBAM-24-03272)

Xiaolong Zhang/Beijing University of Technology, Jianling Huang/Beijing University of Technology, Yang Bian/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Luyao Yin/Beijing University of Technology

2057

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon B

Impact of Individuals, Family, Community, and Technology on Driving Safety and Training: A Lectern-Poster Session

Caitlin Northcutt, University of Kentucky, presiding

Sponsored By Standing Committee on Vehicle User Education, Training, and Licensing

This will be an exciting hybrid session where each title will have 3 minute lectern presentation followed by a 45 minute poster session.

Advanced Driver Assistance System Education and Training: A Conceptual Framework and Best Practices (TRBAM-24-00535)

Justin Mason/University of Iowa, John Gaspar/University of Iowa, Cher Carney/University of Iowa, Wayne Giang/University of Iowa

The Drivingly Trial: Initial Patterns of Learner Teen Driver Behaviors and Parent-Teen Interactions (TRBAM-24-00788)

Jessica Hafetz/University of Edinburgh, Leann Long/University of Edinburgh, Carol Ford/University of Edinburgh, Thandwa Mdululi/University of Edinburgh, Drew Weiss/University of Edinburgh, Jackson Felkins/University of Edinburgh, Nicole Wilson/University of Edinburgh, Catherine McDonald/University of Edinburgh

The Impact of System Experience on Drivers' Mental Models of Advanced Driver Assistance System After Over-the-Air Updates (TRBAM-24-00869)

Jimin Kim/University of Iowa, Justin Mason/University of Iowa, John Gaspar/University of Iowa, Daniel McGehee/University of Iowa, Cher Carney/University of Iowa, Josh Domeyer/University of Iowa, John Lenneman/University of Iowa

On-Road Smartphone Application and Self-Report Data Collection in Teens (TRBAM-24-01035)

Catherine McDonald/University of Pennsylvania, Subhash Aryal/University of Pennsylvania, Kevin Rix/University of Pennsylvania, Chelsea Ward McIntosh/University of Pennsylvania, M. Kit Delgado/University of Pennsylvania, Jeffrey Ebert/University of Pennsylvania

Contextualizing Young Driver Lived Experiences of Riding with an Impaired Driver and Driving Impaired on Mental Well-Being: A Qualitative Study (TRBAM-24-02483)

Kaigang Li/Colorado State University, Deepa Camenga/Colorado State University, Barbara Banz/Colorado State University, Vanessa Zuniga/Colorado State University, Candice Grayton/Colorado State University, Ronald Iannotti/Colorado State University, Federico Vaca/Colorado State University

Mindfulness and Risky Driving Behaviors Among Teenage Drivers in the United States (TRBAM-24-04218)

Johnathon Ehsani/Johns Hopkins University, Sjaan Koppel/Johns Hopkins University, Gayane Yenokyan/Johns Hopkins University, Ahmed Sabit/Johns Hopkins University

Is a Sense of Purpose in Life Associated with Risky Driving Behaviors Among Teenage Drivers in the United States? (TRBAM-24-04289)

Johnathon Ehsani/Johns Hopkins University, Hsing-Feng Hsieh/Johns Hopkins University, Ahmed Sabit/Johns Hopkins University, Gayane Yenokyan/Johns Hopkins University

Psychometric Properties and Validation of a Measure of Parent Perceptions of Teens' Readiness to Drive (TRBAM-24-04352)

Rebecca Weast/Insurance Institute for Highway Safety, Samuel Monfort/Insurance Institute for Highway Safety, Theresa Chirles/Insurance Institute for Highway Safety, Johnathon Ehsani/Insurance Institute for Highway Safety

Health Status and Driving Behaviors in a Sample of Older Drivers: A 10-Year Investigation of the ACTIVE Study (TRBAM-24-04649)

Caitlin Northcutt/University of Kentucky, Tyler Bell/University of Kentucky, Daniela Moga/University of Kentucky, Katie Wheeler/University of Kentucky, Lesley Ross/University of Kentucky, Karlene Ball/University of Kentucky

(continued)

Learning and Changes in Speeding Behavior Among Electric and Internal Combustion Engine Drivers Over Time (TRBAM-24-04932)

Samantha Haus/Massachusetts Institute of Technology, Bruce Mehler/Massachusetts Institute of Technology, Bryan Reimer/Massachusetts Institute of Technology, Pnina Gershon/Massachusetts Institute of Technology

Evaluation of Multiple Training Approaches on Enhancing Drivers' Understanding of Automated Vehicle Systems (TRBAM-24-06055)

Chengxin Zhang/University of Michigan, Huizhong Guo/University of Michigan, Fred Feng/University of Michigan, Anuj Pradhan/University of Michigan, Shan Bao/University of Michigan

2058

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon A

Artificial Intelligence in Traffic Signal Operations: An Owner and Operator Perspective

Peter Koonce, Portland Bureau of Transportation, presiding

Sponsored By Standing Committee on Traffic Signal Systems

Application of Advanced Technology to Improve Traffic Signal Control (P24-21065)

Franz Loewenherz/City of Bellevue

Applications to improve Pedestrian Conflict Notification (P24-21066)

Jeffrey Connor/Seattle Department of Transportation

Transit Signal Priority Applications of Artificial Intelligence (P24-21067)

Jay Jackson/Massachusetts Bay Transportation Authority (MBTA)

2059

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon C

Traffic Flow with Connected and Autonomous Vehicles

Soyoung Ahn, University of Wisconsin, Madison, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

This session focuses on the integration and applications of connected and autonomous vehicles in traffic flow theory.

Car-Following Behavior of Human-Driven Vehicles in Mixed-Flow Traffic: A Driving Simulator Study (TRBAM-24-00836)

Anye Zhou/Oak Ridge National Laboratory, Yongyang Liu/Oak Ridge National Laboratory, Einat Tenenboim/Oak Ridge National Laboratory, Shubham Agrawal/Oak Ridge National Laboratory, Srinivas Peeta/Oak Ridge National Laboratory

Learning Driver Models for Automated Vehicles via Knowledge Sharing and Personalization (TRBAM-24-04346)

Wissam Kontar/University of Wisconsin, Madison, Xinzhi Zhong/University of Wisconsin, Madison, Soyoung Ahn/University of Wisconsin, Madison

Queue Length Estimation Model for Mixed Traffic Flow of Intelligent Connected Vehicles and Human-Driven Vehicles (TRBAM-24-01645)

Cao Ning bo/Jilin University, Jia hui Chen/Jilin University, Li ying Zhao/Jilin University

Real-Time, Congestion-Aware, Distributed Cooperative Rerouting of Connected and Automated Vehicles in Urban Networks (TRBAM-24-03484)

Francesco Vitale/Aalto University, Claudio Roncoli/Aalto University

Investigating the Safety Impact of Cooperative Adaptive Cruise Control Vehicles Under Subpar Vehicle-to-Vehicle Communication Performance (TRBAM-24-03239)

Yangzhen Zhao/Southeast University School of Transportation, Xuedong Hua/Southeast University School of Transportation, Baojie Wang/Southeast University School of Transportation, Huiying Lei/Southeast University School of Transportation, Wei Wang/Southeast University School of Transportation

2060

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 103A

Emerging Research in Impaired Driving

Tara Casanova Powell, Association of Transportation Safety Information Professionals, presiding

Ryan Smith, National Transportation Safety Board (NTSB), presiding

Sponsored By Standing Committee on Impairment in Transportation

Impaired driving research has evolved to include novel methods to detect impairment, societal impacts, and data issues to properly identify interventions and countermeasures in this regard. Current and emerging research including the following will be discussed: the impact of adverse local economic conditions, poverty, & unemployment, on impaired driving crashes; indirect impairment detection using vehicle-based measures; sex differences in how young drivers reflect upon Riding with an Impaired Driver (RWI) and Driving Impaired (DWI) events; and the prevalence of risky driving behaviors, among those who DUI cannabis (DUI-C) and/or DUI alcohol (DUI-A) relative to those who do not drive under the influence of either substance (DUI).

Prevalence of Other Risky Driving Behaviors in Relation to Driving Under the Influence of Cannabis or Alcohol in the United States, 2021–2022 (TRBAM-24-00561)

Lindsay Arnold/AAA Foundation for Traffic Safety, Rebecca Steinbach/AAA Foundation for Traffic Safety, Brian Tefft/AAA Foundation for Traffic Safety

Motor Vehicle Data Linkage and Spatial Econometric Analysis on the Effects of Neighborhood's Economic Distress on Impaired Driving (TRBAM-24-01012)

Seunghoon Oh/University of Illinois, Springfield, Mickey Edwards/University of Illinois, Springfield

Detection of Cannabis-Impaired Driving from Vehicle-Based Inputs Using Machine Learning Methods (TRBAM-24-04345)

Ryan Miller/Grinnell College, Simon Hodson/Grinnell College, Trung Le/Grinnell College, Rose Schmitt/Grinnell College, Gary Milavetz/Grinnell College, Timothy Brown/Grinnell College

Sex Differences in Contexts Surrounding Riding with an Impaired Driver or Driving Impaired: A Qualitative Study (TRBAM-24-04954)

Barbara Banz/Yale School of Medicine, Deepa Camenga/Yale School of Medicine, Kaigang Li/Yale School of Medicine, Vanessa Zuniga/Yale School of Medicine, Candice Grayton/Yale School of Medicine, Ronald Iannotti/Yale School of Medicine, Federico Vaca/Yale School of Medicine

2061

CM (1.75)



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 150B

Cyber Resilient Transportation: An Executive Look at the Data and Tools Necessary to Prepare the National Transportation System

Neil Pedersen, TRB Retired, presiding

Patricia Hu, OST-R/Bureau of Transportation Statistics, presiding

Sponsored By Section - Data and Data Science, Standing Committee on Statewide/National Transportation Data and Information Management, Standing Committee on Information Systems and Technology, Standing Committee on Geographic Information Science

Cyber plays an integral and growing role in our transportation system, from our sensors and controls that operate the system, to energy access powering vehicles and infrastructure, and the IT needed for day-to-day office operations of our organizations. Join a conversation with executives from across the transportation sector and beyond as we examine cyber resilience and vulnerability in transportation and explore possible contours of a national cyber transportation statistics program designed to provide evidence needed to make decisions on the critical cyber issues ahead of us.

Opening Remarks (P24-20358)

Cordell Schachter/U.S. Department of Transportation

Panelists (P24-20361)

Ivory D. Carter/U.S. Transportation Command, Kevin Thibault/Greater Orlando Aviation Authority, Roger Millar/Washington State Department of Transportation, Joshua DeFlorio/Port Authority of New York and New Jersey, Jennifer DeBruhl/Virginia Department of Rail and Public Transportation

2062

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 150A

Addressing Statistical Bias and Uncertainties in Transportation Demand and Safety

Grigorios Fountas, Aristotle University of Thessaloniki, presiding

Sponsored By Standing Committee on Statistical and Econometric Methods

This event will present several papers that were among the best submitted to the Standing Committee on Statistical and Econometric Methods for the 2024 TRB Annual Meeting.

Corridor Level Auto Occupancy in Mobility Monitoring Efforts: A Crash-Based Approach (TRBAM-24-00394)

Yiqing Xu/Virginia Transportation Research Council, Lance Dougald/Virginia Transportation Research Council, John Miller/Virginia Transportation Research Council

Probabilistic Forecasting of Bus Travel Time and Passenger Occupancy with Bayesian Time-Dependent Continuous Density Hidden Markov Model (TRBAM-24-00564)

Xiaoxu Chen/McGill University, Zhanhong Cheng/McGill University, Lijun Sun/McGill University

The Effectiveness of Data Imbalance Treatment in Weather-Related Crash Severity Analysis (TRBAM-24-06189)

Abimbola Ogungbire/University of North Carolina, Charlotte, Srinivas Pulugurtha/University of North Carolina, Charlotte

Correcting for Endogeneity Between Crash Injury Severity and Crash Type at Freeway Ramp Areas Using a Hierarchical Bayesian Bivariate Ordered Approach (TRBAM-24-04171)

Penglin Song/Hong Kong Polytechnic University, N.N. Sze/Hong Kong Polytechnic University, Sikai Chen/Hong Kong Polytechnic University, Samuel Labi/Hong Kong Polytechnic University

2063

CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 151A

Rapid Responses to Disasters in Rural and Public Lands

Johanna Cockburn, City of Greensboro, presiding

Sponsored By Standing Committee on Transportation Needs of National Parks and Public Lands, Rural Transportation Issues Coordinating Council, Standing Committee on Low-Volume Roads, Standing Committee on Road Weather

Extreme weather is negatively impacting existing infrastructure across the country. Rural areas and public lands face unique challenges in responding to these events. In this session, attendees will take away rapid response strategies and best practices learned from rural and public land agencies.

Emergency Relief for Federally Owned Roads to the Rescue: Quick Repair of Transportation Systems on Federal Public Lands (P24-20527)

Vincent Ziols/U.S. Fish and Wildlife Service

U.S. Department of Agriculture Forest Service Disaster Response and Emergency Relief Services Partnerships (P24-20817)

Emmanuel Yartey/USFS Eastern Region, USDA, Amanda Warner Thorpe/U.S. Forest Service

Vermont Recovery from 2023 Flooding (P24-20818)

Ashley Atkins/Vermont Agency of Transportation, Melissa Davis/Vermont Agency of Transportation

2064

CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 152B

Innovations in Mobility Services: Enhancing Integration, User Choices, and Policy Implications

Mahmudur Fatmi, University of British Columbia, presiding

Sponsored By Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices

This session focuses on transformational technologies in the transportation field that make use of Information and Communication Technologies (ICT). Several technologies have reached maturity, which makes them suitable to support concrete applications in transportation, and more broadly in the context of activity-travel behavior. While substantial hope is placed in such technologies enabling novel mobility solutions and increased efficiency, systematic conceptualization or evidence is only slowly emerging.

(continued)

Exploring Seamless Integration and Policy Implications for Enhanced Interoperability in Mobility on Demand (TRBAM-24-03072)

Vishal C. Kummetha/University of South Florida, Sisinnio Concas/University of South Florida, Lisa Staes/University of South Florida, Jodi Godfrey/University of South Florida

Hailing the Future of On-Demand Mobility: How Changes in Ridehail Market Factors Affect the Use of Ridehail Modes and Transportation System Performance (TRBAM-24-01145)

Annika Todd-Blick/LBNL: E O Lawrence Berkeley National Laboratory, Carlos Guirado/LBNL: E O Lawrence Berkeley National Laboratory, Sydney Fujita/LBNL: E O Lawrence Berkeley National Laboratory, Nazanin Rezaei/LBNL: E O Lawrence Berkeley National Laboratory, Cristian Poliziani/LBNL: E O Lawrence Berkeley National Laboratory, Zachary Needell/LBNL: E O Lawrence Berkeley National Laboratory, Tom Wenzel/LBNL: E O Lawrence Berkeley National Laboratory, Haitam Laarabi/LBNL: E O Lawrence Berkeley National Laboratory, C. Anna Spurlock/LBNL: E O Lawrence Berkeley National Laboratory

Influencing Factors in Accepting a Crowdsourced Delivery Integrated into Mobility-as-a-Service (TRBAM-24-03372)

Qiang Qi/Eindhoven University of Technology, Soora Rasouli/Eindhoven University of Technology, Tao Feng/Eindhoven University of Technology

Breaking Free from Parking Meters: Unveiling Customer Preferences for Smart Parking App Features (TRBAM-24-03566)

Paula Macias/Queensland University of Technology, Mehdi Ahmadian/Queensland University of Technology, Douglas Baker/Queensland University of Technology, Alexander Paz/Queensland University of Technology

2065

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Ballroom C

Dwight David Eisenhower Transportation Fellowship Program Research Showcase

Latoya Jones, Federal Highway Administration (FHWA), presiding

Sponsored By Section - Executive Management Issues

An opportunity to listen to the transportation research findings of graduate students. Dwight David Eisenhower Transportation Fellowship Program research presentations are selected by FHWA and are not reviewed by TRB standing committees.

Transportation Challenges Facing Low-Income Households with Children: A Case Study in South Los Angeles (P24-21222)

Madeline Wander/University of California, Los Angeles

Driver Attitudes and Behavior in the Presence of E-Scooters Versus Bicyclists (P24-21263)

Leila Cesic/University of Massachusetts, Amherst

Presentation (P24-21469)

Matthew Nice/Vanderbilt University

Presentation (P24-21470)

Jayson Francois/Florida A&M University

Presentation (P24-21471)

Carol Akpan/Prairie View A&M University

2066

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 152A

Shaping the Agency of the Future: Adapting with Workforce, Technology, and Funding Challenges

Alyssa Ryan, University of Arizona, presiding

Sponsored By Standing Committee on Strategic Management

As agencies grapple with formidable obstacles, encompassing workforce dynamics, funding constraints, and technological shifts, an operational transformation becomes imperative. Adapting, including evolving connectivity, integrating skills, and embracing new funding streams, is no small feat. Hear from leaders on their strategies for reshaping agencies amid these challenges.

Facing Change at the Massachusetts Department of Transportation (P24-20670)

Monica Tibbits-Nutt/Massachusetts Department of Transportation

Addressing Change at SEPTA (P24-20672)

Leslie Richards/Southeastern Pennsylvania Transportation Authority (SEPTA)

Addressing Changes at the Metropolitan Planning Organization Level (P24-20679)

Greg Stuart/Broward Metropolitan Planning Organization

Shaping Agencies (P24-21421)

Erin Aleman/Chicago Metropolitan Agency for Planning (CMAP)

Facing Change in Public Transportation (P24-21555)

Mary Leary/Federal Transit Administration (FTA)

2067 CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 151B

Public Involvement: Findings from the 2023 State of the Practice Survey

Dave Biggs, Social Pinpoint, presiding

Sponsored By Standing Committee on Public Engagement and Communications, Standing Committee on Equity in Transportation

Public engagement is evolving rapidly for transportation agencies and it is more important than ever to monitor the state of the practice. In response, a team of practitioners and researchers teamed up with TRB, AASHTO, AMPO, APTA, NADO and NARC to conducting a large-scale peer-to-peer process to develop the first annual State of the Practice (SOTP) Report for public engagement in transportation agencies in the United States. Input was collected from over 400 agency representatives on public engagement staffing, processes, tools, successes, challenges and predictions for the future. This session will highlight the research process, key findings and explore solutions to key tensions raised by agencies during the study.

Public Involvement: Findings from the 2023 State of the Practice Survey (P24-20664)

Lloyd Brown/HDR, Dave Biggs/Social Pinpoint, Amy Luft/COMPASS, Susan Howard/Texas Department of Transportation

2068

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 156

Legal Considerations for Navigating Transit Fiscal Challenges

Katie Kraft, Thompson Coburn LLP, presiding

Sponsored By Standing Committee on Transit and Intermodal Transportation Law

Transit agencies are facing a financial cliff as COVID relief funding expires. Some agencies are trying to fill the gap through increased fare enforcement, while others are going in the opposite direction by eliminating fares. What are the legal and financial concerns surrounding both approaches, and is there a reasonable middle ground? What considerations are being explored to support a more adaptable and demand-responsive system?

Legal Considerations for Navigating Transit Fiscal Challenges (P24-21070)

Bonnie Ashley/City of Richmond, Alvaro Villagran/Shared-Use Mobility Center, Daniel Wagner/Virginia Department of Rail and Public Transportation

2069



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 204AB

Impact of Climate Change on the Seismic Design of Bridges

Mervyn Kowalsky, North Carolina State University, presiding
Ariadne Palma Parra, North Carolina State University, presiding

Sponsored By Standing Committee on Seismic Design and Performance of Bridges

This session will discuss the impacts and mitigation of climate change effects on the seismic behavior and design of bridges. The focus will be on how climate change impacts the ability of bridges to resist seismic demands. This includes the effects of phenomena such as scour, sea level rise, tsunamis, and permafrost degradation. Speakers' backgrounds are from professional practice, research, and code development. The session will include four 15-minute presentations followed by a 30-minute panel discussion with the opportunity for the audience to engage with the speakers.

Alaska Perspective on How Climate Change Impacts Bridge Design (P24-20603)

Leslie Daugherty/Alaska Department of Transportation and Public Facilities

How Climate Change Impacts Permafrost and the Corresponding Effect on Bridge Substructures (P24-20604)

John Thornley/WSP

California Department of Transportation and Extreme Weather Impacts on Bridges (P24-20605)

Nina Choy/California Department of Transportation

The Importance of Codification for Dealing with Climate Change Challenges in Bridge Design (P24-20602)

Sissy Nikolaou/National Institute of Standards and Technology

2070

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 201

Alternative Contracting: Projects That Did Not Go Well

Jay Hietpas, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Project Delivery Methods

Lessons learned from unsuccessful projects are often times more valuable than successful projects. Owners, consultants, and contractors will talk about "what went wrong" on design-build, construction manager / general contractor (CMGC), and P3 projects. The focus will be on what the owner could have done better to be prepared during planning, scoping, design, and procurement. Come listen to this fun presentation and panel discussion.

Alternative Contracting: Projects That Did Not Go Well (P24-21069)

Paul Huston/HNTB Corporation, Eric Kahlig/Ohio Department of Transportation, Kevin Hagness/Minnesota Department of Transportation, Mark Dubay/Michigan Department of Transportation, Shailendra Patel/Virginia Department of Transportation

2071

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 209C

Traffic Staging Impact on Bridge Construction

Curtis Carter, Iowa Department of Transportation, presiding

Sponsored By Standing Committee on Construction of Bridges and Structures

Staging to maintain traffic can have a profound impact on the construction sequence, means and methods and schedule impacts. Three presentations will showcase the considerations and impacts of traffic staging on the construction of the noted bridges.

Iowa Department of Transportation Case Studies on Narrow Interstate Bridge Repair and Replacement (P24-21174)

James Nelson/Iowa Department of Transportation

I-480 Valley View Bridge: Traffic Flow Prioritization via Innovative Bridge Construction (P24-21175)

Randy Thomas/Jacobs

(continued)

Complex Staging of a Long Span Curved Steel Bridge (P24-21200)

Michael Culmo/CHA Consulting, Inc.

2072

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 202B

Safely Designing and Operating Intersections for All Pedestrian Abilities

Seri Park, University of Nevada, Reno, presiding

Sponsored By Standing Committee on Roundabouts and other Intersection Design and Control Strategies

This session will focus on sharing the latest research and guidance for pedestrians at roundabouts and intersections and includes highlights recent research and publications, a new model for estimating pedestrian capacity at roundabouts, pedestrian performance at a new signalized intersection, and the greatly anticipated Intersection Control Evaluation (ICE) guidance and tools to be published in 2024.

Improving Intersections and Roundabouts for Walking, Biking, and Rolling (P24-20715)

Jeffrey Shaw/Federal Highway Administration (FHWA), Brooke Struve/Federal Highway Administration (FHWA)

A New Model for Estimating the Influence of Pedestrians on the Entry Capacity of Roundabouts

(TRBAM-24-00764)

Julian Schmitz/Ruhr University, Bochum, Ning Wu/Ruhr University, Bochum, Justin Geisfeldt/Ruhr University, Bochum

Pedestrian Performance of New Alternative Intersections with Three-Phase Traffic Signals (TRBAM-24-02906)

Zhiliang Luo/University of Mississippi, Amirarsalan Mehrara Molan/University of Mississippi, Joseph Hummer/University of Mississippi, Stephen Osafo-Gyamfi/University of Mississippi, Anurag Pande/University of Mississippi

Intersection Control Evaluation Guide (NCHRP 17-98) Overview (P24-20716)

Bastian Schroeder/Kittelson & Associates, Inc., Shannon Warchol/Kittelson & Associates, Inc., Hermanus

Steyn/Kittelson & Associates, Inc., Pete Jenior/Kittelson & Associates, Inc.

2073

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 207B

Advances in Geotechnical Asset Management

Scott Anderson, BGC Engineering Inc, presiding

Darren Beckstrand, Landslide Technology, presiding

Sponsored By Section - Geology and Geotechnical Engineering, Subcommittee on Geo-Environmental Aspects of Geomaterials

This event will present advances in geotechnical asset management using a variety of approaches available today. Four presentations from across the US and Canada, and with a focus on embankments and retaining walls.

Embankment Data Collection for Geotechnical Asset Management: New Brunswick, Canada, Department of Transportation Case Study (TRBAM-24-03075)

Jared McGinn/New Brunswick Department of Transportation, Kennedy Burgoyne/New Brunswick Department of Transportation, Katherine Justason/New Brunswick Department of Transportation, Reilly Parsons/New Brunswick Department of Transportation

What Are the Most Important Items to Inspect on a Mechanically Stabilized Earth Wall?: A Summary from 30 Experts (TRBAM-24-02312)

Stacey Kulesza/Texas State University, Robert Parsons/Texas State University, Jie Han/Texas State University

Incorporating New Nationwide Public LiDAR into Geotechnical Asset Management and Resilience Programs (P24-20943)

Mark Vessely/BGC Engineering Inc, Madeline Hille/BGC Engineering Inc, Bob Group/Colorado Department of Transportation, Nicole Oester Mapes/Colorado Department of Transportation

Data-Driven Performance Models and Decision-Support Tools for Geotechnical Asset Management (P24-20944)

Ahmad A Alhasan/Applied Research Associates, Inc.

2074

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 209AB

Machine Learning Applications in Foundation Design and Performance: Site Variability in Load and Resistance Factor Design

Sharid Amiri, California Department of Transportation, presiding

Sponsored By Standing Committee on Foundations of Bridges and Other Structures, Section - Geology and Geotechnical Engineering

This lectern session covers a variety of topics in foundation design, from applications of Machine Learning (ML) to site variability in LRFD.

Implementing Site Variability into Load and Resistance Factor Design of Shallow Foundations on Cohesive Soils (TRBAM-24-00053)

Murad Abu-Farsakh/Louisiana Department of Transportation and Development, Md Habibur Rahman/Louisiana Department of Transportation and Development, Masoud Nobahar/Louisiana Department of Transportation and Development, Ayman Okeil/Louisiana Department of Transportation and Development

Machine Learning–Based Economic Impact Analysis for Steel Piles Driven in Intermediate Geomaterials (TRBAM-24-00722)

Nafis Masud/University of Wyoming, Shaun Wulff/University of Wyoming, Kam Weng Ng/University of Wyoming

Exploring Tree-Based Machine Learning Models to Predict Load Settlement Behavior of Piles from Cone Penetration Test Data (TRBAM-24-04846)

Murad Abu-Farsakh/Louisiana Department of Transportation and Development, Mohammad Moontakim Shoaib/Louisiana Department of Transportation and Development

Utilizing Machine Learning for CPT-Based Soil Classification (TRBAM-24-01037)

Milad Fatehnia/ECSlimited LLC, Vahidreza Mahmoudabadi/ECSlimited LLC, Sharid Amiri/ECSlimited LLC

2075

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 202A

Environmental Product Declarations in Asphalt: A Step Toward Life-Cycle Assessment

Mohamed Elkashef, Oklahoma State University, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement, Standing Committee on Production and Use of Asphalt

Pavement Sustainability: Perspective of Liquid Asphalt Producers (P24-20693)

Chaitanyaganesh Bhat/Asphalt Institute

Addressing Data Gaps and Improving Upstream Data Quality in Asphalt Mixture Environmental Product Declarations (P24-20694)

Joseph Shacat/National Asphalt Pavement Association

Environmental Product Declarations for Flexible Pavement Treatments (P24-20695)

Andrew Braham/University of Arkansas, Fayetteville

Life-Cycle Consideration for Environmental Impacts of Modifying Asphalt Binders (P24-20696)

John Harvey/University of California

2076

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 204C

Research Findings, Implementation, and Practical Approaches for Concrete Durability

Christopher Jones, Kansas State University, presiding

Sponsored By Standing Committee on Durability of Concrete

This session will highlight the practical approaches to implementation of recent concrete research findings.

(continued)

Answers to Your Resistivity Questions and Helpful Findings to Develop a Robust Resistivity Specification (TRBAM-24-03088)

Jagan Gudimettla/Brick & Byte, Inc, Joshua Brinegar/Brick & Byte, Inc, Michael Praul/Brick & Byte, Inc, Jim Grove/Brick & Byte, Inc, Robert Conway/Brick & Byte, Inc

Laboratory and Field Evaluation of Anti-Icing Impacts on Concrete Durability (TRBAM-24-03977)

John Kevern/University of Missouri, Kansas City, Danny Xiao/University of Missouri, Kansas City, Suellen D'Amore/University of Missouri, Kansas City

Practical Approaches to Long-Lasting Bridge Decks (TRBAM-24-00222)

H. Celik Ozyildirim/Virginia Department of Transportation, Harikrishnan Nair/Virginia Department of Transportation, Mary Sharifi/Virginia Department of Transportation

Comprehensive Investigation of Curing Regimen and Conditioning Procedures on Resistivity Measurements of Bridge Deck High-Performance Concrete Mixtures (TRBAM-24-04782)

Pravin Saraswatula/Texas A&M Transportation Institute, Anol Mukhopdhyay/Texas A&M Transportation Institute

2077

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 101

Concrete Pavement Assessment and Innovations

Eric Ferrebee, American Concrete Pavement Association, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Concrete Pavements

Reliability Assessment for U.S. Department of Defense Concrete Pavements (TRBAM-24-02271)

Anastasios Ioannides/U.S. Army Corps of Engineers (USACE), Jeb Tingle/U.S. Army Corps of Engineers (USACE)

Measuring Long-Term Performance of Unbonded Concrete Overlay Pavement in Florida (TRBAM-24-02451)

Shengxin Cai/Applied Research Associates, Inc., Frank Ni/Applied Research Associates, Inc., Charles Holzschuher/Applied Research Associates, Inc., Guangming Wang/Applied Research Associates, Inc., Hung-Wen (Oliver) Chung/Applied Research Associates, Inc.

Learning the Appropriate Local Averaging Length for Traffic Speed Deflection Velocity Measurements: Application to the Analysis of Rigid Pavement Joints Response (TRBAM-24-03837)

Samer Katicha/Virginia Polytechnic Institute, Martin Scavone/Virginia Polytechnic Institute, Eugene Amarah/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute

Unlocking Performance Insights: Evaluating Full-Scale, Electrically Conductive Concrete Heated Pavement Systems to Identify Key Design Parameters (TRBAM-24-04551)

MD LUTFOR RAHMAN/Iowa State University, AMIR MALAKOOTI/Iowa State University, Halil Ceylan/Iowa State University, Sunghwan Kim/Iowa State University, Peter Taylor/Iowa State University

2078

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 207A

Evaluating the Impact of Asphalt Mixture Modifications for Pavement Design

Daba Gedafa, University of North Dakota, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Asphalt Pavements

This podium session explores the ways to assess the impacts of asphalt mixture modification on asphalt pavement design. Innovative research explores evaluating the impacts through computer modeling, data from instrumented field sections, and accelerated pavement testing in the field.

Reflective Cracking Performance Evaluations of Highly Modified Asphalt Mix (TRBAM-24-01118)

Zhe Zeng/North Carolina State University, Nithin Sudarsanan/North Carolina State University, Shane Underwood/North Carolina State University, Youngsoo Kim/North Carolina State University, Murthy Guddati/North Carolina State University

Long-Term Performance of Flexible Pavements Containing Crumb Rubber Modified Asphalt in Louisiana (TRBAM-24-02311)

Shasank Pant/Louisiana Department of Transportation and Development, Moses Akentuna/Louisiana Department of Transportation and Development, Louay Mohammad/Louisiana Department of Transportation and Development, Samuel Cooper, III/Louisiana Department of Transportation and Development, Samuel Cooper, Jr./Louisiana Department of Transportation and Development

(continued)

Validated Finite Element Model for Predicting Asphalt Concrete Overlay Reflective Cracking Potential (TRBAM-24-02328)

Aravind Ramakrishnan/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign
Accelerated Pavement Testing of Re-Recycled Cold Central Plant Recycled Asphalt Mixtures (TRBAM-24-04559)
Benjamin Bowers/Auburn University, David Timm/Auburn University, Elizabeth Turochy/Auburn University, Brian Diefenderfer/Auburn University

2079

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 103B

Highlights from the 2023 International Conference on Road Weather and Winter Maintenance

Anna Arvidsson, Swedish National Road and Transport Research Institute (VTI), presiding
Paul Pisano, Paul Pisano LLC, presiding

Sponsored By Standing Committee on Winter Maintenance, Standing Committee on Road Weather

Correlation Between Floating Car Data and Road Weather Information Implemented for Winter Road Maintenance Follow-Up by Monitoring the Road Friction (P24-20203)

Sofia Sollén/Lulea University of Technology

Performance of a Winter Road Maintenance Decision-Support System (P24-20218)

Shawn Truelson/DTN, LLC

Performance Metrics for Winter Operational Planning (P24-20219)

Gregory Jones/Federal Highway Administration (FHWA)

Artificial Intelligence and Roadway Friction Modeling (P24-20220)

Curtis Walker/National Center for Atmospheric Research (NCAR)

Use of Probe Speed Data to Assess Winter Maintenance Effectiveness (P24-20221)

Dave Huft/South Dakota Department of Transportation

Salt Sustainability: An Effort in Operational Performance Monitoring at the Minnesota Department of Transportation (P24-20222)

Ben Hershey/DTN, LLC

2080

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 140

Innovations in Pavement Preservation Treatments

John Senger, Illinois Department of Transportation, presiding

Sponsored By Standing Committee on Pavement Preservation

The presenters will showcase cutting-edge research findings and state-of-the-art results, highlighting innovative technologies within the realms of new testing methods, sustainable materials, and performance enhancements in the field of pavement preservation. Moreover, the presentations will delve into the intricacies of performance enhancements, ultimately contributing to longer life and more sustainable pavements.

Using Color Measurements to Quantify Aggregate and Asphalt Emulsion Compatibility (TRBAM-24-00390)

Gabriel Macedo Duarte/North Carolina State University, Shivpal Yadav/North Carolina State University, Cassie Castorena/North Carolina State University

Assessing the Performance of Bio-Based Rejuvenator as a Topical Treatment for Asphalt Pavement: Field Trial Study (TRBAM-24-05861)

Ana Luiza Rodrigues/Iowa State University, R. Williams/Iowa State University, Caio Falcao/Iowa State University, Eric Cochran/Iowa State University, Nacu Hernandez/Iowa State University, Andrew Becker/Iowa State University, Baker Kuehl/Iowa State University, Michael Forrester/Iowa State University, Ashley Buss/Iowa State University, Austin Hohmann/Iowa State University, Maxwell Staver/Iowa State University, Irvin Pinto/Iowa State University

Laboratory Performance and Field Demonstration of Asphalt Overlay with Rubber and Tire Fabric Fiber (TRBAM-24-05186)

Dongzhao Jin/Michigan Technological University, Sepehr Mohammadi/Michigan Technological University, Kai Xin/Michigan Technological University, Lei Yin/Michigan Technological University, Zhanping You/Michigan Technological University

(continued)

Quantifying Pavement Preservation Effectiveness for Enhanced Decision Making (TRBAM-24-04589)

Sara Arezoumand/No Organization, Alireza Sassani/No Organization, Omar Smadi/No Organization

2081

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 206

Environmental and Other Bridge Management Considerations

Anne Rearick, Indiana Department of Transportation, presiding

Sponsored By Standing Committee on Bridge and Structures Management, Standing Committee on Road Weather

This session consists of four presentations related to climate, environmental, flooding and other bridge management considerations. The first looks at how flood vulnerability, social equity and environmental justice were considered to prioritize bridge rehabilitation projects. The second discusses a model that uses a clustering approach to assess flooding vulnerability. The third considers the impact of environmental conditions on bridge deck deterioration modeling. The last presents a GIS-based framework for climate change risk assessment of critical infrastructure systems.

Prioritizing Accelerated Bridge Rehabilitation Projects Considering Quantitative Assessment of Flood Vulnerability, Social Equity, and Environmental Justice (TRBAM-24-05429)

Nasim Mohamadiazar/Florida International University, Ali Ebrahimian/Florida International University

Clustering Multi-Span Bridges in Vermont for Flooding Hazards (TRBAM-24-05322)

Sreeram Anantharaman/National Institute of Standards and Technology, Steven Matile/National Institute of Standards and Technology, William Hughes/National Institute of Standards and Technology, Indrani Chattopadhyay/National Institute of Standards and Technology, Wei Zhang/National Institute of Standards and Technology, Nalini Ravishanker/National Institute of Standards and Technology, Ramesh Malla/National Institute of Standards and Technology

The Impact of Environmental Conditions on Predicting Condition Rating of Concrete Bridge Decks (TRBAM-24-05131)

Chan Yang/Rutgers University, Xin Wang/Rutgers University, Hani Nassif/Rutgers University

A GIS-Based Framework for Climate Change Risk Assessment of Integrated Horizontal Infrastructure Network (TRBAM-24-03004)

Annisa Hasanah/University of Auckland, Theunis Henning/University of Auckland, Liam Wotherspoon/University of Auckland, Kurt Hayward/University of Auckland

2082 CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 146B

Addressing Road Safety Challenges in Developing Countries: Insight from a Multidisciplinary Perspective

Ning Li, Virginia Department of Transportation, presiding

Manjiri Akalkotkar, VIA Metropolitan Transit, presiding

Sponsored By Standing Committee on Transportation in the Developing Countries, Subcommittee on Roadway System Management and Operations, Safety, and Resilience, Subcommittee on Sustainable and Equitable Access and Mobility for All, International Coordinating Council

This session will delve into the critical transportation safety and mobility issues faced by developing countries, showcasing research findings from various corners of the world, shedding light on the unique problems encountered in low- and middle-income countries, and exploring potential solutions. The session aims to facilitate discussions and knowledge sharing among transportation experts, policymakers, and researchers to work towards safer and more efficient transportation systems in these regions.

Economic and Social Costs of Traffic Crashes in Saudi Arabia (TRBAM-24-03264)

Saif Alarifi/King Saud University, Khalid Alkahtani/King Saud University, Miasem Bajowaiber/King Saud University

An Analysis of Risk Factors Contributing to Pedestrian Crashes: A Case Study of Dire Dawa, Ethiopia (TRBAM-24-03420)

Gebru Weldegebrail/Tongji University, Xuesong Wang/Tongji University

Factors Influencing Traffic Signal Violations by Vulnerable Road Users: A Case Study from an Indian Mid-Sized City (TRBAM-24-04172)

Dipanjan Mukherjee/National Institute of Technology Silchar, Abhinay Kumar/National Institute of Technology Silchar, Ram Dewangan/National Institute of Technology Silchar

(continued)

Meso-Level Safety Analysis for Urban Arterials Considering Road Network Characteristics (TRBAM-24-05157)

Yue Gao/Tongji University, Xuesong Wang/Tongji University, Zhicheng Dai/Tongji University, Lu Yang/Tongji University

Disabilities Sustained from Road Crash Injuries in Low- and Middle-Income Countries: Lessons from a World Bank Study (TRBAM-24-05265)

Sudeshna Mitra/World Bank, Amy A Aida/World Bank, Seemeen Saadat/World Bank, Kazuyuki Neki/World Bank, Mohammad K Khalaf/World Bank, Heather E Rosen/World Bank, Nino Paichadze/World Bank, Adnan A Hyder/World Bank

2083 CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 146A

Older Adults, Travel Options, and Barriers to Accessibility

Todd Hansen, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Accessible Transportation and Mobility

As adults become older in age, their ability to travel via certain transportation modes independently and their needs to reach different destinations will change over time. This session will feature presentations on research concerned with access to mobility options for older adults. Topics of discussion will include driving behavior, new mobility and autonomous vehicles, perceptions of available mobility options, travel choices based on comfort level and perceived safety, availability of assistance from friends and family, and tools for measuring these factors.

Ageing Society, Family Care, and Time Poverty (TRBAM-24-05468)

Sang-O Kim/Cornell University

Older Adults' Perceptions and Behaviors on Driving: A Mixed Method Study (TRBAM-24-05564)

Juana Perez/University of Texas, Arlington, Mohammad Rashidi/University of Texas, Arlington, Jobaidul Boni/University of Texas, Arlington, Kate Hyun/University of Texas, Arlington, Bahareh Farrokhi/University of Texas, Arlington, Seri Park/University of Texas, Arlington

A Composite Criticality Index to Assess Seniors' Mobility Dependence: The Case Study of Rural Northern Italian Municipalities (TRBAM-24-04102)

Caterina Caramuta/University of Trieste, Giovanni Longo/University of Trieste, paolo zaramella/University of Trieste

Navigating Transportation Barriers: Older Adults' Familiarity and Perceptions of New Mobility Options and Autonomous Vehicles in Rural Arkansas (TRBAM-24-05617)

Arna Nithila/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville, Alishia Ferguson/University of Arkansas, Fayetteville, Michelle Gray/University of Arkansas, Fayetteville, Jennifer Webb/University of Arkansas, Fayetteville

2084 CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 146C

All Aboard: The Section 106 Program, Rail Rights-of-Way, and Bipartisan Infrastructure Law Projects

Melissa Ivie, Federal Railroad Administration (FRA), presiding

Sponsored By Standing Committee on Historic and Archeological Preservation in Transportation

The session will provide updates on FRA and FTA's use, application, and benefits of the Advisory Council on Historic Preservation's Section 106 Program Comment to Exempt Consideration of Effects to Rail Properties within Rail Rights-of-Way. Case study and example uses of the Program Comment over the past five years will be shared, and there will be an interactive audience discussion to explore its use to date by other agencies. The session will also highlight the benefits of this recent streamlining tool and how more agencies can use it to successfully complete Section 106 and deliver critical BIL Projects on time.

Federal Railroad Administration Perspective (P24-20293)

Amanda Ciampolillo/Federal Railroad Administration (FRA)

Federal Transit Administration Perspective (P24-20294)

Casey Campetti/Federal Transit Administration (FTA)

Advisory Council on Historic Preservation Perspective (P24-20295)

Jaime Loichinger/Advisory Council on Historic Preservation

2085 CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 147A

Bus Transit Quality of Service

Victoria Perk, University of South Florida, presiding

Sponsored By Standing Committee on Transit Capacity and Quality of Service

This session will include the presentation of four papers related to the capacity and quality of service of bus transit. The paper topics include bus headway inconsistency, delays at stops, in-vehicle crowding, and the exploration of factors leading to a decline in bus ridership.

A Resilience-Based Approach to Measurement of Headway Inconsistency (TRBAM-24-03156)

Jeric Kim/Seoul National University, Sedong Moon/Seoul National University, Dong-Kyu Kim/Seoul National University

Diagnosis of Bus Delays at Stops Using On-Board Surveillance Video and Automatic Vehicle Location Data (TRBAM-24-05746)

Yuxiong Ji/Tongji University, Yongrui Yao/Tongji University, Yujing Zheng/Tongji University, Yu Shen/Tongji University, Yuchuan Du/Tongji University

Optimal Bus Reassignment Considering In-Vehicle Overcrowding (TRBAM-24-01366)

Zakir Farahmand/National Technical University of Athens (NTUA), Konstantinos Gkiotsalitis/National Technical University of Athens (NTUA), Karst Geurs/National Technical University of Athens (NTUA)

Exploring the Factors Contributing to the Decline in Bus Ridership: A Random Forest Approach (TRBAM-24-02146)

Zhenming Li/Tongji University, Zhengyu Duan/Tongji University, Rongjie Lu/Tongji University, Wei Sun/Tongji University

2086 CM (1.75)

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 145A

How Do I Get There?: Assessing Transit Access

Patrick Coleman, AECOM, presiding

Sponsored By Standing Committee on Public Transportation Planning and Development, Standing Committee on Pedestrians, Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Passenger Intermodal Facilities

This session will explore access to transit. Presentations will examine questions regarding getting to and from transit (the first-/last-mile question), the transit stop itself, and how the access to jobs that transit provides varies by city.

What Promotes the Integration of Metro and Ridesourcing?: Analysis of First- and Last-Mile Origin-Destination Flows (TRBAM-24-00284)

Tanhua Jin/Ghent University, Long Cheng/Ghent University, Kunbo Shi/Ghent University, Jun Cao/Ghent University, Jonas De Vos/Ghent University, Frank Witlox/Ghent University

Feasibility of Incorporating More Walking into Commuting with Public Transportation (TRBAM-24-05896)

Yuval Hadas/Bar Ilan University, Dan Katz/Bar Ilan University, Jonathan Rabinowitz/Bar Ilan University

Bus Stop Amenity Policy and Practice: A Multi-Agency, Multi-Jurisdictional Evaluation (TRBAM-24-04335)

Xavier Harmony/Northern Virginia Transportation Commission, Sophie Spiliotopoulos/Northern Virginia Transportation Commission, Rachel Inman/Northern Virginia Transportation Commission

Examining Accessibility to Employment Centralization Provoked by Public Transit (TRBAM-24-06045)

Alireza Ermagun/George Mason University

2087

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 147B

Current Trends in Railroad Operating Technologies

C Dick, University of Texas, Austin, presiding

Sponsored By Standing Committee on Railroad Operating Technologies

This hybrid session will consist of short lectern presentations followed informal poster presentations where attendees can meet the paper authors and discuss their research.

Optimization Model for Railway Capacity Planning with Consideration to Operational Stability and Efficiency (TRBAM-24-01554)

Shao-Yuan Huang/National Taiwan University, Po-I Chen/National Taiwan University, Yung-Cheng Lai/National Taiwan University

Route-Based Intermediate and Terminal Station Capacity Models for High-Speed Rail (TRBAM-24-01562)

Yu-Sheng Chen/National Taiwan University, Ming-Yu Tu/National Taiwan University, Yung-Cheng Lai/National Taiwan University

Optimization of Train Timetabling Integrated with Skip-Stopping Scheme: A Passenger Assignment Method Considering Train Overtaking (TRBAM-24-01567)

Paraskevi Koliou/Tongji University, Pengling Wang/Tongji University, Yutao Ye/Tongji University, Jianhao Ge/Tongji University, Wei Zhu/Tongji University

Integrated Optimization of Train Timetable Rescheduling and Temporary Maintenance Plan Under Severe Weather Conditions (TRBAM-24-02673)

Jing He/Kunming University of Science and Technology, Yuting Duan/Kunming University of Science and Technology, Fengyuan Wang/Kunming University of Science and Technology, Sihui Long/Kunming University of Science and Technology

Periodic Train Scheduling Problem with Consideration of Trans-shipment, Time-Slot Allocation: A Case Study for an Intermodal Transport Network in Europe (TRBAM-24-03634)

Ralf Elbert/Technical University of Darmstadt, Hongjun Wu/Technical University of Darmstadt

A Dispatching Algorithm for Simulations in Shared Use Rail Corridors (TRBAM-24-05033)

Daniel Brod/Decisiontek

Integrated Optimization Approach for Train Timetable Rescheduling and Passenger Reassignment Under Disruptions in High-Speed Railway (TRBAM-24-05181)

Pengcheng Wen/Beijing Jiaotong University, Peng Zhao/Beijing Jiaotong University, Huiting Zhang/Beijing Jiaotong University, Pu Zhang/Beijing Jiaotong University

2088

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 145B

Last Mile Challenges and the Importance of Curbside Management

Johanna Amaya, Pennsylvania State University, University Park, presiding

Sponsored By Standing Committee on Urban Freight Transportation

The last mile continues to be one of the most challenging parts for freight transportation. There is increasing pressure on companies to implement innovative solutions that align with the objectives of cities to alleviate congestion, decrease emissions, and provide more space for the citizens. In this session, speakers will present their findings about the demand for curbside space and how it relates to establishments' need for freight, as well as about solutions (e.g., parcel lockers) with potential to improve the sustainability of urban freight transportation.

The Missing Link Between Urban Commercial Curb Use and Freight Trip Generation (TRBAM-24-05154)

Giacomo Dalla Chiara/University of Washington, Thomas Maxner/University of Washington, Nota Goulianou/University of Washington, Anne Goodchild/University of Washington

Stimulating the Use of Parcel Lockers to Improve the Sustainability of Last-Mile Deliveries (TRBAM-24-02386)

Alinda Kokkinou/Breda University, Hans Quak/Breda University, Ondrej Mitás/Breda University, Albert Mandemakers/Breda University

(continued)

Navigating the Last Mile: Opportunities and Challenges Toward Sustainable E-Commerce Deliveries (TRBAM-24-02366)

Anmol Pahwa/University of California, Davis, Miguel Jaller/University of California, Davis

Parking Patterns of Last-Mile Delivery Vehicles: A Comparison Between Light-Duty Trucks and Electric Cargo Tricycles (TRBAM-24-02500)

Farah Ghizzawi/University of Toronto, Usman Ahmed/University of Toronto, Matthew Roorda/University of Toronto

2089

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 144C

Intermodal Freight and the Media: Why Getting the Story Right Matters

Tyler Reeb, California State University, Long Beach, presiding

Sponsored By Standing Committee on Intermodal Freight Transport

This session will focus on what journalists need to know about freight and supply chains and how they get that information. This means helping transportation leaders and freight managers in the public sector better understand how to work with journalists, both specialist and generalists, in a rapidly changing media landscape. Coverage of the rail industry will serve as a focal point for the discussion.

Panel Discussion (P24-21024)

Ari Ashe/Journal of Commerce Group, Dan Ronan/Transport Topics Publishing Group, Daniel Pallme/Tennessee Department of Transportation

2090

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 143C

Top Research in Airfield and Airspace Performance

Max Li, University of Michigan, Ann Arbor, presiding

Sponsored By Standing Committee on Airfield and Airspace Performance

A Macroscopic Fundamental Diagram for Airplane Traffic: Empirical Findings (TRBAM-24-02465)

Victor Knoop/Delft University of Technology, Joost Ellerbroek/Delft University of Technology, Mark Ter Heide/Delft University of Technology, Serge Hoogendoorn/Delft University of Technology

A Dynamic Priority-Based Path Planning Method for Support Vehicles in the Apron Area to Avoid Conflicts (TRBAM-24-02617)

Danwen Bao/Nanjing University of Aeronautics and Astronautics, Xinyu Yao/Nanjing University of Aeronautics and Astronautics, Zhuo Chen/Nanjing University of Aeronautics and Astronautics, Jiayi Zhou/Nanjing University of Aeronautics and Astronautics

Quasi-Stochastic Departure Metering Model Considering Non-Deterministic Taxi Time, Standard Instrument Departure Track Time and a New Delay Conflict Relationship (TRBAM-24-06108)

Aitichya Chandra/Indian Institute of Science, Bangalore, Nipun Choubey/Indian Institute of Science, Bangalore, Ashish Verma/Indian Institute of Science, Bangalore, KP Sooraj/Indian Institute of Science, Bangalore

Optimizing Slack Times for Connecting Flights at an Airport Hub (TRBAM-24-03483)

Mei Xiao/Chang'an University, Steven Chien/Chang'an University, Ching-Jung Ting/Chang'an University, Liang Zhang/Chang'an University

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 143AB

The 2030 Aviation Ecosystem: Embracing Vehicle Technology from Uncrewed Aircraft Systems to Commercial Space

Yazan Safadi, T-SMART, Technion, presiding

Sponsored By Standing Committee on New Users of Shared Airspace, Standing Committee on Aviation Safety, Security and Emergency Management

One hundred twenty years after the Wright brothers' first flight, today's aviation ecosystem is rapidly evolving with new concepts and innovative technologies. This session aims to uncover the challenges and opportunities that lie ahead, focusing on new aircraft designs, airport development, airspace management, and concepts for enabling air mobility. Our panel of experts will discuss the future of aviation operations by connecting policymakers, practitioners, and researchers. This session will delve into core strategies, groundbreaking technologies, and essential infrastructure required to support the next era of air mobility.

Ensuring Multimodal Mobility with AAM (P24-20592)

Laura Chase/ITS America

Federal Aviation Administration Perspective (P24-20594)

Steve Bradford/Federal Aviation Administration (FAA)

Implementing AAM Capability (P24-21527)

Michael Romanowski/Archer

How Open are Our Skies? Re-exploring the Airspace for Revitalizing Air Mobility (P24-20593)

Vishwanath Bulusu/Crown Consulting Inc., NASA Ames Research Center

Monday, 10:15 a.m. - 12:00 p.m., Convention Center, 144AB

Current Research in Ports and Channels

Mihalis Golias, University of Memphis, presiding

Sponsored By Standing Committee on Ports and Channels

Development of Unified Real-Time Risk Detection Algorithm for Port Equipment and Workers (TRBAM-24-03406)

Hojae Kim/Hanyang University, Seung-oh Son/Hanyang University, Hyeonseo Kim/Hanyang University, Sungjun Lee/Hanyang University, Donghee Oh/Hanyang University, Juneyoung Park/Hanyang University

The Berth Allocation Problem in Inland Waterway Terminals (TRBAM-24-03589)

Adnan Pasha/Loughborough University, Jiyin Liu/Loughborough University, Rajat Rastogi/Loughborough University

Ranking Port Impact for Incoming Tropical Cyclones: A Recommendation Algorithm (TRBAM-24-04937)

Zihao Li/Texas A&M University, College Station, Yunlong Zhang/Texas A&M University, College Station, Xiubin Wang/Texas A&M University, College Station

The Role of Public-Private Partnerships in the Transition of the Colombo Port to a Landlord Port Model (TRBAM-24-00827)

Tian Podges/World Bank, Waruna Rajapaksa/World Bank, Hua Tan/World Bank

Short-Term Forecasting of Vessel Movements at the Port of Amsterdam: A Machine Learning Approach Utilizing Global Market Indicators (TRBAM-24-02488)

Furqan Khalil Syed/Massachusetts Institute of Technology, Elenna Dugundji/Massachusetts Institute of Technology, Thomas Koch/Massachusetts Institute of Technology, Francisco Calero/Massachusetts Institute of Technology, Kyle O'Brien/Massachusetts Institute of Technology

2093



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Ballroom A

U.S. Department of Transportation: Achieving Vision Zero: Advances in Roadway Safety

Polly Trottenberg, U.S. Department of Transportation Office of the Under Secretary for Policy, presiding
Sponsored By Executive Committee

U.S. Department of Transportation (USDOT), tribal, state, and local officials will share advances and innovations in their work to achieve Vision Zero (zero traffic deaths). The session will provide a high-level overview and progress report of USDOT's National Roadway Safety Strategy (NRSS), the five-pronged approach—including safer people, safer vehicles, safer speeds, safer roads, and post-crash care, to work towards a goal of zero fatalities. Panelists will discuss how they are leveraging research to implement roadway safety policies that are saving lives in their communities.

Panel Discussion (P24-21415)

Sophie Shulman/National Highway Traffic Safety Administration (NHTSA), Robert Hampshire/U.S. Department of Transportation, James Hovland/Mayor of Edina, MN, Carlos Braceras/Utah Department of Transportation, Leah Shahum/Vision Zero Network

2094



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Human Factors of Vehicles: Connected and Automated Vehicles and Intelligent Systems

Siby Samuel, University of Waterloo, presiding
Azadeh Dinparastdjadid, Waymo, presiding
Sponsored By Standing Committee on Human Factors of Vehicles

Functional Data Analysis of Human Drivers' Car-Following Behaviors in the Mixed Traffic of Human-Driven Vehicles and Autonomous Vehicles (TRBAM-24-00073) - B708

Yujin Park/University of Windsor, Chris Lee/University of Windsor, Eunsik Kim/University of Windsor, Jae Keun Yoo/University of Windsor, Kyongwon Kim/University of Windsor

Assessing Discretionary Lane-Changing Decisions in a Connected Environment: A Driving Simulator Study with Advisory Messages (TRBAM-24-00295) - B709

Agustin Guerra/University of Florida, Mohamadamin Asgharzadeh/University of Florida, Alexandra Kondyli/University of Florida

Investigating the Impacts of Connected Vehicles on Driving Aggressiveness and Situational Awareness in Highway Crash Scenarios: A Driving Simulator Study (TRBAM-24-00490) - B711

Abdalziz Alruwaili/Old Dominion University, Kun Xie/Old Dominion University

Characterizing Clusters of Road Users Based on Quality of and Confidence in Mental Models of Adaptive Cruise Control and Lane Keeping Assist (TRBAM-24-00511) - B710

Justin Mason/University of Iowa, Cher Carney/University of Iowa, John Gaspar/University of Iowa, Alicia Romo/University of Iowa, Woon Kim/University of Iowa, William Horrey/University of Iowa

Exploring the Impact of Connected Vehicles on Driving Behaviors and Safety Outcomes in Diverse Weather Conditions (TRBAM-24-00779) - B712

Kun Xie/Old Dominion University, Abdalziz Alruwaili/Old Dominion University

Exploring the Effectiveness of Human-Machine Interface Information on Take-Over Behavior During Co-Driving Control Transitions (TRBAM-24-01573) - B713

Zijun Du/Wuhan University of Technology, Nengchao Lyu/Wuhan University of Technology

Cognitive Workload Estimation in Conditionally Automated Vehicles Using Transformer Network Based on Physiological Signals (TRBAM-24-01898) - B714

Ange Wang/Hong Kong University of Science and Technology (Guangzhou), Jiyao Wang/Hong Kong University of Science and Technology (Guangzhou), Wenxin Shi/Hong Kong University of Science and Technology (Guangzhou), Dengbo He/Hong Kong University of Science and Technology (Guangzhou)

The Impact of Connected Vehicle Warning Interfaces on Driver Safety Behavior and Preference: A Driving Simulator-Based Study (TRBAM-24-02449) - B715

Adekunle Adebisi/University of Cincinnati, John Ash/University of Cincinnati

(continued)

Defining, Measuring, and Modeling Passenger's In-Vehicle Experience and Acceptance of Automated Vehicles (TRBAM-24-02708) - B716

Sina Nordhoff/Delft University of Technology, Neeraja Bhide/Delft University of Technology, Nanami Hashimoto/Delft University of Technology, Kazimierz Dokurno/Delft University of Technology, Chris van der Hoorn/Delft University of Technology, Sascha Hoogendoorn-Lanser/Delft University of Technology

An Intelligent Blind Spot Indicator System to Prevent Double Lane Merge Conflicts (TRBAM-24-02945) - B717

Amer Abughaida/Honda Research Institute USA, Inc., Laith Daman/Honda Research Institute USA, Inc., Miao Song/Honda Research Institute USA, Inc., Yaqiong Zhang/Honda Research Institute USA, Inc., Jackie Ayoub/Honda Research Institute USA, Inc.

Exploring Heavy-Duty Vehicle Drivers and Connected and Automated Vehicle Interaction in Mixed Traffic: A Two-Step Method Integrating Latent Profile Analysis and Multinomial Logit Model (TRBAM-24-03136) - B718

Miao Wang/Beijing University of Technology, Dewen Kong/Beijing University of Technology, Lishan Sun/Beijing University of Technology, Kangyu Zhang/Beijing University of Technology, Qingqing Wang/Beijing University of Technology

Criteria, Causes, and Mitigation of Automated Vehicle Malfunction: Insights from a Mini-Focus Group Study (TRBAM-24-03203) - B719

Golnoosh Garakani/University of Michigan, Huizhong Guo/University of Michigan, Feng Zhou/University of Michigan, Brian Lin/University of Michigan, Shan Bao/University of Michigan

Public Perception of Autonomous Vehicles and Different External Human Machine Interface Designs: Findings from a National Survey (TRBAM-24-03212) - B720

Muhammad Sami Irfan/University of Alabama, Tuscaloosa, Mizanur Rahman/University of Alabama, Tuscaloosa, Abhay Lidbe/University of Alabama, Tuscaloosa, Jun Liu/University of Alabama, Tuscaloosa, Yangming Shi/University of Alabama, Tuscaloosa, Sheila Black/University of Alabama, Tuscaloosa

Impact of Driver Takeover Time in Level 3 Automated Driving: A Method for Evaluating Situational Awareness Based on Eye Movement Data (TRBAM-24-03580) - B725

Tengteng Liu/Beijing University of Technology, Haolin Chen/Beijing University of Technology, Ziyuan Zhao/Beijing University of Technology, Zhiyuan Gong/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Qiang Fu/Beijing University of Technology

Safe Time for Driver Takeover in Automated Driving: A Methods for Calculating Takeover Time Thresholds (TRBAM-24-03657) - B726

Haolin Chen/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Zhenlong Li/Beijing University of Technology, Haijian Li/Beijing University of Technology, Jianguo Gong/Beijing University of Technology, Qihong Wang/Beijing University of Technology

Development of Human-Like Automated Driving Following Rules: A Comparison Between China and Germany (TRBAM-24-03658) - B727

Zhanghe Li/Beijing University of Technology, Zhenlong Li/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Qiang Fu/Beijing University of Technology, Wenhao Ren/Beijing University of Technology

The Impact of the Predictive-Forward-Collision-Warning System on the Eco-Characteristics of Connected Mixed Platoon in Rapid Acceleration Event (TRBAM-24-03663) - B728

Qiang Fu/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Zhenlong Li/Beijing University of Technology, Wenhao Ren/Beijing University of Technology

Identifying Core Features in Enhancing In-Vehicle Alerts Using Machine Learning Models (TRBAM-24-05182) - B722

Jiawen Chen/Tongji University, Xuesong Wang/Tongji University, Xin Yi/Tongji University, Xiaowei Tang/Tongji University, Andrew Morris/Tongji University

Humans as Artificial Intelligence Mentors: Enhancing Deep Reinforcement Learning with Human Intervention for Safe and Efficient Autonomous Driving (TRBAM-24-05737) - B721

Zilin Huang/University of Wisconsin, Madison, Zihao Sheng/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison

Enhancing Quantification Methodology and Deep Learning-Based Prediction of Human-Vehicle Interaction-Induced Driver Distraction in Automated Driving (TRBAM-24-06026) - B723

Song Wang/University of Cincinnati, Zhixia Li/University of Cincinnati, Shang Jiang/University of Cincinnati, Wenjing Zhao/University of Cincinnati

Personalized Lane Departure Warning Based on Non-Stationary Crossformer and Kernel Density Estimation (TRBAM-24-06147) - B724

Heng Yin/Tongji University, Lishengsha Yue/Tongji University, Pei Li/Tongji University, Jian Sun/Tongji University

Navigating Uncertainty: An Approach to Integrate Human Probing Strategy into Autonomous Vehicle Decision Making (TRBAM-24-06166) - B731

Jialin Fan/Tongji University, Ying Ni/Tongji University, Donghu Zhao/Tongji University, Shihan Wang/Tongji University

(continued)

Evaluation of Artificial Intelligence–Based Feedback System for Reducing Sidewalk Riding by Shared E-Scooter Users (TRBAM-24-02702) - B730

Mohammad Mehdi Oshanreh/University of Washington, Seattle, Daniel Malarkey/University of Washington, Seattle, Don MacKenzie/University of Washington, Seattle

Analyze the Influence Mechanism of Cognitive Workload and Its Increment on Takeover Performance Based on Bayesian Network (TRBAM-24-03534) - B729

Haolin Chen/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Haijian Li/Beijing University of Technology, Zhenlong Li/Beijing University of Technology, Jianguo Gong/Beijing University of Technology, Qihong Wang/Beijing University of Technology

2095



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Human Factors of Vehicles: Road User Behavior

Jing Feng, North Carolina State University, presiding

Yi-Ching Lee, George Mason University, presiding

Sponsored By Standing Committee on Human Factors of Vehicles

Analyzing the Effect of Driving Aggression on Reckless Driving Maneuvers During Uncontrolled Pedestrian Crossings: A Study Based on Field-Observed Subjective Measures (TRBAM-24-00008) - B702

Anusha Adavikottu/Indian Institute of Technology, Bombay, Nagendra Velaga/Indian Institute of Technology, Bombay

Unveiling the Impact of Cognitive Distraction on Cyclists Psycho-Behavioral Responses in an Immersive Virtual Environment (TRBAM-24-00156) - B680

Xiang Guo/Villanova University, Arash Tavakoli/Villanova University, T. Donna Chen/Villanova University, Arsalan Heydarian/Villanova University

Modeling the Effect of Aggressive Driver Behavior on Steering Compensatory Behavior and Crash Risk During Lane-Changing Maneuvers (TRBAM-24-00287) - B703

Anusha Adavikottu/Indian Institute of Technology, Bombay, Nagendra Velaga/Indian Institute of Technology, Bombay

How Personality Traits Affect Speed Choice: Driving Simulator and Driver Behavior Questionnaire Study (TRBAM-24-00545) - B681

Mehdi zolali/University of Arkansas, Fayetteville, Babak Mirbaha/University of Arkansas, Fayetteville, Sarah Hernandez/University of Arkansas, Fayetteville

Investigating the Long-Term Effects of the Spring Transition to Daylight Saving Time on Driving Fatigue with a Simulator-Based Approach (TRBAM-24-00615) - B682

Federico Orsini/University of Padua, Esther Domenie/University of Padua, Gianluca Giusti/University of Padua, Lisa Zarantonello/University of Padua, Rodolfo Costa/University of Padua, Sara Montagnese/University of Padua, Riccardo Rossi/University of Padua

Assessing the Impact of Time Pressure on Stress Level Dynamics and Driving Behavior (TRBAM-24-00957) - B683

Arka Dey/Indian Institute of Technology, Roorkee, Sanhita Das/Indian Institute of Technology, Roorkee

Anger Expression Patterns While Driving in Nigeria: A Multi-Level Latent Class Analysis (TRBAM-24-01122) - B684

Muwaffaq Labbo/Southwest Jiaotong University, Xinguo Jiang/Southwest Jiaotong University, Jushang Ou/Southwest Jiaotong University, Wei Bai/Southwest Jiaotong University

Modeling of Lane-Change Execution Behavior on Expressway Using an Instrumented Vehicle: A Random Parameters Accelerated Failure Time Approach (TRBAM-24-01172) - B685

Akshay Gupta/Indian Institute of Technology, Roorkee, Pushpa Choudhary/Indian Institute of Technology, Roorkee, Manoranjan Parida/Indian Institute of Technology, Roorkee

Revealing Speeding Principle Based on Extended Theory of Planned Behavior (TRBAM-24-01783) - B686

Xianyong Liu/CCCC First Highway Consultants Co., Ltd, Jianbei Liu/CCCC First Highway Consultants Co., Ltd, Donghui Shan/CCCC First Highway Consultants Co., Ltd

Understanding Braking Judgment of Drivers in Rear End Crashes and Near Crashes (TRBAM-24-01806) - B687

Nipjyoti Bharadwaj/Indian Institute of Technology, Guwahati, Praveen Edara/Indian Institute of Technology, Guwahati, Carlos Sun/Indian Institute of Technology, Guwahati

A Novel Lane-Changing Prediction Framework for Mixed Driving Styles Based on Fuzzy Vehicle Trajectory Data (TRBAM-24-01976) - B688

Ruifeng Gu/Hong Kong Polytechnic University, Ye Li/Hong Kong Polytechnic University, N.N. Sze/Hong Kong Polytechnic University

(continued)

Toward the Identification of Optimal Safe Driving Patterns (TRBAM-24-02001) - B691

Dimitrios Tselentis/Delft University of Technology, Eleonora Papadimitriou/Delft University of Technology, Arturo Tejada/Delft University of Technology

Secondary Task's Effects on Gaze Durations: Evidence from a Driving Simulator Study (TRBAM-24-02062) - B690

Yasir Ali/University of South Florida, Vishal C. Kummetha/University of South Florida, Anshuman Sharma/University of South Florida, Alexandra Kondyli/University of South Florida

Analyzing Factors Contributing to Bus Driver Deceleration Behavior at Intersections Using Multi-Source Naturalistic Driving Data (TRBAM-24-02282) - B692

Yancheng Ling/South China University of Technology, Zhenliang Ma/South China University of Technology, Yuchen Song/South China University of Technology, Qi Zhang/South China University of Technology, Fan Zhang/South China University of Technology, Xiaoxiong Weng/South China University of Technology

Utilizing Explainable Artificial Intelligence and General Factorial Regression to Explore Single-Vehicle, Distraction-Involved Crashes (TRBAM-24-02705) - B693

Ahmed Hasan/Rowan University, Md. Arifuzzaman Nayeem/Rowan University, Mohammad Jalayer/Rowan University

Modeling and Analysis of Risky Lane-Changing Behavior Recognition Based on LightGBM (TRBAM-24-03249) - B695

Lingzhi Cheng/Tongji University, Yichuan Peng/Tongji University, Yuming Jiang/Tongji University

A Game Theory-Based Approach for Modeling Discretionary Lane-Changing Behavior with Loss Aversion (TRBAM-24-03400) - B696

Bingtong Wang/Southeast University, Shunchao Wang/Southeast University, Meng Li/Southeast University, Jingfeng Ma/Southeast University, Zhibin Li/Southeast University, Tony Qiu/Southeast University

Modeling Distracted Driving Behavior Considering Cognitive-Physical Constraints (TRBAM-24-03456) - B697

Yixin Zhu/Tongji University, Jiading, Lishengsha Yue/Tongji University, Jiading, Qunli Zhang/Tongji University, Jiading, Jian Sun/Tongji University, Jiading

A Review of the Impacts of Human Factors on Cycling: Perceptions, Workload, and Behavior (TRBAM-24-03535) - B698

Karim Habib/University of New Mexico, Lisa Losada Rojas/University of New Mexico, Nicholas Ferenchak/University of New Mexico

Text and Voice Message Distraction Detection: A Machine Learning Approach Using Vehicle Trajectory Data (TRBAM-24-03582) - B699

Abolfazl Taherpour/Morgan State University, Parisa Masoumi/Morgan State University, Alireza Ansariyar/Morgan State University, Di Yang/Morgan State University, Samira Ahangari/Morgan State University, Mansoureh Jeihani/Morgan State University

Spatial Construction of Vehicle-Following Model Based on Spatial Effects of Large Vehicles Compression (TRBAM-24-03859) - B700

Lanfang Zhang/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Kai Gong/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Xinhe Yin/Key Laboratory of Road and Traffic Engineering of the Ministry of Education

Car-Following Behavior Modeling with Embedded Local Multi-Vehicle Influence Mechanism (TRBAM-24-03938) - B701

Genze Li/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Lanfang Zhang/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Bo Yu/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Shuli Wang/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Tingyu Liu/Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Yating Wu/Key Laboratory of Road and Traffic Engineering of the Ministry of Education

A Hazard-Based Duration Model to Quantify the Impact of Work-Related Distraction on Taxi Drivers' Safety Performance: A Driving Simulator Study (TRBAM-24-04024) - B689

Shi Ye/Korea Advanced Institute of Science and Technology, Tiantian CHEN/Korea Advanced Institute of Science and Technology, Oscar Oviedo-Trespalacios/Korea Advanced Institute of Science and Technology, N.N. Sze/Korea Advanced Institute of Science and Technology

Identifying Unique Segments of Driver-Centered Contributing Factors in Injury-Related Crashes in Alabama (TRBAM-24-05283) - B705

Emmanuel Adanu/University of Alabama, Tuscaloosa, Sunday Okafor/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

The Impact of Cell Phone on Distracted Driver's Injury Severity: An Empirical Assessment of Distracted Driving Crashes Comparing States with and Without a Cell Phone Ban (TRBAM-24-05443) - B704

Mouyid Islam/Federal Highway Administration (FHWA), Niloufar Shirani/Federal Highway Administration (FHWA)

(continued)

Do Electric Vehicles Induce More Motion Sickness Than Fuel Vehicles?: A Survey Study in China (TRBAM-24-05690) - B707

Weiyin Xie/Hong Kong University of Science and Technology (Guangzhou), Chunxi Huang/Hong Kong University of Science and Technology (Guangzhou), Jiyao Wang/Hong Kong University of Science and Technology (Guangzhou), Dengbo He/Hong Kong University of Science and Technology (Guangzhou)

Factors Associated with Driver Distraction: Influence of Risk Taking, Risk Perception, and Crash History (TRBAM-24-05955) - B706

Asal Mehditabrizi/University of Maryland, Kayvan Aghabayk/University of Maryland, Seyed Samerei/University of Maryland, Saeed Saleh Namadi/University of Maryland, Amanda Stephens/University of Maryland

2096



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Safety Performance and Analysis

Ida Van Schalkwyk, Washington State Department of Transportation, presiding

Sponsored By Standing Committee on Safety Performance and Analysis

Effects of Road Geometric Formation on Traffic Crashes in the European Union (TRBAM-24-00017) - B732

Debela Jima/Budapest University of Technology and Economics, Tibor Sipos/Budapest University of Technology and Economics

Assessing the Safety Performance of Ridehailing Services and Taxis: A Multivariate Spatial Approach with Exposure Uncertainty (TRBAM-24-00486) - B733

Guocong Zhai/Old Dominion University, Kun Xie/Old Dominion University, Hong Yang/Old Dominion University, Di Yang/Old Dominion University

Enhancing Safety Prediction for Simple and Spiral Horizontal Curves: A Novel Model Incorporating Road Surface Friction Through Genetic Algorithm (TRBAM-24-00647) - B734

Amir Saman Abdollahzadeh Nasiri/Islamic Azad University, South Tehran Branch, Ali Abdi Kordani/Islamic Azad University, South Tehran Branch, Omid Rahmani/Islamic Azad University, South Tehran Branch, Eazaz Sadeghvaziri/Islamic Azad University, South Tehran Branch

Electric Vehicles Versus Internal Combustion Engine Vehicles: A Comparative Study of Non-Motorist Crash Injury Severity (TRBAM-24-00784) - B742

Jiahe Ling/University of Wisconsin, Madison, Xiaodong Qian/University of Wisconsin, Madison, Konstantina Gkritza/University of Wisconsin, Madison

Development of Calibration Functions for Freeway Ramp Terminal Safety Performance Functions in Virginia (TRBAM-24-00803) - B735

Justice Appiah/Virginia Transportation Research Council

A Safety Evaluation of Dual Left Turn Lane Installations in North Carolina (TRBAM-24-00814) - B736

Tim Nye/North Carolina Department of Transportation, Carrie Simpson/North Carolina Department of Transportation

A Pilot Application of the Sliding Window Screening Method on Virginia Roadways (TRBAM-24-00900) - B743

Chien-Lun Lan/Virginia Transportation Research Council, Hyun Cho/Virginia Transportation Research Council

Identifying the Threshold Discrepancy of Rear-End Conflicts Under Clear and Rainy Weather Conditions Using Trajectory Data (TRBAM-24-01074) - B737

Qianqian Jin/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Zubayer Islam/University of Central Florida, Jorge Ugan/University of Central Florida, Ou Zheng/University of Central Florida

Multi-Type Traffic Conflict Identification at Signalized Intersection Based on LiDAR Point Cloud (TRBAM-24-01112) - B744

Lai Zheng/Harbin Institute of Technology, Shuyu Fan/Harbin Institute of Technology, Shuanghu Ma/Harbin Institute of Technology, Hansheng Jiao/Harbin Institute of Technology

A Hybrid of Machine Learning and Econometric Model to Estimate Pedestrian Crash Risks by Applying Artificial Intelligence-Based Video Analytics (TRBAM-24-01190) - B745

Fizza Hussain/Queensland University of Technology, Yasir Ali/Queensland University of Technology, Yuefeng Li/Queensland University of Technology, Md. Mazharul Haque/Queensland University of Technology

Exploring the Traffic Flow Parameter Optimization Method of Freeway Based on Real-Time Crash Prediction Model and Interaction of Crash Influencing Variables (TRBAM-24-01282) - B747

Yiran Shao/Tongji University, Junhua Wang/Tongji University, Ting Fu/Tongji University, Qiangqiang Shangguan/Tongji University, Hao Song/Tongji University

(continued)

Thresholds and Contributing Factors for Rear-End Traffic Conflicts at Signalized Intersections Under Mixed Traffic Flow Conditions (TRBAM-24-01303) - B748

Shao-Fu Li/National Yang Ming Chiao Tung University, Shou-Ren Hu/National Yang Ming Chiao Tung University

How Good Are Deep Learning Methods for Automated Road Safety Analysis Using Video Data?: An Experimental Study (TRBAM-24-01372) - B749

Qingwu Liu/Ecole Polytechnique de Montreal, Nicolas Saunier/Ecole Polytechnique de Montreal, Guillaume-Alexandre Bilodeau/Ecole Polytechnique de Montreal

Injury Severity Analysis of Time-of-Day Fluctuations and Temporal Volatility in Reverse Sideswipe Collisions: A Random Parameter Model with Heterogeneous Means and Heteroscedastic Variances (TRBAM-24-01379) - B752

Chengying Hua/University of North Carolina, Charlotte, Wei Fan/University of North Carolina, Charlotte

Spatial Ensemble Distillation Learning for Large-Scale, Real-Time Crash Prediction (TRBAM-24-01380) - B738

Md. Rakibul Islam/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Dongdong

Wang/University of Central Florida, Zubayer Islam/University of Central Florida

Developing Safety Performance Functions and Crash Modification Factors for Skid Resistance (TRBAM-24-01384) - B500

Sailesh Acharya/Utah State University, Atul Subedi/Utah State University, Michelle Mekker/Utah State University, Patrick Singleton/Utah State University

Evaluating the Safety Effectiveness of Sinusoidal Rumble Strips on Lane Departure Crashes Prevention (TRBAM-24-01389) - B754

Shubhankar Chintamani Shindgikar/University of South Florida, Cong Chen/University of South Florida, Pei-Sung

Lin/University of South Florida, Yaye Keita/University of South Florida, Elzbieta Bialkowska-Jelinska/University of South Florida

Valuing Large Animal Crashes and Calculating Benefits and Costs for Safety Improvement Projects (TRBAM-24-02057) - B762

Bridget Donaldson/Virginia Transportation Research Council, James Gillespie/Virginia Transportation Research Council, Rebecca Danese/Virginia Transportation Research Council

Implementing High Friction Surface Treatment to Improve Intersection Safety (TRBAM-24-03697) - B755

Huiqing Lyu/University of South Florida, Zhenyu Wang/University of South Florida, Pei-Sung Lin/University of South

Florida, Qing Lu/University of South Florida, Ping Hsu/University of South Florida, Emmeth Duran/University of South Florida

Complete Streets Treatment Combinations and Safety Analysis Needs Assessment (TRBAM-24-03932) - B757

Michael Dunn/VHB, Angelina Caggiano/VHB, Kristin Kersavage/VHB, Richard Porter/VHB, In-Kyu Lim/VHB, Seyedehsan Dadvar/VHB, Michael Dimaiuta/VHB

Safety Evaluation of Conversion from a Conventional Signalized Intersection to a Continuous Flow Intersection (TRBAM-24-04338) - B763

Taha Saleem/UNC Highway Safety Research Center, Christopher Cunningham/UNC Highway Safety Research Center,

Raghavan Srinivasan/UNC Highway Safety Research Center, Taehun Lee/UNC Highway Safety Research Center

A Novel Integrated Approach to Modeling and Predicting Crash Frequency by Crash Event State (TRBAM-24-04392) - B765

Angela Haddad/University of Texas, Austin, Aupal Mondal/University of Texas, Austin, Naveen Eluru/University of Texas, Austin, Chandra Bhat/University of Texas, Austin

What Should We Notice During the Crash Occurrence?: An Investigation from Crash Narratives by Interpretive Machine Learning Methods (TRBAM-24-04420) - B767

Hanchu Zhou/Central South University, Fangrong Chang/Central South University

Estimating Potential Crash Reduction for Friction Enhancement Treatments (TRBAM-24-04447) - B768

Ross McCarthy/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute, Edgar de León Izeppi/Virginia Polytechnic Institute

Comparison of Safety Effect Estimates from Propensity Scores Potential Outcomes Framework and Empirical Bayes Before-After Method: A Case Study of Adaptive Traffic Signal Control (TRBAM-24-04450) - B758

Pengxiang Zhang/Pennsylvania State University, Asif Mahmud/Pennsylvania State University, Vikash

Gayah/Pennsylvania State University, Eric Donnell/Pennsylvania State University

Enhancing Daily Crash Count Prediction Using Deep Learning: Window Size Selection and Seasonality Predictor Integration (TRBAM-24-04454) - B769

wen cheng/California State Polytechnic University, Pomona, Kirill Rogovoy/California State Polytechnic University,

Pomona, Seyedbamdad Sharifilierdy/California State Polytechnic University, Pomona, Omar Mora/California State

Polytechnic University, Pomona, Rosalyn Lu/California State Polytechnic University, Pomona, Yichi Cheng/California State Polytechnic University, Pomona

(continued)

Safety Effectiveness of High-Friction Surface Treatment at Signalized Intersections in British Columbia (TRBAM-24-04881) - B772

Mohamed Essa/British Columbia Ministry of Transportation and Infrastructure, Joy Sengupta/British Columbia Ministry of Transportation and Infrastructure, Emmanuel Takyi/British Columbia Ministry of Transportation and Infrastructure

Enhancing Urban Traffic Safety Estimations and Spatial Pattern Analysis Using Extensive Near-Miss Data: A New York City Case Study (TRBAM-24-04985) - B773

Chuan Xu/New York University, Jingqin Gao/New York University, Fan Zuo/New York University, Kaan Ozbay/New York University

Macro-Level Safety Assessment and Contributing Factors Analysis of Non-Motorized Vehicles Considering Traffic Crashes and Crash-Involved Riders (TRBAM-24-05001) - B739

Xueyu Zhang/Tongji University, Xuesong Wang/Tongji University, Mohamed Abdel-Aty/Tongji University, Zhicheng Dai/Tongji University, Lixia Lei/Tongji University

Injury Severity of Crashes Involving Golf Carts: A Case Study of The Villages, Florida (TRBAM-24-05398) - B774

Abdallah Kinero/Florida International University, Kabhabhela Bukuru/Florida International University, Enock Mwambekeko/Florida International University, Thobias Sando/Florida International University, Priyanka Alluri/Florida International University

Severity Analysis of Secondary Crashes on High-Speed Roadways: Pattern Recognition from Traditional Crash Data Using Association Rule Mining (TRBAM-24-05449) - B775

Md Mahmud Hossain/Auburn University, Mohammad Reza Abbaszadeh Lima/Auburn University, Huaguo Zhou/Auburn University

Are Wider Lanes Safer?: Evidence from New York City (TRBAM-24-05493) - B777

Shima Hamidi/Johns Hopkins University, Ebrahim Azimi/Johns Hopkins University

Examining Encroachment-Related Work Zone Crash Contributing Factors Using Probabilistic Graphical Method (TRBAM-24-05496) - B778

Subasish Das/Texas State University, M. Ashifur Rahman/Texas State University

Analyzing the Suitability of Vehicle Telematics Data as Surrogate Safety Measure for Short-Term Crashes (TRBAM-24-05501) - B779

Manmohan Joshi/University of Connecticut, Anshu Bamney/University of Connecticut, Kai Wang/University of Connecticut, Shanshan Zhao/University of Connecticut, John Ivan/University of Connecticut, Eric Jackson/University of Connecticut

Estimating the Expected Change in Safety for a Potential Application of Three ITS Treatments (TRBAM-24-04686) - B780

Bhagwant Persaud/Toronto Metropolitan University, Raghavan Srinivasan/Toronto Metropolitan University, Vikash Gayah/Toronto Metropolitan University, Kristin Kersavage/Toronto Metropolitan University, Taha Saleem/Toronto Metropolitan University, Shauna Hallmark/Toronto Metropolitan University, Cameron Mohammadi/Toronto Metropolitan University

Predictive Analytics for Road Traffic Accidents: Exploring Severity Through Conformal Prediction (TRBAM-24-04807) - B781

Mohamed Eldafrawi/University of Rome "La Sapienza", Ken Koshy Varghese/University of Rome "La Sapienza", Marzieh Afsari/University of Rome "La Sapienza", Mahnaz Babapourdijojin/University of Rome "La Sapienza", Guido Gentile/University of Rome "La Sapienza"

A Duration-Based Model for Crash Occurrence and Severity Prediction: Trade-Offs and Stability Analysis (TRBAM-24-04843) - B782

Diwas Thapa/University of Memphis, Sabyasachee Mishra/University of Memphis, Nagendra Velaga/University of Memphis, Gopal Patil/University of Memphis

Comparing Lane-Changing Behavior and Safety During Daytime and Evening Using Vehicle Trajectory on Expressway (TRBAM-24-05144) - B783

Qingyun Li/Southeast University, Pan Liu/Southeast University, Kequan Chen/Southeast University, YUXUAN WANG/Southeast University

A New Rear-End Crash Risk Indicator for Traffic Oscillation (TRBAM-24-05148) - B784

YUXUAN WANG/Southeast University, Pan Liu/Southeast University, Chengcheng Xu/Southeast University, Zhibin Li/Southeast University, Ke quan Chen/Southeast University

Evaluating the Predictability of Surrogate Safety Measures Using Real-World Crash Trajectory Data (TRBAM-24-05149) - B785

YUXUAN WANG/Southeast University, Pan Liu/Southeast University, Kequan Chen/Southeast University, Chengcheng Xu/Southeast University

(continued)

Assessing and Guiding Conflict Techniques for Real-Time Crash Detection Using Extreme Value Theory and Real-World Crash Trajectories (TRBAM-24-05150) - B786

YUXUAN WANG/Southeast University, Pan Liu/Southeast University, Chengcheng Xu/Southeast University, Ke quan Chen/Southeast University

A String Stability-Based Safety Assessment for Rear-End Conflict in a Platoon (TRBAM-24-05298) - B789

Weilin Ren/Southeast University, Chengcheng Xu/Southeast University, Yongcheng Shao/Southeast University, Changshuai Wang/Southeast University, Hao Tong/Southeast University, Chang Peng/Southeast University, Weilin Ren/Southeast University

Examining the Interplay of Factors in Rollover Crashes (TRBAM-24-05716) - B788

Subasish Das/Texas State University, Juan Cruz-Gonzalez/Texas State University, Catalina Gonzalez/Texas State University

Explanatory Prediction of Injury Severity in Traffic Incidents: A Hybrid Approach with Latent Class Clustering and Causal Bayesian Network Model (TRBAM-24-04857) - B790

Jing Li/McMaster University, Shuoyan Xu/McMaster University, Jingqiu Guo/McMaster University, Hao Yang/McMaster University

The Validity and Application of Time-to-Collision Based on Real-World Crash Trajectory Data (TRBAM-24-05133) - B787

YUXUAN WANG/Southeast University, Pan Liu/Southeast University, Chengcheng Xu/Southeast University, Qingyun Li/Southeast University

Incorporating Driving Behavior Metrics Derived from Naturalistic Driving Data into Macroscopic Safety Modeling (TRBAM-24-05183) - B764

Juan Medina/University of Utah, Raghavan Srinivasan/University of Utah, Taha Saleem/University of Utah, Bo Lan/University of Utah

Evaluating the Capability of a Short Segment Peak Search Approach to Detect High Crash Locations (TRBAM-24-05198) - B791

Adika Iqbal/AtkinsRéalis, Wayne Sarasua/AtkinsRéalis, Afshin Famili/AtkinsRéalis, Jennifer Ogle/AtkinsRéalis

Use of Integrated Data Sets to Identify High-Risk and Life-Threatening Driving Violations (TRBAM-24-05849) - B792

Wan-hui Chen/Tamkang University, Kun-Feng Wu/Tamkang University, Paul Jovanis/Tamkang University, Su-Hsuan Wu/Tamkang University, Yu-Min Yang/Tamkang University

Injury Severity Analysis of Crashes Involving Defective Vehicles and Accounting for the Underlying Socioeconomic Mediators (TRBAM-24-05963) - B793

Emmanuel Adanu/Alabama Transportation Institute, Richard Dzinyela/Alabama Transportation Institute, Sunday Okafor/Alabama Transportation Institute, Steven Jones/Alabama Transportation Institute

Analysis of Land Use and Points of Interest Contributing to Traffic Accidents Around Intersections (TRBAM-24-06143) - B794

Satoshi Nakao/Kyoto University, Koshi Sawada/Kyoto University, Andreas Keler/Kyoto University, Jan-Dirk Schmoecker/Kyoto University

Rear-End Conflicts Prediction based on Vehicle and Roadside Data (TRBAM-24-06302) - B795

Yuhe Bai/Tongji University, Ling Wang/Tongji University, Zicheng Su/Tongji University, Yingying Xing/Tongji University, Wanqing Ma/Tongji University

Exploring Contributory Factors to Accident Severity Based on XGBoost Approach: An Application Case Analysis in Tomei Expressway, Japan (TRBAM-24-06465) - B796

LIU Xingwei/Nippon Expressway Research Institute, Jian XING/Nippon Expressway Research Institute, Kuniaki SASAKI/Nippon Expressway Research Institute



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Road Scholars: New Research in Travel Time, Speed, and Reliability Data

Mei Chen, Kentucky Transportation Center, presiding
 Sam Granato, Ohio Department of Transportation, presiding
 Anil Yazici, Stony Brook University, presiding
 Brian He, University of California, Los Angeles, presiding

Sponsored By Standing Committee on Urban Transportation Data and Information Systems, Standing Committee on Highway Traffic Monitoring, Joint Subcommittee on Travel Time Speed and Reliability (with ACP70)

This session covers the use, analysis, and estimation of travel time, speed, and reliability. Topics covered include methods to analyze causes of reliability; map matching; working with full or partial vehicle trajectories; accounting for the role of traffic control devices and variable posted speed limits; estimating “free-flow” speed: and impacts of COVID and weather.

Map Matching Method of Vehicle GPS Data in the Mixed Road Network Considering Speed Distribution (TRBAM-24-05586) - A250

TanXing Xue/Tongji University, Bing Wu/Tongji University, Yanli Wang/Tongji University

An Analysis of Traffic Speed Variability Using Crowdsourced Pervasive Traffic Data (TRBAM-24-05775) - A243

V. A. Bharat Kumar Anna/IIT Delhi: Indian Institute of Technology Delhi, Sai Chand/IIT Delhi: Indian Institute of Technology Delhi

Advanced Radar Sensing–Based Investigation of Stop Sign Spacing’s Impact on Vehicle Speeds Through Speed Trajectory Analysis (TRBAM-24-05915) - A242

Dong Nian/University of Cincinnati, Zhixia Li/University of Cincinnati, Yingfan Gu/University of Cincinnati, Robert Kluger/University of Cincinnati, Heng Wei/University of Cincinnati, Wei Lin/University of Cincinnati

Analysing Weather-Impacted Travel Time Reliability using Extreme Value Theory in Ireland (TRBAM-24-06463) - A233

Dhivya Bharathi/University of Dublin, Maria Nogal/University of Dublin, Bidisha Ghosh/University of Dublin

Cycle-Level and Movement-Level Detection of Nonrecurrent Congestion in an Urban Road Network Under Spatially Sparse Trajectory Data Environments (TRBAM-24-01602) - A252

Yuxuan Sun/Tongji University, Chunhui Yu/Tongji University, Wanjing Ma/Tongji University

Vehicle Trajectory Reconstruction Considering Heterogeneity of Route Choice Behavior Based on Automatic License Plate Recognition Data (TRBAM-24-03169) - A253

Mingjuan Zhao/Southwest Jiaotong University, Pengyao Ye/Southwest Jiaotong University

An Empirical Investigation of Driver Speed Compliance Following Lane-Level Variable Speed Limit Based on Real Site Experiment (TRBAM-24-03185) - A251

Hao Song/Tongji University, Junhua Wang/Tongji University, Ting Fu/Tongji University, Yiran Shao/Tongji University

Exploring COVID-19 Policy Impacts on Traffic Flow and Speed: An Intra- and Post-Pandemic Analysis (TRBAM-24-04020) - A263

wen cheng/California State Polytechnic University, Pomona, Kirill Rogovoy/California State Polytechnic University, Pomona, Seyedbamdad Sharifillierdy/California State Polytechnic University, Pomona, Yongping Zhang/California State Polytechnic University, Pomona, Rosalyn Lu/California State Polytechnic University, Pomona, Yichi Cheng/California State Polytechnic University, Pomona

Impact of Free Flow Speed Estimation Method on Project Prioritization (TRBAM-24-04574) - A262

Chien-Lun Lan/Virginia Transportation Research Council, Mo Zhao/Virginia Transportation Research Council, Drew Melusen/Virginia Transportation Research Council



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Applications and Innovations in Urban Travel Data

Krishnan Viswanathan, Whitman, Requardt and Associates, LLP, presiding

Clotilde Minster, The World Bank, presiding

Charlotte Frei, Teton County, presiding

Sponsored By Standing Committee on Urban Transportation Data and Information Systems

The variety of data sources available to capture urban travel characteristics is increasing, and innovative methods are being developed to utilize this data. This session presents papers that use urban travel data to examine a broad range of topics, including probe-based volume data, multimodal transportation data, post-pandemic travel behavior, and location-based services data.

On the Distribution of Probe Traffic Volume Estimated from Its Footprints (TRBAM-24-00480) - A232

Kentaro Iio/Brahe, Gulshan Noorumar/Brahe, Dominique Lord/Brahe, Yunlong Zhang/Brahe

A Travel Behavior Guidance Method for Multimodal Transportation Networks Based on Travel Time Reliability (TRBAM-24-01958) - A240

Zhen Ma/Southwest Jiaotong University, Hao Huang/Southwest Jiaotong University, Weike Lu/Southwest Jiaotong University, Lan Liu/Southwest Jiaotong University

Evaluation of Spillover Effects for Public Transportation Network Change Using a Spatial Difference-in-Differences Approach (TRBAM-24-03737) - A241

Christos Gkartzonikas/University of Cyprus, Paraskevas Nikolaou/University of Cyprus, Loukas Dimitriou/University of Cyprus

The “New” New York City Normal: Travel Behavior Post-Pandemic (TRBAM-24-04503) - A231

Seth Contreras/New York City Department of Transportation, Mark Seaman/New York City Department of Transportation, Angela Bellisio/New York City Department of Transportation, Ruoran Lin/New York City Department of Transportation

Comparison of Home Detection Algorithms Using Smartphone GPS Data (TRBAM-24-05851) - A221

Rajat Verma/Purdue University, Shagun Mittal/Purdue University, Zengxiang Lei/Purdue University, Xiaowei Chen/Purdue University, Satish Ukkusuri/Purdue University

Identifying Functional Characteristics of Urban Clusters Through Travel Demand Analysis (TRBAM-24-06208) - A220

Sujin Lee/Korea Advanced Institute of Science and Technology (KAIST), Kitae Jang/Korea Advanced Institute of Science and Technology (KAIST)

How Does Cellular Vehicle-to-Everything Perform in Urban Environments?: Results from Real-World Empirical Experiments on Urban Arterials (TRBAM-24-04495) - A230

Pei Li/University of Wisconsin, Madison, Keshu Wu/University of Wisconsin, Madison, Yang Cheng/University of Wisconsin, Madison, Zilin Huang/University of Wisconsin, Madison, Rui Gan/University of Wisconsin, Madison, Steven Parker/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Innovations in Big Urban Data Applications

Patrick Coleman, AECOM, presiding

Vincent Bernardin, Caliper Corporation, presiding

Sponsored By Standing Committee on Urban Transportation Data and Information Systems, Subcommittee on Urban Big Data

How big urban data can be used to help in transportation planning is an ongoing challenge. This session includes a number of applications using big transportation data meeting that challenge. The topics for this session include connected vehicle trajectory data, vehicle dynamics, public transportation, and more.

Investigating the Relative Precision of Global Positioning System, Global System for Mobile Communications, and Call Detail Records Data for Inferring Spatio-Temporal Travel Trajectories (TRBAM-24-04986) - A223

Khatun E Zannat/University of Leeds, Charisma Choudhury/University of Leeds, Stephane Hess/University of Leeds, David Watling/University of Leeds

(continued)

Travel Time Estimation with Improved Neural Network (TRBAM-24-05408) - A222

Jiangyan Huang/Hong Kong Polytechnic University, Min Xu/Hong Kong Polytechnic University

Big Data Readiness for Urban Transport Planning in Latin American Cities (TRBAM-24-00542) - A210

Linda Ivarsson/World Bank, Aiga Stokenberga/World Bank, Juan Fulponi/World Bank

V2V4Real: A Real-World, Large-Scale Data Set for Vehicle-to-Vehicle Cooperative Perception (TRBAM-24-01529) - A201

Runsheng Xu/University of California, Los Angeles, Xin Xia/University of California, Los Angeles, Jinlong Li/University of California, Los Angeles, Hanzhao Li/University of California, Los Angeles, Shuo Zhang/University of California, Los Angeles, Zhengzhong Tu/University of California, Los Angeles, Zonglin Meng/University of California, Los Angeles, Hao Xiang/University of California, Los Angeles, Xiaoyu Dong/University of California, Los Angeles, Rui Song/University of California, Los Angeles, Hongkai Yu/University of California, Los Angeles, Bolei Zhou/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

When Missingness Meets Anomalies: A Tailored Low-Rank Tensor Completion Approach for Traffic Data Recovery (TRBAM-24-02203) - A211

Liyang Hu/Southeast University, Yuheng Jia/Southeast University, Weijie Chen/Southeast University, Dongjie Liu/Southeast University, Jianke Cheng/Southeast University, Zhirui Ye/Southeast University

Exploring the Usage Pattern of Ridehailing with Different Competitive and Cooperative Relationships Toward Bike and Ride (TRBAM-24-02226) - A200

Boqing Wang/Southeast University, Jiajun Li/Southeast University, Min Yang/Southeast University, Yucheng Wang/Southeast University, Xiaoyu Xue/Southeast University

Unified Framework for Multi-Contrastive Learning in Spatial-Temporal Traffic Forecasting (TRBAM-24-03046) - A212

Meng-ju Tsai/University of Washington, Chenxi Liu/University of Washington, Hao Yang/University of Washington, Xuan Jiang/University of Washington, Meixin Zhu/University of Washington, Yinhai Wang/University of Washington

Big Data Analytics for Network Level Travel Time Prediction with Hierarchical Long Short-Term Memory (TRBAM-24-03409) - A213

Tianya Zhang/University of Tennessee, Chattanooga

2100



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Census Data Time Series: Investigating Changes in Population, Households, and Behavior Over Time

Kathleen Yu, North Central Texas Council of Governments, presiding

Kyla Elzinga, American Association of State Highway and Transportation Officials, presiding

Michael Fontaine, Virginia Transportation Research Council, presiding

Sponsored By Standing Committee on Urban Transportation Data and Information Systems, Subcommittee on Census for Transportation Planning

This session examines how people have utilized Census data by itself or in combination with other data sources to understand how populations, households, or behaviors can be compared over time. This poster session will allow presenters to showcase analysis of Census data over different years, time periods, or decades on a local, regional, state, or national level.

Temporal Evolution of Travel Time Gap Between Public Transit and Personal Vehicle and Their Inequality: An Analysis Using Census Transportation Planning Program Data (P24-20229) - A203

Melrose Pan/Oak Ridge National Laboratory, Majbah Uddin/Oak Ridge National Laboratory

Analyzing Transit Accessibility Changes and Their Effects on Transit Ridership: A Case Study of Hamilton County, Ohio (2013–2019) (P24-20230) - A202

Ting Zuo/OKI Regional Council of Governments

Mobility Evolution in the United States: Evidence from Electric Vehicle Adoption (P24-20231) - A192

Shreejit Poudyal/Clarkson University, Prasanna Humagain/Metro Analytics, Ricardo Chahine/Purdue University, Konstantina Gkritza/Purdue University

Immigrant Travel Behavior in the United States: A Longitudinal Analysis of Sociodemographic and Geographic Variations (P24-20232) - A193

Nikhil Menon/Pennsylvania State University, Harrisburg, Sravani Vadlamani/San Jose State University, Lisa Losada Rojas/University of New Mexico

2101



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Providing Accessible Transit Everywhere

John Miller, Virginia Department of Transportation, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

This poster session highlights research on accessible transit.

Evaluating Intercity Rail Initiatives: Rapid Screening Models for the Kingdom of Saudi Arabia (TRBAM-24-00845) - A100

Bader Alhujailan/World Bank, Sultan Alkarbi/World Bank, Ali Alghanem/World Bank, Joanna Moody/World Bank, Robin Carruthers/World Bank, Muneeza Alam/World Bank

Short-Term Prediction of Individual Accessibility Considering the Regularity Difference of Transit Users' Travel Patterns (TRBAM-24-01682) - A121

Qihang Lu/Southeast University, Xiao Fu/Southeast University

A User-Centric, Multi-Criteria Evaluation of Mobility Solutions for Disabled Individuals in a Real Territorial Context (TRBAM-24-02424) - A110

Axel Le Dréau/VEDECOM: Institut VEDECOM, Jaâfar Berrada/VEDECOM: Institut VEDECOM, Rémy Le Boennec/VEDECOM: Institut VEDECOM

Competition for Access to Opportunities Between Modes: Multimodal Spatial Availability (TRBAM-24-02509) - A111

Anastasia Soukhov/McMaster University, Javier Tarrío-Ortiz/McMaster University, Julio Soria-Lara/McMaster University, Antonio Paez/McMaster University

Transit Deserts and First-Mile Interventions to Improve Access: A Case Study Based on Chicago (TRBAM-24-04359) - A112

Jin Jang/University of Illinois, Chicago, Nebiyu Tilahun/University of Illinois, Chicago, P.S. Sriraj/University of Illinois, Chicago

Development of a Market Model for Transit Services by Estimating Demand-Supply Interactions as Simultaneous Equations (TRBAM-24-04519) - A103

Filippos Alogdianakis/University of Cyprus, Loukas Dimitriou/University of Cyprus

Data-Driven Approach for Paratransit Service Performance Assessment and Coverage Analysis (TRBAM-24-05874) - A113

Arman Malekloo/University of Utah, Shouzheng Pan/University of Utah, Yirong Zhou/University of Utah, Nikola Markovic/University of Utah, Xiaoyue Liu/University of Utah

2102



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Understanding and Modeling Residential Development and the Communities They Foster

Hannah Twaddell, ICF, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

This session dives into understanding residential development models and their impacts.

Modeling Home Property Listings' Time-on-Market Duration and Listing Outcome Using Copula-Based Competing Risk Method (TRBAM-24-00896) - A163

Yicong Liu/University of Toronto, Saeed Shakib/University of Toronto, Eric Miller/University of Toronto, Khandker Habib/University of Toronto

Nonlinear Effects of Built Environments on Residential Relocation: Evidence from Beijing (TRBAM-24-01456) - A162

Yanyan Wang/Beijing University of Technology, Jianhui Lai/Beijing University of Technology, Yang Wang/Beijing University of Technology, Yue Qi/Beijing University of Technology, Lihua Huang/Beijing University of Technology

Microsimulating Residential Relocation Decisions Within an Integrated Urban Model and Testing for an Unprecedented Socioeconomic Shock (TRBAM-24-02681) - A173

Muntahith Orvin/University of British Columbia, Mahmudur Fatmi/University of British Columbia, Mohamad Khalil/University of British Columbia

(continued)

A Generative Design Tool for Designing Complete Communities (TRBAM-24-04366) - A172

Gonzalo Martínez Santos/University of Toronto, Sara Wagner, PE/University of Toronto, David Kossowsky/University of Toronto, Sara Diamond/University of Toronto, Matthew Roorda/University of Toronto

2103



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

New Transportation Planning Applications

Scott Thompson-Graves, Whitman Requardt and Associates, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

This session discusses the latest planning applications that help make informed decisions.

New Trends in Thoroughfare Planning (TRBAM-24-00163) - A120

Taylor Dinehart/Center for Urban Transportation Research at USF, Kristine Williams/Center for Urban Transportation Research at USF, Tia Boyd/Center for Urban Transportation Research at USF

Leveraging Big Data to Understand Women's Mobility in Buenos Aires (TRBAM-24-00750) - A123

Aiga Stokenberga/World Bank, Linda Ivarsson/World Bank, Juan Fulponi/World Bank, Karla Gonzalez/World Bank

How Does Multimodal Travel Enhance Tourist Attraction Accessibility?: A Refined Two-Step Floating

Catchment Area Method Using Multi-Source Data (TRBAM-24-01670) - A122

Yongqi Zhang/Southeast University, Xiao Fu/Southeast University, Zhaoyuan Yu/Southeast University, Shuli Luo/Southeast University

Do Vulnerable Road Users Support Their Living Cities as Autonomous Vehicle Proving Grounds?: Evidence from Pittsburgh (TRBAM-24-03354) - A130

Kexin Fang/Tongji University, Hong Lang/Tongji University, Zhen Chen/Tongji University, Yingying Xing/Tongji University, Jian Lu/Tongji University

How Does the Modifiable Areal Unit Problem Impact Accessibility Analyses?: The Case of Accessibility to Supermarkets in Montreal (TRBAM-24-04179) - A131

Jose Arturo Jasso Chavez/McGill University, Kevin Manaugh/McGill University

Exploring the Connections Among Urban Road Networks, Traffic Conditions, and Socioeconomic Performance: An Empirical Analysis of 36 Large Cities in China (TRBAM-24-04856) - A132

Yuntao Guo/Tongji University, Xi Feng/Tongji University, Xinghua Li/Tongji University, Jiawei Xue/Tongji University, Chao Yang/Tongji University

Trip Generation of Inter-Regional Travel in the United States (TRBAM-24-06048) - A133

Yang Li/University of Texas, Austin, Ming Zhang/University of Texas, Austin

Synthesizing Truck Tours from Trip Lists: A Simulation Optimization Approach (TRBAM-24-06050) - A140

Pedro Camargo/Outer Loop Consulting, Natalia Zuniga-Garcia/Outer Loop Consulting

Resource Planning for Long-Range Transportation Programs: A Case Study of the Northeast Corridor (TRBAM-24-06102) - A143

Manuel Ramos/Arup, Christopher Taylor/Arup, Thomas Wagner/Arup, Meg Pursley/Arup

Integrated Transport, Land-Use and Emission Modelling: Review of Existing Studies and Future Research Directions (TRBAM-24-06375) - A153

MD Jahedul Alam/Dalhousie University, Md Asif Hasan Anik/Dalhousie University, Muhammad Habib/Dalhousie University

2104



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Planning for Active Transportation

Marty Milkovits, Boston Region Metropolitan Planning Organization, presiding

Gregory Gaimo, WSP, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

This session takes a deeper dive into how to enhance active transportation.

Enhancing Walking Accessibility in Urban Transportation: A Comprehensive Analysis of Influencing Factors and Mechanisms (TRBAM-24-01501) - A141

Xueqi Ding/Southeast University, Liang Li/Southeast University, Yanjie Ji/Southeast University

(continued)

Complete Streets Design Evaluation Based on Speed Trajectory Analysis Using Connected Vehicle Data: A Case Study of Three Corridors in Nevada (TRBAM-24-02561) - A142

Ericka Mora Campos/University of Nevada, Reno, Seri Park/University of Nevada, Reno, Zong Tian/University of Nevada, Reno

Understanding the Factors Affecting People's Awareness of New Active Transportation Projects: Réseau Express Vélo Case Study (TRBAM-24-02801) - A150

Sarangji Jayaram/University of Saskatchewan, Wan Ng/University of Saskatchewan, Jessica Lam/University of Saskatchewan, Ehab Diab/University of Saskatchewan

Optimizing Shared Use Paths: Insights into User Preferences for Effective Planning and Design (TRBAM-24-05012) - A101

Boniphace Kutela/Texas A&M Transportation Institute, Norran Novat/Texas A&M Transportation Institute, Hellen Shita/Texas A&M Transportation Institute, Norris Novat/Texas A&M Transportation Institute, Panick Kalambay/Texas A&M Transportation Institute, Subasish Das/Texas A&M Transportation Institute

Developing an Active Transportation Assessment Scorecard for Small and Medium-Sized Community Roadways (TRBAM-24-05024) - A151

Corinne Arcenal/Auburn University, Jeffrey LaMondia/Auburn University

2105



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

New Forms of Shared Mobility

Christeen Pusch, Texas Department of Transportation, presiding

Gregory Giaimo, WSP, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

This poster session showcases research on new forms of shared mobility.

Which Commercial Fleet Vehicles Are More Likely to Be Replaced by Electric Vehicles, Ridehailing, and Delivery Services? (TRBAM-24-00863) - A182

Konstadinos Goulias/University of California, Santa Barbara, Hui Shi/University of California, Santa Barbara

Enabling Dynamic Ridesharing in Shared Autonomous Vehicle Fleets: A Study of 374 Small And Medium-Sized Urban Areas (TRBAM-24-02630) - A183

Jun Liu/University of Alabama, Javier Pena-Bastidas/University of Alabama, Zihe Zhang/University of Alabama, Steven Jones/University of Alabama

A Regression Content Analysis Approach to Assess Public Satisfaction with Shared Mobility Measures Against the COVID-19 Pandemic (TRBAM-24-04590) - A102

Boniphace Kutela/Texas A&M Transportation Institute, Nikhil Menon/Texas A&M Transportation Institute, Jacob Herman/Texas A&M Transportation Institute, Cuthbert Ruseruka/Texas A&M Transportation Institute, Subasish Das/Texas A&M Transportation Institute

Improved Stay Point Detection Algorithm Applied on Taxi Trajectory Data in Delhi, India (TRBAM-24-06284) - A152

Richa Ahuja/Indian Institute of Technology, Kharagpur

2106



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Innovations, Trends, and Current Practice of Information and Knowledge Management in Transportation

Kendra Levine, University of California, Berkeley, presiding

Sponsored By Standing Committee on Information and Knowledge Management

Transportation is awash with data and information which organizations struggle in managing. Join researchers and practitioners in sharing their recent projects that have helped make transportation information easier to find and knowledge more easily shared across many modes and focus areas of transportation.

Data Visualization in the Service of Knowledge Management in Transportation (P24-20379) - A290

Marcin Stepniak/European Commission Joint Research Centre

(continued)

Discoveries in the First Year of the New Jersey Department of Transportation's Digitization Project (P24-20380) - A291

Eric Schwarz/Rutgers University

Dynamic Community Transportation Data, Information, and Knowledge Management Challenges (P24-20383) - A292

Scott Tousley/IT Cadre

Awareness and Impact Skills™ Training for Safety Leadership Positions (P24-20385) - A300

Michael Coplen/TrueSafety Evaluation, LLC

Expertise Management for Safety Leadership Positions (P24-20386) - A301

Brian Moon/Perigean Technologies LLC

Strategic Web-Based Data Dashboards as Monitoring Tools for Promoting Organizational Innovation (P24-20387) - A302

Siddharth Banerjee/California State Polytechnic University, Pomona

2107



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Current Issues in Resource Conservation and Recovery

Samer Dessouky, University of Texas, San Antonio, presiding

Sponsored By Standing Committee on Resource Conservation and Recovery

Environmental and Economic Trade-Offs of Different Reclaimed Asphalt Pavement Recycling Strategies for the City of São Paulo, Brazil (TRBAM-24-05655) - A310

Zila Mascarenhas/University of Sao Paulo, Fernanda Belizario-Silva/University of Sao Paulo, Kamilla

Vasconcelos/University of Sao Paulo

Comprehensive Greenhouse Gas Inventory and Avoided Emissions Analysis in Pavement Sectors: A Novel Framework (TRBAM-24-05320) - A311

Miaomiao Zhang/Massachusetts Institute of Technology, Haoran Li/Massachusetts Institute of Technology, Heng

Liu/Massachusetts Institute of Technology, Hessam AzariJafari/Massachusetts Institute of Technology, Randolph

Kirchain/Massachusetts Institute of Technology

Investigation into the Degradation of Air and Runoff Pollution Using Nano g-C3N4 Photocatalytic Road Surfaces (TRBAM-24-03119) - A312

Dan Zhao/Southeast University, Xingyu Gu/Southeast University, Jianqiao Liu/Southeast University

Review of Greenhouse Gas Emissions Associated with Pavement Construction Materials in the United States (TRBAM-24-00299) - A313

Ester Tseng/TEST, Inc. / SOL Engineering (ERDC Contractor), Joyce Alicea-Hernandez/TEST, Inc. / SOL Engineering (ERDC Contractor), Jeb Tingle/TEST, Inc. / SOL Engineering (ERDC Contractor)

2108



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Current Issues in Economic Development and Land Use

Rimon Rafiah, Ekonomikr, presiding

Sponsored By Standing Committee on Economic Development and Land Use

Examining the Nonlinear Effects of Neighborhood Housing and Transportation Affordability on Shared Dockless E-Scooter Trips Using Random Forest Modeling (TRBAM-24-00520) - A331

Wookjae Yang/University of Utah, Reid Ewing/University of Utah

Impact of Introducing a Ring-Road Expressway on Land Value in a Suburban Area: Empirical Evidence from Tokyo (TRBAM-24-00748) - A321

Jetpan Wetwitoo/Creative Research and Planning Co.,Ltd., Yoshikazu Kanai/Creative Research and Planning Co.,Ltd.,

Toshimori Otazawa/Creative Research and Planning Co.,Ltd., Hironori Kato/Creative Research and Planning Co.,Ltd.

Analysis of Urban Household Job Housing Patterns and the Factors Influencing Their Commuting Carbon Emissions (TRBAM-24-01701) - A322

Jin Zhang/Kunming University of Science and Technology, Xia Yang/Kunming University of Science and Technology, Kai

Wang/Kunming University of Science and Technology

(continued)

How to Build a Green Transportation System: A Dilemma Between Revenue and Environmental Benefits (TRBAM-24-01805) - A323

Yanyan Ding/Hong Kong University, Sisi Jian/Hong Kong University, Lin Yu/Hong Kong University

Using the Real Estate Market to Evaluate Transit Station Proximity Outcomes with Implications for Post-Pandemic Transit and Land Use Planning (TRBAM-24-02528) - A333

Arthur Nelson/Arthur C. Nelson, Robert Hibberd/Arthur C. Nelson, Kristina Currans/Arthur C. Nelson

Forecasting Transport and Housing Expenditure in the Montreal Census Metropolitan Area (TRBAM-24-02908) - A330

Mathilde Zanolini/Polytechnique Montréal, Catherine Morency/Polytechnique Montréal

Enhancing Last-Mile Connectivity: The Impact of the Built Environment on Bicycle-Metro Integrated Use in Urban Settings (TRBAM-24-02909) - A343

Haotian Guan/Kunming University of Science and Technology, Xiaofeng Ji/Kunming University of Science and Technology, Wu Li/Kunming University of Science and Technology, Xin Qiao/Kunming University of Science and Technology, Fang Chen/Kunming University of Science and Technology

A Study on Housing Price Under the Effect of Transit-Oriented Development Based on Spatial Econometric Model (TRBAM-24-03569) - A342

HaoDong Zhang/Shanghai Jiao Tong University, Kai Zhao/Shanghai Jiao Tong University, Zhan Zhang/Shanghai Jiao Tong University, Huadong Chen/Shanghai Jiao Tong University, Linjun Lu/Shanghai Jiao Tong University

Exploring the Impact of Built Environment on Taxi Travel Dependence (TRBAM-24-03734) - A320

Guangyue Nian/Tongji University, Haixiao Pan/Tongji University

Better Accessibility, Higher House Prices?: Using XGBoost and SHAP to Identify Nonlinear Patterns (TRBAM-24-03904) - A362

Xiang Liu/Tongji University, Xiaohong Chen/Tongji University, Mingshu Tian/Tongji University

Residential Location Choice of German Commuters: The Role of Public Transport Costs (TRBAM-24-04584) - A363

Johannes Nießen/RWTH Aachen University, Tobias Kuhnimhof/RWTH Aachen University

Salt Lake City's Streetcar: An Engine of Economic Development But Not Affordability (TRBAM-24-04813) - A332

Justyna Kaniewska/University of Utah, Reid Ewing/University of Utah

The Impact of Large-Scale Transportation Infrastructure Investments on Communities (TRBAM-24-04991) - A353

Armaghan Monshizadegan/Louisiana Transportation Research Center (LTRC), Ruijie Bian/Louisiana Transportation Research Center (LTRC), Peter Stopher/Louisiana Transportation Research Center (LTRC), Hany Hassan/Louisiana Transportation Research Center (LTRC)

Understanding the Impact of Development Sequences on Land Use and Transportation Infrastructures of New Towns Using an Integrated Model (TRBAM-24-05002) - A352

Yiming Dong/Wuhan University of Technology, Ming Zhong/Wuhan University of Technology, Xiaofeng Pan/Wuhan University of Technology, John Hunt/Wuhan University of Technology, Kun Wang/Wuhan University of Technology

The Regional Impact of High-Speed Rail on Intermediate Cities (TRBAM-24-05174) - A372

Juan Wang/North Carolina State University, Eleni Bardaka/North Carolina State University

Integrated Land Use and Transportation Modeling Considering the Impact of Autonomous Vehicles (TRBAM-24-05773) - A373

Roksana Asadi/New Jersey Institute of Technology, Branislav Dimitrijevic/New Jersey Institute of Technology, Lazar Spasovic/New Jersey Institute of Technology

2109



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Transit Management and Performance Papers

Frances Fisher, San Francisco Bay Area Rapid Transit, presiding

Konstantinos Gkiotsalitis, National Technical University of Athens (NTUA), presiding

Sponsored By Standing Committee on Transit Management and Performance, Standing Committee on Public Transportation Planning and Development

Papers evaluate various aspects of Transit from staffing challenges to the impacts of service availability and accessibility on ridership, transfer and congestion modeling to construction costs and key trends in transit today.

Accessibility Derivative: Measuring the Contribution of Public Transit Routes to Systemwide Accessibility (TRBAM-24-00938) - B540

Luyu Liu/University of Florida, Harvey Miller/University of Florida

(continued)

Reducing U.S. Transit Costs: An Empirical Review and Comparative Case Study of the Portland, Manchester, Rail Systems (TRBAM-24-02549) - B541

Chaitanya Sharma/VHB, Joseph Chow/VHB

Analyzing the Transfer Duration of Public Transport Passengers Using Classification and Regression Tree-Multiple-Cox Proportional Hazards Model (TRBAM-24-03262) - B542

Pengfei Han/Shenzhen Technology University, Tian Lei/Shenzhen Technology University, Lei Gong/Shenzhen Technology University, Qihua Zhan/Shenzhen Technology University, Cheng Zhu/Shenzhen Technology University

Transit Industry Leaders on the Future of Transit (TRBAM-24-03849) - B543

Kari Watkins/University of California, Davis, Bianca Mers/University of California, Davis, Michael Hunter/University of California, Davis

Extraboard Transit Operator Planning and Scheduling Under Uncertainty (TRBAM-24-04153) - B551

Jilin Song/University of Toronto, Amer Shalaby/University of Toronto, Merve Bodur/University of Toronto

Shifts in Public Perception About Returning to Transit: A Qualitative Analysis of Longitudinal Survey Data Amid the COVID-19 Pandemic (TRBAM-24-04292) - B544

Sameer Aryal/University of Tennessee, Knoxville, Christopher Cherry/University of Tennessee, Knoxville, Mojdeh Azad/University of Tennessee, Knoxville, Candace Brakewood/University of Tennessee, Knoxville, John MacArthur/University of Tennessee, Knoxville

Transit in America: Taking A Closer Look at Transit Access Effectiveness in Metropolitan Areas (TRBAM-24-06121) - B550

Alireza Ermagun/George Mason University, Frank Witlox/George Mason University

A Novel Fuzzy Cross-Efficiency Evaluation in Data Envelopment Analysis: A Case Study of State Road Transport Undertakings in India (TRBAM-24-06330) - B552

Swati Goyal/Birla Institute of Technology and Science, Pilani, Shivi Agarwal/Birla Institute of Technology and Science, Pilani, Trilok Mathur/Birla Institute of Technology and Science, Pilani

2110



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Research on On-Demand Ride Services

Arnd Baetzner, University of St.Gallen, presiding

Sponsored By Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Rural, Intercity Bus, and Specialized Transportation

This poster session features a collection of research on on-demand ride services including taxis, transportation network companies (TNCs), demand responsive transport (DRT), shared automated vehicles (SAVs), and pooling/ridesplitting.

What Stay-at-Home Orders Reveal About Dependence on Transportation Network Companies (TRBAM-24-00123) - B562

Lily Hanig/Carnegie Mellon University, Destenie Nock/Carnegie Mellon University, Corey Harper/Carnegie Mellon University

Multi-Task Dynamic Dispatching Approach for Shared Autonomous Electric Vehicles Under Uncertain Travel Demands with Stochastic Chance-Constrained Programming (TRBAM-24-00129) - B563

Hangqi Tian/Tongji University, Ning Wang/Tongji University, Kai Shang/Tongji University, Liaodong Nie/Tongji University

The Impacts of Ridesourcing Services on the Taxi Market: Empirical Evidence from England and Wales (TRBAM-24-00504) - B564

Pinar Bilgin/University of Leeds, Giulio Mattioli/University of Leeds, Malcolm Morgan/University of Leeds, Zia Wadud/University of Leeds

Why Did the Inflection Point of Transit Ridership Occur in China in 2014?: Originating from the Effect of the Ridehailing Service (TRBAM-24-00971) - B572

Yuhang Yang/Wuhan University of Technology, Shuyang Zhang/Wuhan University of Technology, Jingru Li/Wuhan University of Technology, Guojun Chen/Wuhan University of Technology

Transit Pass Ownership as a Potential Source of Heterogeneity in the Determinants of Ridesourcing Use in Metro Vancouver (TRBAM-24-01109) - B573

Sk. Md. Mashrur/University of Toronto, Patrick Loa/University of Toronto, Felita Ong/University of Toronto, Khandker Habib/University of Toronto

Exploring the Spatially Varying Relationship Between Taxi Services and Public Transit Demand: A Comparative Analysis Between Chengdu and Shanghai (TRBAM-24-01481) - B574

Xinghua Li/Tongji University, Yaocheng Zhou/Tongji University, Yuntao Guo/Tongji University, Wei Wang/Tongji University

(continued)

On the Joint Effects of Supply and Demand Multi-Homing in the E-Hailing Market (TRBAM-24-01641) - B582
 Guipeng Jiao/The University of Sydney, Mohsen Ramezani/The University of Sydney

Discovering the Factors Influencing Shared Autonomous Vehicle Adoption: A Cross-Group Analysis Considering Local Ridesharing Access and Historical Experience (TRBAM-24-01855) - B583
 Reuben Tamakloe/Korea Advanced Institute of Science and Technology (KAIST), Hyerin Lee/Korea Advanced Institute of Science and Technology (KAIST)

Demand-Responsive Transit Service with Soft Time Windows Considering Real-Time Disruptions Based on Bounded Rationality (TRBAM-24-01866) - B553
 Hongfei Wang/Beijing University of Technology, Hongzhi Guan/Beijing University of Technology, Huanmei Qin/Beijing University of Technology, Jun Guo/Beijing University of Technology

Will the High-Capacity Vehicle Strategy Bring About Benefits to Ridesharing Service?: From the Perspective of Environmental Sustainability (TRBAM-24-01908) - B554
 Hongfei Wang/Beijing University of Technology, Hongzhi Guan/Beijing University of Technology, Huanmei Qin/Beijing University of Technology, Wanying Li/Beijing University of Technology, Pengfei Zhao/Beijing University of Technology

Understanding Market Competition Between Transportation Network Companies Using Big Data (TRBAM-24-02065) - B604
 Guan Huang/University of Hong Kong, Yuebing Liang/University of Hong Kong, Zhan Zhao/University of Hong Kong

Influential Factors of Ridehailing Usage Frequency Before and After the COVID-19 Pandemic (TRBAM-24-03223) - B584
 Xuefeng Li/Nanjing Forest University, Mingyang Du/Nanjing Forest University, Mei-Po Kwan/Nanjing Forest University

Young People's Perceptions on Demand-Responsive Transportation and Ridematching Apps: Rethinking Shared Mobility (TRBAM-24-03429) - B592
 Christos Gkartzonikas/University of Cyprus, Loukas Dimitriou/University of Cyprus, Filippos Alogdianakis/University of Cyprus

A Decentralized Platform for Ridesourcing Service (TRBAM-24-03559) - B600
 Shuqing Wei/Hong Kong University of Science and Technology, Hai Yang/Hong Kong University of Science and Technology, Yuhan Liu/Hong Kong University of Science and Technology, Jun Wang/Hong Kong University of Science and Technology

Optimizing Compensation Strategies in Urban Ridesharing Platforms: A Constraint Reinforcement Learning Approach (TRBAM-24-03706) - B593
 Zhengqi Chen/Zhejiang University, Bin Zhou/Zhejiang University, Zhe Yu/Zhejiang University, Gaoang Wang/Zhejiang University, Zuozhu Liu/Zhejiang University, Lin Zhou/Zhejiang University, Simon Hu/Zhejiang University

Mining Trip Spatial Features of High-Benefit Taxi Drivers: A Case Study in Chongqing, China (TRBAM-24-03726) - B594
 Guangyue Nian/Tongji University, Haixiao Pan/Tongji University, Daniel(Jian) Sun/Tongji University

Enhancing the Carbon Reduction Potential in Ridesplitting Through a Reinforcement Learning Approach: A Case Study of Chengdu (TRBAM-24-03952) - B601
 Lingyun Zhong/Tongji University, Ye Li/Tongji University, Meiting Tu/Tongji University

Auction-Based Distributed Ridehailing Rebalancing: The Case Study of Lyon, France (TRBAM-24-04930) - B602
 Manon Seppecher/Université Gustave Eiffel, Ludovic Leclercq/Université Gustave Eiffel

Incorporating Walking into Ridehailing: The Potential Benefits of Flexible Pick Up and Drop Off (TRBAM-24-05357) - B605
 Fangyi Ding/University of Hong Kong, Shuting Chen/University of Hong Kong, Zhan Zhao/University of Hong Kong

Analyzing Users' Choice Behaviors in Rideshare Services with Mixed Logit Modeling Approach (TRBAM-24-06021) - B570
 Haotian Su/Clemson University, Nazmul Arefin Khan/Clemson University, Krishna Murthy Gurumurthy/Clemson University, Joseph Paul/Clemson University, Rakesh Gangadharaiyah/Clemson University, Lisa Boor/Clemson University, Kristin Kolodge/Clemson University, Joshua Auld/Clemson University, Johnell Brooks/Clemson University, Yunyi Jia/Clemson University

Unveiling the Divide: Exploring Spatiotemporal Disparities of Ridesharing Wait Times of College Campuses in Urban and Rural Regions (TRBAM-24-06023) - B560
 Kiara Batson/George Mason University, Alireza Ermagun/George Mason University

Identifying Potential Market of Advanced Ridehailing Services with Taxi-to-Taxi Transfer Using a Latent Class Choice Model (TRBAM-24-06112) - B603
 Seyeon Park/Yonsei University, Hyunmyung Kim/Yonsei University, Jindong Kang/Yonsei University, Jun Lee/Yonsei University, Jinhee Kim/Yonsei University

(continued)

A Trip Chain Planning Method for Shared Autonomous Vehicles in Reservation Mode Considering the Uncertainty of Travel Time (TRBAM-24-04073) - B611

Qiming Su/Southwest Jiaotong University, Xia Luo/Southwest Jiaotong University, Zhengyan Huo/Southwest Jiaotong University, Bao Wang/Southwest Jiaotong University, Yuewen Yu/Southwest Jiaotong University

Practitioners and Industry Experts' Perception Analysis of Autonomous Shuttles (TRBAM-24-05044) - B612

Dil Diba/University of North Carolina, Charlotte, Ninad Gore/University of North Carolina, Charlotte, Srinivas Pulugurtha/University of North Carolina, Charlotte

2111



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Research on Carsharing, Shared Micromobility, and Other Shared Mobility Services

Carol Schweiger, Schweiger Consulting LLC, presiding

Sponsored By Standing Committee on Innovative Public Transportation Services and Technologies

This poster session features a collection of research on carsharing, shared micromobility (bike and scooter sharing), and other shared mobility services.

Spatial-Temporal Analysis of Carsharing Transactions Based on a Typology of Reservations in Montreal (TRBAM-24-00644) - B625

Emilie Savard/Ecole Polytechnique de Montreal, Martin Trepanier/Ecole Polytechnique de Montreal, Catherine Morency/Ecole Polytechnique de Montreal

Carsharing Relocation Through a Deep Reinforcement Learning Framework (TRBAM-24-00929) - B613

Chengqi Liu/Southeast University, Shiqi Yang/Southeast University, Kai Huang/Southeast University, Zhiyuan Liu/Southeast University

Are Photovoltaic Battery-Powered Bikeshare Stations Energy Self-Sufficient? (TRBAM-24-01552) - B614

Yue Li/Purdue University, Hao Luo/Purdue University, Hua Cai/Purdue University

Ridepooling as On-Demand Feeder Services: A Simulation-Based Study (TRBAM-24-01698) - B615

Wenbo Fan/Southwest Jiaotong University, Xiaotian Yan/Southwest Jiaotong University, Fuchao Wang/Southwest Jiaotong University

Driving Alone, Public Transport, or Ridesharing?: Analysis of a Real-World Trip Data Set of

Commuter-Oriented, App-Based Carpooling (TRBAM-24-02060) - B616

Marcel Porschen/RWTH Aachen University, Michael Schrömbges/RWTH Aachen University

Planning Decentralized Battery Swapping Facilities for E-Bike Sharing Systems (TRBAM-24-02147) - B607

Luyun Zhao/University of Hong Kong, Shiyu Shen/University of Hong Kong, Zhan Zhao/University of Hong Kong

Exploring the Complex Network Structure of Carsharing Systems in China: A Comprehensive Analysis of

Multi-City Networks (TRBAM-24-02151) - B617

Zu Jinyan/University of Hong Kong

A Copula-Based Approach for Multimodal Demand Dependence Modeling: Temporal Correlation Between the Demand for Subway and Bikesharing (TRBAM-24-03183) - B610

Yining Di/Hong Kong University, Meng Xu/Hong Kong University, Zheng Zhu/Hong Kong University, Hai Yang/Hong Kong University

Application of Association Rules Mining Algorithm for Shared E-Bike Wrong-Way Riding Behavior

(TRBAM-24-03273) - B618

Xiaolong Zhang/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Yang Bian/Beijing University of Technology, Jianling Huang/Beijing University of Technology, Zhongyin Liu/Beijing University of Technology

Mapping Scootability from Preferred Routes: A Data-Driven, Multi-Purpose Indicator System for E-Scooter

Usage (TRBAM-24-03595) - B606

Shuting Chen/University of Hong Kong, Xiaohu Zhang/University of Hong Kong, Zhejing Cao/University of Hong Kong

Moving Forward: Directions for Analyses of Free-Floating Micromobility Systems (TRBAM-24-04178) - B619

Daniel Romm/McGill University, Grant McKenzie/McGill University

The Potential of Mobility-as-a-Service in the United States: A Choice Experiment in Nashville, Tennessee

(TRBAM-24-04255) - B608

Sameer Aryal/University of Tennessee, Knoxville, Christopher Cherry/University of Tennessee, Knoxville, Candace Brakewood/University of Tennessee, Knoxville

Fleet Availability Prediction for Shared E-Scooters (TRBAM-24-04316) - B620

Jiahui Zhao/Chalmers University of Technology, Jiaming Wu/Chalmers University of Technology, Pan Liu/Chalmers University of Technology, Zhibin Li/Chalmers University of Technology

(continued)

Life-Cycle Assessment of Electric Scooter: A Comprehensive Sustainable Analysis of a Shared Micromobility System (TRBAM-24-04386) - B621

Md Afif Rahman Chowdhury/Louisiana State University, Mostafa Elseifi/Louisiana State University

Riding Together: How Subscription Sharing and Nationality Influence Mobility-as-a-Service Adoption in Qatar (TRBAM-24-04597) - B622

Athena Tsirimpa/University of the Aegean, Ioannis Karakikes/University of the Aegean, Ioannis Tsouros/University of the Aegean, Anas Ahmad Mohammad/University of the Aegean, Shahram Tahmasseby/University of the Aegean, Salwa Salam/University of the Aegean, Wael Alhajyaseen/University of the Aegean, Amalia Polydoropoulou/University of the Aegean

Mobility-as-a-Service and Shared Micromobility: Empirical Evidence from a Large-Scale Trial in a University Community (TRBAM-24-05055) - B623

Xin Chen/University of Queensland, Mark Hickman/University of Queensland

Exploring the Contributing Factors That Affect the Usage of Divvy Bikesharing by Using a Geographically and Temporally Weighted Regression Method (TRBAM-24-05065) - B624

Lu Wang/Illinois Institute of Technology, You Zhou/Illinois Institute of Technology

Shared Services in Ridesharing Considering the Network Collaboration Effect (TRBAM-24-05365) - B626

Haiyuan Chen/Southwest Jiaotong University, Ruijie Li/Southwest Jiaotong University, Yuanzhi Xie/Southwest Jiaotong University

Modeling Time-to-Book for E-Scooters Using Grouped Order Logit Model (TRBAM-24-05384) - B627

Nami Alsulami/University of Central Florida, Sudipta Dey Tirtha/University of Central Florida, Ahmed Kabli/University of Central Florida, Shamsunnahar Yasmin/University of Central Florida, Naveen Eluru/University of Central Florida

Dynamic Vehicle Relocation and Assignment for a Demand-Responsive Vehicle Platooning Transit System (TRBAM-24-05535) - B628

Aijing Su/Tongji University, Bing Wu/Tongji University, Chi Xie/Tongji University, Yanli Wang/Tongji University, Ziyu Zhang/Tongji University

Mobility on Demand: What About the Weekend? (TRBAM-24-05693) - B629

Grace Kagho/ETH Zurich, Miloš Balać/ETH Zurich, Kay Axhausen/ETH Zurich

Understanding User's Willingness to Participate in the Reward-based Redistribution in Bike-share Systems: An Integrated Choice and Latent Variable Approach (TRBAM-24-06495) - B609

Ayse Askar/Korea Advanced Institute of Science and Technology, Suji Kim/Korea Advanced Institute of Science and Technology, Kitae Jang/Korea Advanced Institute of Science and Technology

2112



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Public Transportation Market Research and Pricing Policies: Results and Implications for Practice

Julie Fernandez, Metropolitan Transit Authority of Harris County, presiding

Sponsored By Standing Committee on Public Transportation Marketing and Fare Policy

It is critical for public transport providers to understand travel behavior and how customers respond to new information, fare policies, and other system changes. This session highlights recent research on the impacts of numerous innovative policies and practices in public transport systems, including providing real-time public transport crowding information, fare-free policies, and prepeak pricing discounts. New research on fare strategies for shared autonomous vehicles (SAV) will be presented, as well as research on the use of Large Language Models in public transport. Last, analyses of changing transit ridership trends will also be presented.

Impact of the COVID-19 Pandemic on the Willingness to Wait with Real-Time Crowding Information (TRBAM-24-02621) - B633

Arkadiusz Drabicki/Technische Universitat Munchen, Oded Cats/Technische Universitat Munchen, Rafal Kucharski/Technische Universitat Munchen

Does Fare-Free Transit Reduce Income Inequality and Increase Labor Force Participation? (TRBAM-24-00458) - B631

Kenneth Ofosu-Kwabe/North Dakota State University, Siew Hoon Lim/North Dakota State University

Dynamic and Heterogenous Effects of Prepeak Discount Fare Policy on Individual Travel Behavior (TRBAM-24-01010) - B632

Yadi Zhu/Beijing Jiaotong University, Huazhi Liu/Beijing Jiaotong University, Xiaohong Li/Beijing Jiaotong University, Yang Yang/Beijing Jiaotong University

(continued)

Individual Mobility and Public Transport Subsidies (TRBAM-24-00621) - B640

Joschka Flintz/Ruhr Universität, Bochum, Mark Andor/Ruhr Universität, Bochum, Marco Horvath/Ruhr Universität, Bochum, Colin Vance/Ruhr Universität, Bochum

Simulating Price-Based Shared Automated Vehicle Fleet Competition Between Multiple Operators (TRBAM-24-05652) - B630

Balasubramanian Sambasivam/University of Texas, Austin, Krishna Murthy Gurumurthy/University of Texas, Austin, Kara Kockelman/University of Texas, Austin

Leveraging Large Language Models for Enhancing Public Transit Services (TRBAM-24-00472) - B641

Jiahao Wang/University of Toronto, Amer Shalaby/University of Toronto

Driver's License for Undocumented Immigrants and Bus Ridership in Orange County, California (TRBAM-24-00217) - B642

Farzana Khatun/University of California, Irvine, Jean-Daniel Saphores/University of California, Irvine

The Impact of COVID-19 on Chicago Transit Authority Rail and Bus Ridership in Northeastern Illinois (TRBAM-24-04730) - B643

Yining Liu/University of Illinois, Urbana-Champaign, Jesus Osorio/University of Illinois, Urbana-Champaign, Yanfeng Ouyang/University of Illinois, Urbana-Champaign, Cemal Ayvalik/University of Illinois, Urbana-Champaign, Charles Abraham/University of Illinois, Urbana-Champaign

2113



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Understanding Passenger Flow: Discover Optimal Management Method and Station Design

Ryan Avery, University of Washington, presiding

Sponsored By Standing Committee on Urban Rail Transit Systems

This poster session will include presentations on posters in the areas of passenger flow, optimization methods, and station design.

Collaborative Passenger Flow Control in Metro Lines: Considering Fundamental Diagram and Dynamic Congestion Propagation (TRBAM-24-00379) - B650

Dongjie Li/Southwest Jiaotong University, Aoping Wu/Southwest Jiaotong University, Hongxun Liu/Southwest Jiaotong University, Lu Hu/Southwest Jiaotong University

Leveraging Intra-Period and Inter-Period Features for Enhanced Passenger Flow Prediction of Subway Stations (TRBAM-24-00730) - B651

Xiannan Huang/Tongji University, Jiading, Chao Yang/Tongji University, Jiading, Quan Yuan/Tongji University, Jiading

Metro Short-Term Passenger Flow Forecasting Based on Cross-City Data Fusion (TRBAM-24-01743) - B652

Wenbo Lu/Southeast University, Yong Zhang/Southeast University, Peikun Li/Southeast University, Ting Wang/Southeast University

Equidistant Cooperative Optimization Method of the Inbound Passenger Inflow Control and Train Skip-Stop Planning on Commuter Metro Lines (TRBAM-24-01755) - B665

Wei Zhou/Southeast University, Xiucheng Guo/Southeast University, Shuang Li/Southeast University, Zhenjun Zhu/Southeast University, Ting Chen/Southeast University

A Convolution Neural Network-Long Short-Term Memory Model for Short-Term Passenger Flow Forecast Considering Built Environment in Rail Transit Stations (TRBAM-24-02158) - B653

Bingxin Cao/Beijing University of Technology, Yongxing Li/Beijing University of Technology, Anan Yang/Beijing University of Technology, Yanyan Chen/Beijing University of Technology, Yuntong Zhou/Beijing University of Technology

Equity-Oriented Collaborative Optimization of Capacity Dynamic Allocation and Passenger Flow Control on a Congested Metro Line (TRBAM-24-02273) - B654

Yibo Shi/Southwest Jiaotong University, Hao Huang/Southwest Jiaotong University, Lan Liu/Southwest Jiaotong University

Online Detection of Passenger Flow Anomaly in Metro Systems: A Robust Random Cut Forest-Based Model (TRBAM-24-05843) - B655

Jinjing Li/Chang'an University, Yangyang Zhao/Chang'an University, Hui Peng/Chang'an University

Identifying Station Importance in Urban Rail Transit Networks Using a Combination of Centrality and Time Reliability Measures: A Case Study in Beijing, China (TRBAM-24-01099) - B662

Xiaohan Xu/Beijing Jiaotong University, Amer Shalaby/Beijing Jiaotong University, Qian Feng/Beijing Jiaotong University, Ailing Huang/Beijing Jiaotong University

(continued)

Assessing Station Access Strategies to Grow Commuter Rail Ridership (TRBAM-24-02491) - B663

Jason Skidmore/BA Consulting Group, Ltd., Clarence Woudsma/BA Consulting Group, Ltd., Jeff Casello/BA Consulting Group, Ltd.

A Spatial Classification Method of Megacities Metro Stations Using Transportation Characterization of Jobs–Housing Imbalance: The Case of Beijing (TRBAM-24-03060) - B664

Zhonghua Wei/Beijing University of Technology, Dongtong Ding/Beijing University of Technology, Yunxuan Li/Beijing University of Technology, Jingxuan Peng/Beijing University of Technology, Shi hao Wang/Beijing University of Technology, Lin Jia/Beijing University of Technology

2114



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Exploring Operations Optimization: Train Scheduling and Staffing Forecasting

Shi Xie, Sound Transit, presiding

Sponsored By Standing Committee on Urban Rail Transit Systems

This poster session will include presentations in the area of operations optimization.

Multi-Period Scheduling Optimization for Metro Networks Considering Topological Structure and Dynamic Demand (TRBAM-24-01017) - B656

Chen Junlan/Southeast University, Xiucheng Guo/Southeast University, Shuo Wang/Southeast University, Ziyuan Pu/Southeast University

Optimization of Train Schedule Using Flexible Train Formation with Online Coupling and Decoupling Mode for Y-Shaped Metro Lines (TRBAM-24-01293) - B648

Siqian Chen/Shenzhen Technology University, Wei Li/Shenzhen Technology University, Qin Luo/Shenzhen Technology University

Optimization of Train Service for Cross-Line Operation: A Novel Virtual Coupling Train Composition Mode (TRBAM-24-01686) - B657

Yue Liu/Beijing University of Technology, Yan Xu/Beijing University of Technology, Lishan Sun/Beijing University of Technology, Dewen Kong/Beijing University of Technology, Longxiang He/Beijing University of Technology

Optimization Model for Train Operation Timetable in Interconnected Rail Transit Networks (TRBAM-24-02199) - B649

Yvxuan Li/Texas A&M University, Fan Pu/Texas A&M University, Lin Ma/Texas A&M University, Jiateng Yin/Texas A&M University, Lixing Yang/Texas A&M University, Xin Wu/Texas A&M University

Incorporating Multimodal Coordination into Train Scheduling Optimization in Urban Railway Transportation Systems (TRBAM-24-03024) - B639

Simin Chai/Beijing Jiaotong University, Jiateng Yin/Beijing Jiaotong University, Andrea D'Ariano/Beijing Jiaotong University, Lixing Yang/Beijing Jiaotong University, Tao Tang/Beijing Jiaotong University

Forecasting Maintenance Staffing Levels for Rail Vehicles During Expected Useful Life Cycle and System Expansion at LA Metro (TRBAM-24-03297) - B658

Christopher McGee/Los Angeles County Transportation Authority (LACMTA)

Optimizing Passenger Comfort: An Integrated Approach for Train Scheduling and Crowd Management on an Overcrowded Metro Line (TRBAM-24-03568) - B659

Tong Zhang/Southeast University, Dawei Li/Southeast University, Yuchen Song/Southeast University, Yongchen Fan/Southeast University, Ruixin Liu/Southeast University

Timetable Synchronization Optimization for Through-Express Train and Local Train in Rail Transit Network (TRBAM-24-03878) - B638

Yuchao Zhan/NanJing University of Science and Technology, Mao Ye/NanJing University of Science and Technology, Zhicheng Huang/NanJing University of Science and Technology, Wenlong Huang/NanJing University of Science and Technology, Dongzhe Jin/NanJing University of Science and Technology

Evaluating Rail Transit Assignment Models in Temporal Dimension: The Problem and Its Solution (TRBAM-24-05037) - B667

Wei Zhu/Tongji University, Jin Wei/Tongji University, Changyue Xu/Tongji University

Optimizing Train Car Passenger Loading via Platform Escalator Directions (TRBAM-24-05934) - B668

Qiru Ma/Hong Kong University, Enoch Lee/Hong Kong University, Kejun DU/Hong Kong University, Zhiya SU/Hong Kong University, Bede Siman Tang/Hong Kong University, Ho Wing Chan/Hong Kong University, Hong Lo/Hong Kong University, S.W. Ricky Lee/Hong Kong University

(continued)

Developing a Modular, Data-Driven Mesoscopic Simulator for Stochastic Railway Networks (TRBAM-24-03189) - B669

Peter (Yun Hao) Lai/University of Toronto, Willem Klumpenhower/University of Toronto, Amer Shalaby/University of Toronto

2115



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Operation Management Strategy: Incident and Disruption Management

Ryan Avery, University of Washington, presiding

Sponsored By Standing Committee on Urban Rail Transit Systems

This poster session will include presentations in the area of operations management strategies for incidents and disruptions.

Train Service Replanning in Urban Rail Transit System: An Integrated Operation Mode That Combines Express and Local and Short-Turning Strategies (TRBAM-24-01024) - B637

Renjie Zhang/Southeast University, Min Yang/Southeast University, Mingye Zhang/Southeast University, Rui Peng/Southeast University, Mao Ye/Southeast University

Real-Time Adjustment Method for Metro Trains with Train Delays Based on Improved Reinforcement Learning (TRBAM-24-01294) - B647

Yushen Hu/Shenzhen Technology University, Wei Li/Shenzhen Technology University, Qin Luo/Shenzhen Technology University

Irregular Demand Pattern Analysis Under Unplanned Disruptions in Urban Rail Systems (TRBAM-24-01382) - B646

Yangyang Zhao/Chang'an University, Jinjing Li/Chang'an University, Zhixi Cheng/Chang'an University, Hui Peng/Chang'an University, Zhenliang Ma/Chang'an University

Operation Extension Strategy on Last-Train Connection Scheme in the Urban Rail Transit Network: A Pareto Optimality-Based Approach (TRBAM-24-01423) - B636

Feng Zhou/Tongji University, Wenyu Wang/Tongji University, Fangsheng Wang/Tongji University, Rudong Yang/Tongji University, Ruihua Xu/Tongji University

Passenger Behavior Classification and Trip Rescheduling Under Disruptions in Urban Rail Transit Networks (TRBAM-24-01786) - B644

Siyu Zhuo/Beijing Jiaotong University, Xiaoning Zhu/Beijing Jiaotong University, Pan Shang/Beijing Jiaotong University, Zhengke Liu/Beijing Jiaotong University

Understanding Incident Effects on Subway Operations: A Clustering Analysis of Severity Patterns (TRBAM-24-02357) - B635

Mostafa Abolfazli/Ecole Polytechnique de Montreal, Martin Trepanier/Ecole Polytechnique de Montreal, Aurelie Labbe/Ecole Polytechnique de Montreal

Causal Inference for Disruption Management in Urban Metro Networks (TRBAM-24-03104) - B645

Nan Zhang/Imperial College London, Daniel Hörcher/Imperial College London, Prateek Bansal/Imperial College London, Daniel Graham/Imperial College London

A Topological Analysis of Recoverability in Metro Networks (TRBAM-24-00487) - B634

Renzo Massobrio/Delft University of Technology, Oded Cats/Delft University of Technology

2116



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Changing Transit Customer Use Patterns

Shi Xie, Sound Transit, presiding

Sponsored By Standing Committee on Urban Rail Transit Systems

This poster session includes presentations related to understanding ridership pattern changes.

Clustering the Time of Week Ridership Patterns of Chicago Subway Stations Before and After the COVID-19 Pandemic (TRBAM-24-01116) - B674

Matthew Hui/City of Menlo Park, Daniel Rodriguez/City of Menlo Park, Marta González/City of Menlo Park

(continued)

The Co-opetition Effects of Ridehailing on Metro Services and Its Spatially Varying Determinants: Evidence from Shanghai, China (TRBAM-24-01463) - B675

Jianhong Ye/Tongji University, Wenyang Hao/Tongji University, Jiahao Bai/Tongji University

Cascading Failure in Urban Rail Transit Network Considering Demand Variation and Time Delay (TRBAM-24-02714) - B677

Kun Jin/Southeast University, Wei Wang/Southeast University, Xinran Li/Southeast University, Siyuan Chen/Southeast University, Shaoyang Qin/Southeast University, Xuedong Hua/Southeast University

Understanding Transit Ridership Recovery Patterns with Two Prospectives: Rebounding from Rock Bottom or Proximity to Pre-COVID-19 Ridership (TRBAM-24-03621) - B678

Arsalan Esmaili/University of Washington, Shakiba Naderian/University of Washington, Ekin Ugurel/University of Washington, Xuegang Ban/University of Washington, Cynthia Chen/University of Washington

The Impact of COVID-19 on Subway Ridership: Spatial Variation and Built Environment Determinants (TRBAM-24-05315) - B679

Hongtai Yang/Southwest Jiaotong University, Ximeng Zhang/Southwest Jiaotong University, Hongjun Hu/Southwest Jiaotong University, Xinan Zhou/Southwest Jiaotong University, Kun Xie/Southwest Jiaotong University, Linchuan Yang/Southwest Jiaotong University

2117



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Current Research in Rail Equipment

Davidson Ward, FMW Solutions LLC, presiding

Sponsored By Standing Committee on Rail Rolling Stock and Motive Power

Comparative Analysis of Alternative Powertrain Technologies in Freight Trains: A Numerical Examination Toward Sustainable Rail Transport (TRBAM-24-00913) - B500

Ahmed Aredah/Virginia Polytechnic Institute, Jianhe Du/Virginia Polytechnic Institute, Mohamed Hegazi/Virginia Polytechnic Institute, George List/Virginia Polytechnic Institute, Hesham Rakha/Virginia Polytechnic Institute

Optimization of Rolling Stock Scheduling Under Dynamic Maintenance Requirements for the Chinese High-Speed Railway (TRBAM-24-01507) - B504

Guofeng Sun/Beijing Jiaotong University, Yun Jing/Beijing Jiaotong University, Zhiqiang Tian/Beijing Jiaotong University, Maowu Zhu/Beijing Jiaotong University

Rule-Based Heuristic Algorithm for Rolling Stock Assignment and Maintenance Plan with Consideration of Subsystem Degradation and Failures (TRBAM-24-01530) - B514

Teng-Ying Chang/National Taiwan University, Wei-Jyun Lin/National Taiwan University, Kwei-Long Huang/National Taiwan University, Yung-Cheng Lai/National Taiwan University

Improved RAKEL's Fault Diagnosis Method for High-Speed Train Traction Transformer (TRBAM-24-01905) - B512

Man Li/Beijing Jiaotong University, Xinyi Zhou/Beijing Jiaotong University, Siyao Qin/Beijing Jiaotong University, Ziyan Bin/Beijing Jiaotong University, Yanhui Wang/Beijing Jiaotong University

Abatement Cost Curve Analysis of Freight Rail Decarbonization Alternatives (TRBAM-24-02036) - B501

Adrian Hernandez/Northwestern University, Max Ng/Northwestern University, Choudhury Siddique/Northwestern University, Pablo Durango-Cohen/Northwestern University, Amgad Elgowainy/Northwestern University, Hani Mahmassani/Northwestern University, Michael Wang/Northwestern University, Yan Zhou/Northwestern University

Development and Testing of New Materials for Improvement of Thermal Protection Systems to Mitigate Rail Transportation Risk of Flammable Liquids (TRBAM-24-02635) - B513

Zheyong Bian/Rutgers University, Alyaa Elsaadany/Rutgers University, Di Kang/Rutgers University, Arya Tewatia/Rutgers University, Thomas Nosker/Rutgers University, Xiang Liu/Rutgers University

Sensitivity of Potential Battery Electric Locomotive Energy Benefits to Freight Railway Operating Characteristics and Charging Strategies (TRBAM-24-04029) - B502

Michael Copley/University of Texas, Austin, C Dick/University of Texas, Austin

An Investigation of Freight Car Air Brake System Performance in Cold Temperatures (TRBAM-24-05386) - B503

Elton Toma/National Research Council, Canada, Alok Jahagirdar/National Research Council, Canada, Stephen Mackie/National Research Council, Canada, Albert Wahba/National Research Council, Canada, Christine Backs/National Research Council, Canada

2118



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Research Trends in Rail Safety

Jason Wornoff, Federal Railroad Administration (FRA), presiding

Sponsored By Standing Committee on Rail Safety

Railway Accident Early Warning Using a Machine Learning–Based Risk Factor Monitoring Framework (TRBAM-24-00790) - B531

Guangyuan Pan/Linyi University, Xiuqiang Wu/Linyi University, Ce Zhang/Linyi University, Hao Wei/Linyi University, Liping Fu/Linyi University

Evaluation of Fatigue and Drowsiness of the Regional Passenger Railroad Workforce in Los Angeles, California (TRBAM-24-00990) - B533

Sarah Hacker/Kansas State University, Eric Fitzsimmons/Kansas State University, Chelsea Isom/Kansas State University, Ryan Moran/Kansas State University, Natalie Moursund/Kansas State University, Linda Hill/Kansas State University, Ted Bloomquist/Kansas State University

Railway Injury Prediction Using Discriminant Analysis and Ensemble Learning Approach (TRBAM-24-01334) - B532

Habeeb Mohammed/North Carolina A&T State University, Rongfang (Rachel) Liu/North Carolina A&T State University, Steven Jiang/North Carolina A&T State University

Driver Fatigue Detection Using Measures of Heart Rate Variability and Electrodermal Activity (TRBAM-24-02404) - B534

Yubo Jiao/University of Waterloo, Ce Zhang/University of Waterloo, Xiaoyu Chen/University of Waterloo, Liping Fu/University of Waterloo, Chaozhe Jiang/University of Waterloo, Chao Wen/University of Waterloo

Quantitative Analysis of Railroad Train Collisions in the United States (TRBAM-24-06533) - B530

Chen-Yu Lin/National Yang Ming Chiao Tung University, Chen Song/National Yang Ming Chiao Tung University, Christopher Barkan/National Yang Ming Chiao Tung University

2119



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Key Factors in Risk and Crashes and the Communication Architecture

Pamela Fischhaber, Colorado Public Utilities Commission, presiding

Sponsored By Standing Committee on Highway/Rail Grade Crossings

Vehicle Crashes on Highway Segments with a Rail Grade Crossing: Insights into the Key Risk Factors in North Carolina (TRBAM-24-06333) - B522

Panick Kalambay/University of North Carolina, Charlotte, Abimbola Ogungbire/University of North Carolina, Charlotte, Srinivas Pulugurtha/University of North Carolina, Charlotte

Exploring Key Factors Affecting Collision Risk at Grade Crossings in Canada: A Nonparametric Machine Learning Approach (TRBAM-24-02405) - B523

Yubo Jiao/University of Waterloo, Liping Fu/University of Waterloo

Train-Railroad Highway Crossing Communication Architecture Toward Real-Time Federal Railroad

Administration Railway Operations for Crash Incident (TRBAM-24-00447) - B524

Emmanuel Samson/Tennessee State University, Deo Chimba/Tennessee State University, Al Amin/Tennessee State University, Kamrul Hasan/Tennessee State University, Shala Blue/Tennessee State University

2120



Monday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Current Trends in Hazardous Materials Transportation Research

Barbara Di Bacco, Transport Canada, presiding

Sponsored By Standing Committee on Transportation of Hazardous Materials

(continued)

Estimation of the Infiltration Depth of Hazardous Materials on Glass Beads: Implications on Groundwater Contamination Due to Impacts of Train Derailment (TRBAM-24-00923) - B520

Heshani Manaweera Wickramage/North Dakota State University, Pan Lu/North Dakota State University, Peter Oduor/North Dakota State University, Jianbang Du/North Dakota State University

A Blockchain-Based Supervision Platform for Dangerous Goods Supply Chain (TRBAM-24-04958) - B510

Ao Wang/Tongji University, Jiading, Guojun Zhu/Tongji University, Jiading, Jian Li/Tongji University, Jiading

Collaborative Governance on Deceptive Behaviors in Dangerous Goods Transportation: An Evolutionary Game Analysis via Blockchain Technology (TRBAM-24-05229) - B511

Guojun Zhu/Tongji University, Jian Li/Tongji University

A Bi-Level Model for Optimizing Designated Checkpoints of Intercity Roadway Hazmat Transportation (TRBAM-24-05759) - B521

Ranran Chen/Tongji University, Jian Li/Tongji University, Guojun Zhu/Tongji University

2121

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 102B

Equity in Bicycling and Micromobility

Raktim Mitra, Toronto Metropolitan University, presiding

Sponsored By Standing Committee on Bicycle Transportation, Standing Committee on Equity in Transportation

This session will showcase research examining various aspects of equity in bicycling and micromobility, including accessibility, resource allocation, and differential safety outcomes.

To Share or Segregate?: An Agent-Based Simulation Experiment to Evaluate the Accessibility and Transport Equity of Road Space Allocation Scenarios (TRBAM-24-00362)

Panagiotis Tzouras/National Technical University of Athens (NTUA), Stefanos Tsigdinos/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA)

Shared Micromobility and Transport Equity: A Case Study of Three European Countries (TRBAM-24-03999)

Xiaodong Guan/Utrecht University, Dea van Lierop/Utrecht University, Dick Ettema/Utrecht University

Examining Bicyclist Safety Inequity Across Neighborhoods in Florida (TRBAM-24-05317)

Xingjing Xu/University of Florida, Xiang Yan/University of Florida, Jia Fang/University of Florida, Ilir Bejleri/University of Florida

Cycling Accessibility to Employment, Schools, and Grocery Stores in Arizona Metropolitan Regions (TRBAM-24-05619)

Steven Gehrke/Northern Arizona University, Manoj Allam/Northern Arizona University, Armando Martinez/Northern Arizona University, Ty Holliday/Northern Arizona University, Brendan Russo/Northern Arizona University, Edward Smaglik/Northern Arizona University

2122

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Salon C

State of Intelligent Transportation Systems: Strategic Directions and Priorities

Gregory Krueger, HNTB Corporation, presiding

Sponsored By Standing Committee on Intelligent Transportation Systems

This session convenes influential ITS government and industry leaders from around the globe to share their perspective on ITS along with insights on the strategic direction and priorities of their agency or organizations for the coming years. The goal of this year's session is to provide five perspectives on the strategic direction and priorities for advancing the use of ITS to improve traveler safety, mobility, and expectations. We have five amazing speakers to provide these perspectives and insights: -Brian Cronin, Director, Intelligent Transportation Systems (ITS) Joint Program Office -Jared Perdue, Secretary, Florida DOT (Invited) -Laura Chace, President and CEO, ITS America -Dr. Angelos Amditis, Chair, ERTICO -TBD, Private Sector CEO

U.S. Department of Transportation ITS Program Strategic Direction and Priorities (P24-20188)

Brian Cronin/Federal Highway Administration (FHWA)

ITS America Strategic Direction and Priorities (P24-20781)

Laura Chace/ITS America

(continued)

ERTICO Strategic Direction and Priorities (P24-20189)

Angelos Amditis/ERTICO-ITS Europe

Florida Department of Transportation's Transportation Operations and ITS Program Strategic Directions and Priorities (P24-20186)

Jared Perdue/Florida Department of Transportation

2124

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Salon B

Doctoral Student Research in Transportation Safety: A Lectern-Poster Session

Peter Savolainen, Michigan State University, presiding

Sponsored By Standing Committee on Safety Performance and Analysis, Standing Committee on Statistical and Econometric Methods

This annual session consists of presentations from Ph.D. students who are nearing the completion of their doctoral research in transportation safety. The session will be hybrid in nature, with 3-minute lectern presentations from each student, followed by an abbreviated poster session.

Spatial Big Data Analysis and Artificial Intelligence Applications for Transportation Safety and Network Systems Optimization (P24-21438)

Abdul Rashid Mussah/University of Missouri, Columbia

Enhancing High-Speed Road Safety: Insights from Advanced LiDAR-Based Driver Behavior Analysis (P24-21439)

Akshay Gupta/Indian Institute of Technology, Roorkee

Interactions Between Road Environment and Driver State for the Identification of Safety Critical Conditions (P24-21440)

Eva Michelaraki/National Technical University of Athens (NTUA)

Short-Term Network Screening and Crash Hot Spot Detection (P24-21441)

Maroa Mumtarin/Iowa State University

NCAT12-DET: A New Benchmark Data Set for Surface Defect Detection and a Comparative Study (P24-21442)

Nana Kankam Gyimah/North Carolina A&T State University

Assessment of Operational, Safety, and Behavioral Impacts of Speed Limit Increases (P24-21443)

Nischal Gupta/Michigan State University

Methodologies for the Integrated Analysis and Assessment of Shared-Space Urban Roads (P24-21444)

Panagiotis Tzouras/National Technical University of Athens (NTUA)

Integrated Econometric Models to Bridge Across Resolutions: Application to Crash Frequency and Severity Analysis (P24-21445)

Shahriar Pervaz/University of Central Florida

Developing Design-Related Behavior Indicators for Evaluating the Efficacy of Roadway Safety Design Element: A Case Study for the Design of an Exclusive Left-Turn Lane in Taiwan (P24-21446)

Tong Lin/National Yang Ming Chiao Tung University

Multi-LiDAR Tracking for Identifying Safety Relevant Events (P24-21447)

Vamsi Krishna Bandaru/Purdue University

Development of Safety Performance Measures and Modeling Crash Risk for Urban Roundabouts in Heterogeneous Traffic Conditions (P24-21448)

VINAYARAJ V S/Indian Institute of Technology, Bombay

Evaluation of Lane-Keeping Systems and Automatic Emergency Braking Systems (P24-21449)

Ye Dong/Iowa State University

2125

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 103A

Advanced Vehicle Technologies and Occupant Protection

Shashi Nambisan, University of Nevada, Las Vegas, presiding

Sponsored By Standing Committee on Occupant Protection

This session will be to address how advances in vehicle technologies relate to occupants of vehicles. It will include a brief reflection on historical developments such as seat belts, air bags, anti-lock brakes. More significantly, the panelists will comment on recent and emerging technologies related to vehicle design and operations, legislative/ regulatory matters, and their implications to minimize adverse safety outcomes for vehicle occupants.

Occupant Protection Panel (P24-21118)

Mark Chung/National Safety Council (NSC), Matthew Craig/National Highway Traffic Safety Administration (NHTSA), David Kidd/Insurance Institute for Highway Safety/VRC, Krishnaswamy Prasad/Center for Automotive Research (CAR), Reza Seyedil/zoox

2126

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 150B

Analysis of International Road Safety Data

Chou-Lin Chen, National Highway Traffic Safety Administration (NHTSA), presiding

Jagoda Egeland, Organisation for Economic Co-operation and Development (OECD), presiding

Sponsored By Standing Committee on Statewide/National Transportation Data and Information Management

The session will bring together road safety data and analysis experts to discuss the latest trends in national road safety performance and methodologies for assessing performance. The latest US data will be presented by NHTSA and the latest results of benchmarking national performance internationally will be discussed by authors of the International Transport Forum's Annual Road Safety Report and the UN WHO Global Road Safety Status report. Data collection and analytical methods for assessing performance will be examined, including those under development in the European Union, by the Asian Development Bank and by international organizations including the FIA. New opportunities for exploiting big data sources will also be considered. Time will be reserved for discussion between experts making presentations and the participants attending the session.

Global Road Safety Status Report: 2023 Edition (P24-20096)

Jagoda Egeland/Organisation for Economic Co-operation and Development (OECD)

International Transport Forum 2023 Annual Report on Road Safety: Key International Trends and Conclusions (P24-20097)

Dominique Mignot/Université Gustave Eiffel

Road Safety Developments in the United States (P24-20098)

Chou-Lin Chen/National Highway Traffic Safety Administration (NHTSA)

Road Safety Index to Assess Road Safety Performance (P24-20335)

Jacob Bangsgaard/Federation Internationale De L'Automobile

Network-Wide Road Safety Assessment: Methodology of the European Union (P24-20099)

Eva Michelaraki/National Technical University of Athens (NTUA)

Road Safety and Big Data: Youth Voices (P24-20100)

James Bradford/International Road Assessment Program

Accidents Involving E-Scooters in Urban Areas: Typical Scenarios, Injuries, and Protection Devices Assessment (P24-20101)

Michel Behr/Université Gustave Eiffel

2127



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 150A

Progress, Opportunities, and Plans with Technology Leaders

Michael Kessenich, Wisconsin Department of Transportation, presiding

Sponsored By Standing Committee on Information Systems and Technology

Are you interested in learning about the responsibilities of Transportation Technology Leaders? These professionals have a lot on their plate, from developing technology strategies to providing leadership and mentoring to their teams. You won't want to miss our upcoming panel session, where experts in the field will discuss their state's progress, opportunities, and plans. The panel will cover a variety of topics, including data governance, digital project delivery, and generative AI. Don't miss out on this engaging and informative event!

Panelist (P24-20464)

David Esse/Wisconsin Department of Transportation

Panelist (P24-20465)

April Blackburn/Rawlins IC

Panelist (P24-20490)

Glendora Fortune/Florida Department of Transportation

Panelist (P24-20839)

Jermaine Scales/Tennessee Department of Transportation

2128

CM (1.75)

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 151A

Innovative Approaches in Transportation Planning

Emily Lindsey, Denver Regional Council of Governments (DRCOG), presiding

Sponsored By Standing Committee on Transportation Planning Policy and Processes

This session will include four presentations on innovative approaches in transportation planning. Attendees will learn about the use of accessibility metrics, formation of a mobility equity cabinet, reconceptualizing urban street classifications, and community strategies for achieving GHG reduction targets.

King County Metro's Mobility Equity Cabinet: A Case of Co-Creation in Transportation (TRBAM-24-04394)

Rosalie Ray/Texas State University

Regional Planning for Accessibility in California: How Metropolitan Planning Organizations Are Using Accessibility Metrics (TRBAM-24-03145)

Hao Ding/University of California, Los Angeles

What About Reconceptualizing Street Classification in Urban Municipalities?: The Case of Kallithea, Greece (TRBAM-24-00607)

Stefanos Tsigdinos/National Technical University of Athens (NTUA), Yannis Paraskevopoulos/National Technical University of Athens (NTUA), Panagiotis Tzouras/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA)

Developing Sustainable Community Strategies for Achieving Greenhouse Gas Reduction Targets in California (P24-20986)

Annie Nam/Southern California Association of Governments

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 152B

Network Modeling in the Era of Shared Mobility

Zhengtian Xu, George Washington University, presiding

Sponsored By Standing Committee on Transportation Network Modeling

Transportation network modelers are addressing pressing challenges and exciting opportunities associated with novel shared mobility services that encompass traditional and emerging modes. Join us for a discussion about innovative ways to advance the planning and operations of future mobility systems.

Modeling and Regulating Competition Between Public Transit and Ridehailing with Geofencing Policy

(TRBAM-24-04691)

Zhenyu Yang/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Semi-on-Demand Hybrid Transit Route Design with Shared Autonomous Mobility Services (TRBAM-24-03320)

Max Ng/Northwestern University, Florian Dandl/Northwestern University, Hani Mahmassani/Northwestern University, Klaus Bogenberger/Northwestern University

Designing the Publicly-Owned Centralized Platform for Ridehailing Services with Shared Automated Vehicles

(TRBAM-24-01652)

Jinxiao Du/Hong Kong Polytechnic University, Wei Ma/Hong Kong Polytechnic University

How Does Network Complexity Impact Shared Automated Vehicle Fleet Operations?: Comparing Complete

and Incomplete Networks (TRBAM-24-05616)

Kentaro Mori/University of Texas, Austin, Fatemeh Fakharmoosavi/University of Texas, Austin, Krishna Murthy Gurumurthy/University of Texas, Austin, Kara Kockelman/University of Texas, Austin, Pedro Camargo/University of Texas, Austin

Model-Free Control for Vehicle Rebalancing via a Hierarchical Structure (TRBAM-24-02303)

Pengbo Zhu/Ecole Polytechnique Federale de Lausanne (EPFL), Giancarlo Ferrari-Trecate/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

On Non-Myopic Internal Transfers in Large-Scale Ridepooling Systems (TRBAM-24-03790)

Farnoosh Namdarpour/New York University, Bingqing Liu/New York University, Nico Kuehnel/New York University, Felix Zwick/New York University, Joseph Chow/New York University

Promoting Multidimensional Equity Through Collaborative Routing Using Incentive Mechanisms

(TRBAM-24-02174)

Chaojie Wang/Georgia Institute of Technology, Srinivas Peeta/Georgia Institute of Technology

Threshold-Based Incentives for Ridesourcing Drivers: Implications on Supply Management and Welfare Effects

(TRBAM-24-05250)

Tianming Liu/University of Michigan, Ann Arbor, Zhengtian Xu/University of Michigan, Ann Arbor, Daniel Vignon/University of Michigan, Ann Arbor, Yafeng Yin/University of Michigan, Ann Arbor, Qingyang Li/University of Michigan, Ann Arbor, Zhiwei Qin/University of Michigan, Ann Arbor

Resilient Bus Services Design in a Multimodal Network Catering to Metro System Disruption (TRBAM-24-04154)

Zhiya SU/Hong Kong University, Enoch Lee/Hong Kong University, Lijuan Wan/Hong Kong University, Qiru Ma/Hong Kong University, Kejun DU/Hong Kong University, Hong Lo/Hong Kong University

Modeling and Managing Parking and Vehicle Sharing Choices with Autonomous Vehicles (TRBAM-24-01923)

Zhuoye Zhang/University of Hong Kong, Wei Liu/University of Hong Kong, Fangni Zhang/University of Hong Kong

2130

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 152A

Exploring Strategic Workforce Development Partnerships

Victoria Beale, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Workforce Development and Organizational Excellence, Subcommittee on Organizational Management, Standing Committee on Research Innovation Implementation Management, Standing Committee on Information and Knowledge Management, International Coordinating Council, Rural Transportation Issues Coordinating Council

Learn how state departments of transportation, contractors, educational institutions, workforce development boards, and non-profits are partnering together to identify, train, place and retain individuals into heavy highway construction careers. An overview of FHWA's Strategic Workforce Development program will be shared along with examples of successful partnerships in Texas, Arizona, and Oregon.

Overview of the Federal Highway Administration's Strategic Workforce Development Program (P24-20381)

Christina Currier/Federal Highway Administration (FHWA)

ConnectU2 Jobs (P24-20008)

Michael Bryant/Texas Department of Transportation

Successful Partnerships in Phoenix (P24-20009)

Corey Foster/Arizona Associated General Contractors

Increasing Diversity in Oregon's Heavy Highway Construction Workforce (P24-20382)

Larry Williams/Oregon Bureau of Labor and Industries

2131 CM (1.75)

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 151B

Equity Considerations in Road Usage Charging

Susan Binder, Cambridge Systematics, presiding

Sponsored By Standing Committee on Economics and Finance

This session addresses equity aspects of road usage charge adoption from three user perspectives. Each will help frame the context of fairness, raise research needs and influence evaluation of mechanisms. For each topic, a presenter and a discussant will speak. 1) Commercial users: How should/could RUCs apply to commercial vehicles if RUCs were widely adopted? 2) Unbanked/underbanked user populations: Are there lessons learned from the tolling to fairly address this portion of the population? 3) Electric vehicle users: New fees to compensate from the loss of traditional fuel tax revenues could be viewed as contradictory to achieving cleaner energy goals. What are the equity considerations for electric vehicles?

Implications of RUC for the Trucking Industry (P24-20626)

Jeffrey Short/American Transportation Research Institute (ATRI), Marygrace Parker/The Eastern Transportation Coalition

Lessons Learned for the Road Usage Charge: Tolling and the Unbanked (P24-20627)

Andrew Peppard/Kapsch TrafficCom USA, Inc., Lev Pinelis/Toll Insight

Equity in Road User Charging for Electric Vehicles: Insights from Minority Perspectives (P24-20628)

Nneoma M. Ugwu/University of Maryland, College Park, Jeffrey Kupko/Michael Baker International, Inc.

2132

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 156

The Legal Environment on Diversity, Equity, and Inclusion

Lakwame Anyane-Yeboah, Office of the Secretary of Transportation (OST), presiding
Sponsored By Standing Committee on Contracting Equity, Standing Committee on Contract Law

The Supreme Ct's. decision in *Students for Fair Admissions v. Harvard* held that universities that use race-based criteria for admissions based on diversity do not satisfy the "strict scrutiny" standard and are unconstitutional. A US District Court in *Ultima Servs. Corp. v. U.S. DOA* enjoined the US SBA 8(a) Business Development Program from providing a "rebuttable presumption" of disadvantage to small business owners within certain racial and ethnic categories. This session considers the legal environment involving these cases, contracting equity and DBE/MBE/WBE programs, and the implementation of these programs by state and local governments. Speakers will explore the present legal landscape, potential alternatives, and related topics.

The Legal Environment on Diversity, Equity, and Inclusion (P24-20904)

Colette Holt/Colette Holt & Associates, Cydonii Fairfax/Metropolitan Transit Authority of Harris County, TX, Otis Johnson/Metropolitan Transit Authority of Harris County, TX

2133

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 201

Build America, Buy America

Jeff Graham, Texas Department of Transportation, presiding
Sponsored By Standing Committee on General Law

The Build America, Buy America Act (BABA), a key piece of the Infrastructure Investment and Jobs Act (IIJA), significantly changed the domestic preference requirements on Federal-aid projects with its enactment in 2021. Recent events have made this discussion even more informational. Transportation stakeholders continue to discuss the scope of the new BABA requirements and their implementation. This session will address: 1) BABA requirements generally, including implementing rules and waivers to date; 2) recent updates and guidance; 3) documenting and certifying compliance with BABA requirements; and 4) the role of the Office of the OMB's new Made in America Office in implementing BABA, including its role in the revised waiver process.

Panel Discussion (P24-20102)

Ben Jones/Mississippi Department of Transportation, Lance Simmons/Texas Department of Transportation, Ryan Gaulke/Minnesota Department of Transportation

2134

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 204AB

Emerging Technologies for Bridge Evaluation, Inspection, and Decision Support

Sponsored By Standing Committee on Testing and Evaluation of Transportation Structures

Rapid Evaluation and Decision Making for Concrete Bridges (TRBAM-24-01653)

Marwaan Debees/University of Central Florida, Fikret Catbas/University of Central Florida

Framework of Bridge Quality Inspection Using Digital Twin (P24-20444)

Xinxing Yuan/Stantec, Fernando Moreu/University of New Mexico, Sreenivas Alampalli/Stantec

Parametric Study on Transversely Cracked Polyester Polymer Concrete Bridge Deck Girder with Rectangular Voids (TRBAM-24-01326)

Dachina Gunasekaran/University of Illinois, Urbana-Champaign, Bassem Andrawes/University of Illinois, Urbana-Champaign

2135

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 202A

Pavement Opening Strength: Why Not Maturity?

Angela Folkestad, CO/WY Chapter of ACPA, presiding

Jagan Gudimettla, Brick & Byte, Inc, presiding

Sponsored By Standing Committee on Concrete Pavement Construction and Rehabilitation, Standing Committee on Advanced Concrete Materials and Characterization

Overview of the Maturity Method and ASTM C1074 to Estimate Concrete Strength (P24-20253)

Anton Schindler/Auburn University

Iowa Department of Transportation's 25 Years of Experience with Maturity Testing (P24-20254)

Jim Grove/ATI, Inc.

American Association of State Highway and Transportation Officials Maturity Test Method for Pavements (P24-20929)

Armen Amirkhaniyan/University of Alabama

The Evolution of Technology for Maturity Testing (P24-20255)

Sabrina Garber/Transtec Group, Inc.

2136

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 207A

Cross-Examining the Cross-Section

Shreyas Bharadwaj, Rummel, Klepper, and Kahl, LLP (RK&K), presiding

Sponsored By Standing Committee on Performance Effects of Geometric Design

Recommendations for Optimizing Roadway Cross-Section on Texas Highways (TRBAM-24-04354)

Marcus Brewer/Texas A&M Transportation Institute, Srinivas Geedipally/Texas A&M Transportation Institute, Michael

Pratt/Texas A&M Transportation Institute, Karen Dixon/Texas A&M Transportation Institute

The Traffic Calming Effect of Delineated Bicycle Lanes (TRBAM-24-02371)

Hannah Younes/Rutgers University, Clinton Andrews/Rutgers University, Robert Noland/Rutgers University, Jiahao

Xia/Rutgers University, Song Wen/Rutgers University, Wenwen Zhang/Rutgers University, Leigh Ann Von Hagen/Rutgers

University, Dimitri Metaxas/Rutgers University, Jie Gong/Rutgers University

Horizontal Curve Safety Performance Evaluation Based on Naturalistic Vehicle Lane Position Data (TRBAM-24-04137)

Boris Claros/University of Wisconsin, Madison, Madhav Chitturi/University of Wisconsin, Madison, Glenn

Vorhes/University of Wisconsin, Madison, Andrea Bill/University of Wisconsin, Madison, David Noyce/University of

Wisconsin, Madison

A Non-Motorized Lane Design Methodology for Considering Mixed Traffic Flow Conflicts (TRBAM-24-05401)

Jin Shao/Chang'an University, Linjian Liu/Chang'an University, Zhenwei Sun/Chang'an University, Shujuan Liang/Chang'an

University, Jinhua Xu/Chang'an University, Yan Li/Chang'an University

2137

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 101

Advances in Traffic Barrier Design

Mark Ayton, Safe Roads R&D, Inc., presiding

Sponsored By Standing Committee on Roadside Safety Design

Design and Crash Testing of Surface-Mounted Median Guardrail System (TRBAM-24-04756)

Nauman Sheikh/Texas A&M Transportation Institute, Roger Bligh/Texas A&M Transportation Institute

Vehicle Collision Load Design Demands for Deck Overhangs with Parapet Railings (TRBAM-24-05270)

Andrew Loken/University of Nebraska, Lincoln, Joshua Steelman/University of Nebraska, Lincoln, Robert

Bielenberg/University of Nebraska, Lincoln, Scott Rosenbaugh/University of Nebraska, Lincoln, Ronald Faller/University of

Nebraska, Lincoln

(continued)

MASH TL-3 Evaluation of the Hawaii Department of Transportation 34-Inch Tall, Aesthetic Bridge Rail with Pedestrian Rail and Sidewalk Options (TRBAM-24-04237)

Cody Stolle/University of Nebraska, Lincoln, Robert Bielenberg/University of Nebraska, Lincoln, Ronald Faller/University of Nebraska, Lincoln, Sina Changizian/University of Nebraska, Lincoln, Kimberly Okamura/University of Nebraska, Lincoln, Steven Yoshida/University of Nebraska, Lincoln, Dean Takiguchi/University of Nebraska, Lincoln

Design and Testing of MASH TL-3 Anchored Precast Narrow Base Roadside Concrete Barrier (TRBAM-24-04090)

Sofokli Cakalli/Texas A&M University, Nauman Sheikh/Texas A&M University, James Kovar/Texas A&M University, Chiara Dobrovolny/Texas A&M University

2138

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 204C

Building Information Modeling in Design and Construction

Curtis Clabaugh, ESP Associates, Inc., presiding

Sponsored By Standing Committee on Geospatial Data Acquisition Technologies

openBIM in Transportation Infrastructure: A Framework Aligning ISO 19650 and IFC (TRBAM-24-04122)

Marjan Sadeghi/HDR, Mohammed Mehany/HDR

Challenges and Intersection of Above-Ground Building Information Modeling Certainty Versus Below-Ground Uncertainty (P24-21307)

Jim Anspach/Iowa State University

Challenges and Future Perspective: Building Information Modeling for Public Infrastructure Projects (P24-21308)

Hani Alzraiee/California Polytechnic State University

2139

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 207B

Slopes: Susceptibility, Uncertainty, Monitoring, and Risk

Vanessa Bateman, U.S. Army Corps of Engineers (USACE), presiding

Sponsored By Standing Committee on Engineering Geology

The Simulation of Extreme Rainfall During Hurricane Ida on Highway Slopes in Mississippi (TRBAM-24-05910)

Rakesh Salunke/Jackson State University, Audrika Nahian/Jackson State University, Mohammad Sadik Khan/Jackson State University

Uncertainty Reduction Strategies to Enhance Geotechnical Site Characterization: A Case Study of the Red Roof Landslide in Wyoming (TRBAM-24-00727)

Opeyemi Oluwatuyi/University of Wyoming, Kam Weng Ng/University of Wyoming, Shaun Wulff/University of Wyoming, Taylor Ree/University of Wyoming

Refined Highway Slope Hazard Susceptibility Based on Satellite Remote Sensing and Machine Learning (TRBAM-24-00278)

Zhipeng Wang/Southeast University, Junqing Zhu/Southeast University, Tao Ma/Southeast University

Photo Monitoring as a Tool for Monitoring Landslides: A Technology Within Everyone's Reach (TRBAM-24-01663)

ANTONIO COSENTINO/University of Rome La Sapienza Department of Earth Sciences: Universita degli Studi di Roma La Sapienza Dipartimento di Scienze della Terra, Alessandro Brunetti/University of Rome La Sapienza Department of Earth Sciences: Universita degli Studi di Roma La Sapienza Dipartimento di Scienze della Terra, Paolo Mazzanti/University of Rome La Sapienza Department of Earth Sciences: Universita degli Studi di Roma La Sapienza Dipartimento di Scienze della Terra

2140

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 209AB

Advancements in Resiliency of Geotechnical Assets

Jerry DiMaggio, Applied Research Associates, Inc., presiding

Ahmad A Alhasan, Applied Research Associates, Inc., presiding

Sponsored By Standing Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials, Standing Committee on Geotechnical Instrumentation and Modeling

This session focuses on current state of the practice, state of the art, case studies, and the future needs to assess resiliency of geotechnical assets and their ability to respond to hazardous events, trends, or disturbances related to climate and environmental changes. The discussion will include quantitative assessment, design, data driven analysis, planning, policy, and recent trends for using big data.

Assessment of Landslide Impacts Along Oregon Lifelines Considering Extreme Precipitation and Seismic Events (P24-20640)

Ben Leshchinsky/Oregon State University

Quantitative Data-Driven Resiliency Assessment of Geotechnical Assets (P24-20641)

Ahmad A Alhasan/Applied Research Associates, Inc.

Resiliency and Geohazards (P24-20643)

Bailey Theriault/Geosyntec

Resilience-Based Design and Functional Recovery (P24-20642)

Sissy Nikolaou/National Institute of Standards and Technology

2141

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 102A

Fundamentals of Geosynthetic Interlayers in Asphalt Pavements

John Donahue, Applied Research Associates, Inc., presiding

Sponsored By Standing Committee on Geosynthetics, Section - Pavements, Subcommittee on Interlayer Systems to Control Reflective Cracking

This lectern session will provide an overview of the use of geosynthetics as interlayers in hot-mix asphalt applications. The session will cover the past, present, and future of pavement interlayers, with an emphasis on the practical elements of this technology. An outline for this session is as follows: Interlayer Fundamentals (Fred Chuck, GMA) QA/QC Testing for Asphalt Interlayer Products (Nicholas Reck, Solmax) Installation Fundamentals for Academics (Tripp Bishop, American Paving Fabrics) Case History of a Chip Seal with a Paving Fabric (Brian Collins, BGC Engineering) Full-Scale Field Investigations on Performance of Geosynthetic-Reinforced Asphalt (Vinay Kumar, UT-Austin) State-of-the-Art, Implementation, Challenges (All) Discussion (All)

Interlayer Fundamentals (P24-20970)

Fred Chuck/Geosynthetic Materials Association (GMA)

Quality Assurance and Quality Control Testing for Asphalt Interlayer Products (P24-20971)

Nicholas Reck/Solmax

Installation Fundamentals for Academics (P24-20978)

Claude Bishop/American Paving Fabrics, Inc.

Case History of a Chip Seal with a Paving Fabric (P24-20975)

Brian Collins/BGC Engineering Inc

Full-Scale Field Investigations on Performance of Geosynthetic-Reinforced Asphalt (P24-20977)

Vinay Kumar Vasanthkumar/HUESKER Inc.

2142

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 202B

Innovative Ground Penetrating Radar Applications for Pavement Condition Evaluation

Travis Walbeck, National Center for Asphalt Technology (NCAT), presiding

Gerardo Flintsch, Virginia Polytechnic Institute, presiding

Sponsored By Standing Committee on Pavement Condition Evaluation

The session presents a series of innovative applications of Ground Penetrating radar (GPR) to assess the condition of pavements at the network and project level.

Real-Time Asphalt Pavement Layer Thickness Prediction Using Ground-Penetrating Radar Based on a Modified Extended Common Mid-Point Approach (TRBAM-24-00798)

Siqi Wang/Southeast University, Jiulonghu, Zhen Leng/Southeast University, Jiulonghu, Xin Sui/Southeast University, Jiulonghu, Tao Ma/Southeast University, Jiulonghu, Weiguang Zhang/Southeast University, Jiulonghu, Zehui Zhu/Southeast University, Jiulonghu

An Encoder-Decoder Model for Pavement Subsurface Crack Detection and Size Estimation Using Ground-Penetrating Radar Data (TRBAM-24-02332)

Yuxi Zhang/Purdue University, Zirui Hong/Purdue University, Yeji Hong/Purdue University, Hubo Cai/Purdue University

Traffic Speed Ground-Coupled 3D Ground-Penetrating Radar (TRBAM-24-05747)

Wayne Muller/Coded Radar, Bryan Reeves/Coded Radar

Non-Destructive Techniques for Evaluating Pavements with Unusual Surface Distresses: Two Case Studies in Louisiana (TRBAM-24-03505)

Moses Akentuna/Louisiana Department of Transportation and Development, Qiming Chen/Louisiana Department of Transportation and Development, Zhongjie Zhang/Louisiana Department of Transportation and Development, Tyson Rupnow/Louisiana Department of Transportation and Development

2143

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 103B

Delivering Highway Maintenance: What Prompts the Work

Rob Zilay, Dye Management Group, Inc., presiding

Sponsored By Standing Committee on Maintenance and Operations Management

Analysis of Pore Water Pressure Effect in Asphalt Patch Failure: An Integrated Modelling and Experiment Study (TRBAM-24-03081)

Xiao Chen/Rutgers University, Hao Wang/Rutgers University

Multi-Dimensional Index Detection of Pothole Based on Stereoscopic Vision (TRBAM-24-02853)

Bingjin Ren/Tongji University, Zhao Du/Tongji University, Xingyi Zhu/Tongji University

A Novel Approach Leveraging Augmented Data and State-of-the-Art Detection Models for Efficient Real-Time Road Surveillance (TRBAM-24-05128)

Avnish Panwar/Indian Institute of Technology, Roorkee, Kaliprasana Muduli/Indian Institute of Technology, Roorkee, Faiz Ali/Indian Institute of Technology, Roorkee, Indrajit Ghosh/Indian Institute of Technology, Roorkee

Scene-Adaptive Pavement Maintenance Optimization Model: A Reinforcement Learning Approach from Expert Feedback (TRBAM-24-01683)

Wenyuan Cai/Tongji University, Chenglong Liu/Tongji University, Qian Gao/Tongji University, Yishun Li/Tongji University, Yuchuan Du/Tongji University

2144

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 206

Structure Inspection and Evaluation Technologies

Jennifer Wells, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Structures Maintenance

This session includes inspection and evaluation technologies for bridges and other structures, which include UAV (drones) and 3D scanning.

Computational Fluid Dynamics Visualization for Unmanned Aerial Systems in Bridge Inspections

(TRBAM-24-00010)

Kristoffer Borgen/Purdue University, John Mott/Purdue University

A General Method for Pre-Flight Preparation in Data Collection for Uncrewed Aerial Vehicle-Based Bridge Inspection (TRBAM-24-02825)

Pouya Almasi/New Mexico State University, Yangjian Xiao/New Mexico State University, Hao Yin/New Mexico State University, Jonathan Boyle/New Mexico State University, David Jauregui/New Mexico State University, Zhe Wan/New Mexico State University, Qianyun Zhang/New Mexico State University

Experimental Evaluation of 3D Imaging Technologies for Structural Assessment of Masonry Retaining Walls

(TRBAM-24-04945)

Maxwell Wondolowski/University of Connecticut, Alexandra Hain/University of Connecticut

3D Scanning Technology Framework: From Bridge Inspection to Evaluation (TRBAM-24-05410)

Deven Kanakamedala/Purdue University, Jinwu Xiao/Purdue University, Ha Kyun Ju/Purdue University, Jungil Seo/Purdue University, Kyubyung Kang/Purdue University, Amit Varma/Purdue University

2145

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 209C

Practical Innovations for Maintenance Management Decision Making

Steven Griffith, Roy Jorgensen Associates, Inc., presiding

Sponsored By Standing Committee on Maintenance Management Systems, Standing Committee on Visualization in Transportation

In this session, we dive into the practical innovations for maintenance management decision-making. Starting off, we explore the transformative potential of AI in real-time monitoring, especially when it comes to traffic signs deficiencies. Moving forward, attendees will be introduced to the practical side of using digital twins for asset data management, with a focus on safety hardware assets. The session culminates with a panel discussion where experts will share insights and best practices on how to effectively capture and seamlessly integrate cost data into maintenance management systems. Get ready for a blend of cutting-edge research and hands-on expertise in maintenance management!

AN AI-DRIVEN Approach for REAL-TIME DETECTION OF TRAFFIC SIGNS DEFICIENCIES (TRBAM-24-06414)

Mohammad Karasneh/University of Cincinnati, Dmitry Manasreh/University of Cincinnati, Chris Berner/University of Cincinnati, Younis Matouq/University of Cincinnati, Munir Nazzal/University of Cincinnati

Practical Application of Digital Twins for Transportation Asset Data Management: Case Example of a Safety Hardware Asset (TRBAM-24-04032)

Ashtarout Ammar/Virginia Polytechnic Institute, Francesca Maier/Virginia Polytechnic Institute, William Pratt/Virginia Polytechnic Institute, Elaine Richard/Virginia Polytechnic Institute, Gabriel Dadi/Virginia Polytechnic Institute

Maintenance Data Integration Discussion Panel (P24-20560)

Charles Pilson/Mott MacDonald, LLC, Omidreza Shoghli/University of North Carolina, Charlotte

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 146C

Optimizing the Pre-National Environmental Policy Act Phase for Section 106 Compliance

Steve Archer, Maryland Department of Transportation, presiding

Sponsored By Standing Committee on Historic and Archeological Preservation in Transportation

Changing Federal timeline requirements provide an incentive to maximize the earliest phases of project planning to consider historic properties and set up a successful approach to consultation and review under Section 106 of the National Historic Preservation Act. While regulatory, policy and funding constraints put boundaries on some aspects of the process, participants in this panel discuss current policy, successful case studies, and considerations for robust strategies in the pre-NEPA stages. Tools such as PEL (Planning and Environmental Linkages), and similar efforts will be discussed and lessons learned will be provided. Panel participants include Advisory Council on Historic Preservation, Federal Highway Administration, State Department of Transportation, and consultant perspectives on successful approaches to pre-NEPA consideration of historic resources.

Federal Highway Administration Perspectives (P24-20482)

David Clarke/Federal Highway Administration (FHWA)

Advisory Council on Historic Preservation Perspectives (P24-20483)

Mandy Ranslow/Advisory Council on Historic Preservation

Section 106 Perspectives from the Pennsylvania Department of Transportation (P24-20485)

Kevin Mock/Pennsylvania Department of Transportation

Making Planning and Environmental Linkages and Cultural Resources Lemonade (P24-20487)

Tait Elder/Parametrix, January Tavel/Parametrix

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 146A

An Examination of Transportation Needs and Preferences Through Comparative Geographies

Collin Yarbrough, Southern Methodist University, presiding

Sponsored By Standing Committee on Community Resources and Impacts

Achieving 10-Minute Neighborhoods in Underinvested Communities: Understanding Transportation Opportunities and Challenges Through Resident Stories (TRBAM-24-05221)

Katherine Idziorek/University of North Carolina, Charlotte, Michelle Zuñiga/University of North Carolina, Charlotte

Limited Car Access and Rural Mobility in Vermont (TRBAM-24-05014)

Sarah Grajdura/University of Vermont College of Engineering and Mathematical Sciences, Sierra Espeland/University of Vermont College of Engineering and Mathematical Sciences, Julia LanzDuret-Hernandez/University of Vermont College of Engineering and Mathematical Sciences, Dana Rowangould/University of Vermont College of Engineering and Mathematical Sciences

Measuring Accessibility Enhancements in Areas with Zero Auto Ownership: A Case Study of the Commonwealth of Pennsylvania (TRBAM-24-04554)

Catherine Suria/Pennsylvania State University, Harrisburg, Nikhil Menon/Pennsylvania State University, Harrisburg, Douglas Halpert/Pennsylvania State University, Harrisburg, Chelsea Davis/Pennsylvania State University, Harrisburg, Ransford (Randy) McCourt/Pennsylvania State University, Harrisburg, Lisa Losada Rojas/Pennsylvania State University, Harrisburg

Quality Measurement and Spatial Correlation Analysis of "15-Minute City" from the Perspective of Inclusive Development: A Case Study of Shanghai Downtown Area (TRBAM-24-06433)

Jingjie Cui/Tongji University, Haixiao Pan/Tongji University, Xinyi Wang/Tongji University

2148

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 146B

6-Minute Showcase: Sustainability, Resilience, and Society

Brittney Gick, Texas A&M Transportation Institute, presiding

Tia Boyd, USF Center for Urban Transportation Research, presiding

Sponsored By Section - Transportation Systems Resilience, Subcommittee on Young Members-Sustainability and Resilience

The Young Member Council for the Sustainability and Resilience Group (YMC - S&R) is sponsoring a forum at the Transportation Research Board (TRB) Annual Meeting in January that will feature 6-minute presentations by students and young professionals (35 and under) on their sustainability, resilience, or society-related innovative research or effective practice. After the presentation, students and young professionals will receive mentorship from three experts from each of the three fields. This will be a fast-paced and exciting forum for participants to showcase their work and gain communication and persuasive skills!

Analyze Crashes During Extreme Weather (P24-20284)

Ruijie Bian/Louisiana Transportation Research Center (LTRC)

Strengthening Public Transit Equity in Evacuation Planning Through a Community-Centered Approach (P24-20286)

Veronica Wambura/University of Alberta

Fostering the Transition to Electric Buses: An In-Depth Analysis of Institutional Enablers for Sustainable Public Mobility (P24-20287)

Ann Mary Varghese/Indian Institute of Technology, Kharagpur

When the Stakes Are High: Measuring Feelings of Safety in Wildfire Evacuations (P24-20285)

Sarah Grajdura/University of Vermont

Inclusive Transportation System and Understanding Mode Choice Behavior of People with Disabilities: A Case Study in Utah (P24-20288)

Megh Bahadur KC/Utah State University

Charging Infrastructure Deployment Suitability in Illinois and the Transition from Gas Stations (P24-20372)

Jiewen Luo/University of Massachusetts, Amherst

2149

CM (1.75)

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 140

The Unhoused in Transportation: A Conversation on the Issue in Transportation Rights-of-Way and Assets

Steven Eget, WSP, presiding

Sponsored By Standing Committee on Resource Conservation and Recovery

The homelessness crisis has reached epidemic levels in countless regions across the United States. There are multiple strategies employed by policymakers to bring all the stakeholders together to understand, strategize, and act upon this crisis. But there is not one size fits all strategy and the outcomes vary. This session will bring one set of perspectives that will focus on the research work and engagement with the unhoused relative to transportation rights of way. This will also be an informal forum to bring to light related strategies that could be explored in the future.

Perspectives in the Use Right-of-Way Outlined in the Study Homelessness: A Guide for Public Transportation (P24-20434)

John MacArthur/Portland State University

Case Study on Texas Department of Transportation (DOT) Model for Partnerships for Homelessness Relief Using DOT RW and Property (P24-20436)

Miguel Arellano/Texas Department of Transportation, Lori Wagner/Texas Department of Transportation

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 145A

First- and Last-Mile Connections to Transit: Shared Micromobility and Microtransit

David Kuehn, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Innovative Public Transportation Services and Technologies, Standing Committee on Public Transportation Planning and Development, Standing Committee on Passenger Intermodal Facilities, Standing Committee on Bus Transit Systems

This lectern session will feature a selection of shared micromobility and microtransit papers examining first and last mile connections to public transportation, such as when services complement and compete with public transportation.

Shared Micromobility as a First- and Last-Mile Transit Solution: Insights from a Novel Data Set (TRBAM-24-00227)

Zehui Yin/University of Florida, Greg Rybarczyk/University of Florida, Anran Zheng/University of Florida, Lin Su/University of Florida, Bingrong Sun/University of Florida, Xiang Yan/University of Florida

Determinants of Microtransit Demand: Econometric Analysis Using Trip Microdata (TRBAM-24-03958)

Subid Ghimire/North Carolina State University, Eleni Bardaka/North Carolina State University

Innovative On-Demand Transit for First-Mile Trips: A Cutting-Edge Approach (TRBAM-24-04732)

Seyed Mehdi Meshkani/Concordia University, Siavash Farazmand/Concordia University, Nizar Bouguila/Concordia University, Zachary Patterson/Concordia University

AccEq-DRT: Planning Demand-Responsive Transit to Reduce the Inequality of Accessibility (TRBAM-24-04912)

Duo WANG/TELECOM INT: TELECOM SudParis, Andrea Araldo/TELECOM INT: TELECOM SudParis, Mounîm A. El Yacoubi/TELECOM INT: TELECOM SudParis

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 144AB

Special Topics on Transit Collisions and Events

Lisa Staes, USF Center for Urban Transportation Research, presiding

Sponsored By Standing Committee on Transit Safety and Security

Influence of Transit Signal Priority on Crash Severity: An Empirical Assessment Using the Bayesian Logit Model with Unobserved Heterogeneity (TRBAM-24-04538)

MD Sultan Ali/CHA Consulting, Inc., John Kodi/CHA Consulting, Inc., Enock Mwambeleko/CHA Consulting, Inc., Priyanka Alluri/CHA Consulting, Inc., Tobias Sando/CHA Consulting, Inc.

An Ensemble Learning-Based Neural Network Model for Predicting Urban Rail Transit Accident Consequences Category (TRBAM-24-05672)

□ □/Kunming University of Science and Technology, Weiyi Liu/Kunming University of Science and Technology, Xinyao Li/Kunming University of Science and Technology, Paul Schonfeld/Kunming University of Science and Technology, Bo Du/Kunming University of Science and Technology

Comprehensive analyses of tram-involved crashes in Japan (TRBAM-24-06526)

Yefan Yang/Central South University, Jaeyoung Lee/Central South University, Marco Bassani/Central South University, Emanuele Sacchi/Central South University

Transit Collisions: Data Overview and Federal Transit Administration Research Initiatives (P24-20985)

Ivey Glendon/Federal Transit Administration (FTA), Roy Chen/Federal Transit Administration (FTA)

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 147A

Freight Rail Transportation Research Needs

Tom Burns, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Freight Rail Transportation

Panel Discussion (P24-21034)

Pasi Lautala/Michigan Technological University, French Thompson/BNSF Railway, Tyson Moeller/Union Pacific Railroad, Joe Arbona/Genesee & Wyoming, Inc.

2153

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 145B

Current Trends in Rail Transit Infrastructure Research

Hugh Fuller, HNTB, presiding

Sponsored By Standing Committee on Rail Transit Infrastructure Design and Maintenance

This session is designed for those interested in learning cutting-edge concepts for improved track design and maintenance. We will explore topics on various and varied railway track issues, from automated ballast inspections to remote monitoring of track modulus transition locations. We invite you to learn more about what researchers are investigating and how it can inform your agency's infrastructure decisions.

Quantifying the Influence of Track Deflection on Track Deterioration Mechanisms Through Finite Element Simulations (TRBAM-24-03986)

Shushu Liu/Changeis Inc, Theodore Sussmann/Changeis Inc

Toward Automated Field Ballast Condition Evaluation: Field Validation of the Ballast Scanning Vehicle Capabilities (TRBAM-24-04655)

Jiayi Luo/University of Illinois, Urbana-Champaign, Kelin Ding/University of Illinois, Urbana-Champaign, Haohang Huang/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, John Hart/University of Illinois, Urbana-Champaign, Hugh Thompson/University of Illinois, Urbana-Champaign, Theodore Sussmann/University of Illinois, Urbana-Champaign

Performance Evaluation of Rail-Mounted, Quasi-Distributed Optical Fiber Sensors for Monitoring Track Transitions (TRBAM-24-04674)

Mahsa Gharizadehvarnosefaderani/Oklahoma State University, Md. Fazle Rabbi/Oklahoma State University, Cameron Stuart/Oklahoma State University, Debakanta Mishra/Oklahoma State University

Toward Automated Field Ballast Condition Evaluation: Development of I-BALLAST Image Analysis Software (TRBAM-24-04685)

Kelin Ding/University of Illinois, Urbana-Champaign, Jiayi Luo/University of Illinois, Urbana-Champaign, Haohang Huang/University of Illinois, Urbana-Champaign, John Hart/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Hugh Thompson/University of Illinois, Urbana-Champaign, Theodore Sussmann/University of Illinois, Urbana-Champaign

Toward Large-Scale Simulation of Railroad Dynamics: Coupled Train-Track-DEM Model (TRBAM-24-05791)

Zhongyi Liu/University of Illinois, Urbana-Champaign, Travis Shoemaker/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Youssef Hashash/University of Illinois, Urbana-Champaign

2154

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 147B

Current Research on International Trade and Transportation

Daniel Hackett, Hackett Associates, LLC, presiding

Sponsored By Standing Committee on International Trade and Transportation

This hybrid lectern and poster session will include recent and ongoing research on the topic of international trade and transportation. Topics include cross-border container drayage scheduling; trade policy dynamics at Lower Mississippi river ports; estimating origins/destinations for import/export flows; the impact of climate change on the Panama Canal; and a supply chain risk assessment for electric vehicle battery manufacturers. Time will be allotted to allow people to follow up with the presenters on their research following the presentations.

Robust Optimization of Multi-Regional Truck Scheduling for China-ASEAN Cross-Border Container Drayage (TRBAM-24-00366)

Zhiming Fang/Southeast University, Jie He/Southeast University, Jian Gong/Southeast University, Yuntao Ye/Southeast University, Zhang Hao/Southeast University, Zhang Changjian/Southeast University

Examining Transportation and International Trade Policy Dynamics Through the Advocacy Coalition Framework: A Case Study of the Lower Mississippi River Ports (TRBAM-24-05267)

Bethany Stich/University of New Orleans, Faisal Mallum/University of New Orleans, Brittany Waggener/University of New Orleans

(continued)

A Method for Estimating Origins and Destinations for Multimodal, Multi-Commodity Import and Export Flows by Coupling Provincial and Interregional Input-Output Tables (TRBAM-24-05423)

Muhammad Safdar/Wuhan University of Technology, Ming Zhong/Wuhan University of Technology, Zhi Ren/Wuhan University of Technology, Asif Raza/Wuhan University of Technology, Haowei Zhao/Wuhan University of Technology

Impact of Climate Change on Maritime Shipping Performance in the Panama Canal (P24-20788)

EunSu Lee/New Jersey City University, Eun-Soo Kim/Korea Maritime Institute

Supply Chain External Risk Assessment on the Korean Electric Vehicle Battery's Manufacturers in the United States from the Perspective of Container Logistics (P24-20790)

Eun-Soo Kim/Korea Maritime Institute, EunSu Lee/New Jersey City University

2155 CM (1.75)

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 143AB

A Retrospective Analysis in Aviation Pandemic Relief Programs

Pamela Keidel-Adams, Kimley-Horn and Associates, Inc., presiding

Sponsored By Standing Committee on Aviation Administration and Policy, Standing Committee on Aviation Economics and Forecasting, Standing Committee on Airport Terminals and Ground Access

There were many pandemic relief programs created to sustain the aviation industry due to the devastating impacts to commercial passenger activity and other facets of aviation demand. The FAA managed several programs for airports, while airlines worked directly with the US Treasury Department on federal aid for payroll support. State aviation agencies that work with individual airports also realized a variety of impacts as a result of the federal programs, some positive and others negative. This session will provide a retrospective of the various programs and analysis of their impacts to state aviation, airports, and airlines. The session will identify potential lessons learned to respond to future major disruptions in the aviation industry.

Overview of Federal Aviation Administration COVID-Related Funding Programs (P24-20262)

David Cushing/Federal Aviation Administration (FAA)

Minnesota's Perspective on Aviation Pandemic Relief Funding (P24-20263)

Ryan Gaug/Minnesota Department of Transportation

The Impact of COVID Relief Programs on Hartsfield-Jackson Atlanta International Airport (P24-20264)

Bryan Benefiel/Hartsfield-Jackson Atlanta International Airport

An Airline Perspective on COVID Funding (P24-20265)

John Gebo/United Airlines, Inc.

2156

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 143C

Hot Topics in Aviation Resilience and Emergency Management

Gaël Le Bris, WSP, presiding

Sponsored By Standing Committee on Aviation Safety, Security and Emergency Management

The Heterogeneous Influence of Air Transport on the Spread of COVID-19 in the Perspective of Airport Cluster (TRBAM-24-01323)

Jialin Lv/Nanjing University of Aeronautics and Astronautics, Danwen Bao/Nanjing University of Aeronautics and Astronautics, Shijia Tian/Nanjing University of Aeronautics and Astronautics, Liping Yin/Nanjing University of Aeronautics and Astronautics, Yanjun Wang/Nanjing University of Aeronautics and Astronautics

Travelers' Satisfaction Toward Perceived Safety and Security of Airport Access Trips: An Empirical Analysis Before and During the COVID-19 Pandemic (TRBAM-24-01443)

Gongda Yu/University at Buffalo, SUNY, Sheikh Shahriar Ahmed/University at Buffalo, SUNY, Jiajun Pang/University at Buffalo, SUNY, Grigorios Fountas/University at Buffalo, SUNY, Irina Bedyk/University at Buffalo, SUNY, Panagiotis Anastasopoulos/University at Buffalo, SUNY

Layout and Performance Optimization of Barcelona Airport Security Filter (TRBAM-24-06135)

Masoud Reihanifar/University of California, Berkeley, Emin Burak Onat/University of California, Berkeley, Francesc Robuste/University of California, Berkeley, Mark Hansen/University of California, Berkeley

(continued)

Digitally Twinned Risk-Based Asset Management for Airport Infrastructure (TRBAM-24-06457)

Irina Stipanovic/University of Belgrade, Sandra Skaric Palic/University of Belgrade, Emir Ganić/University of Belgrade, Mohannad Darwish/University of Belgrade

2157

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, 144C

Ports and Port States: Managing Safety in a Challenging Environment

Joseph Myers, ABS Consulting, presiding

Sponsored By Standing Committee on Marine Safety and Human Factors

Mechanisms and Effectiveness of Port State Control Inspection Based on Dynamic Bayesian Network (TRBAM-24-01247)

Lixian Fan/Shanghai University, Mengru Wang/Shanghai University

Research on Dynamic Influence Mechanism of Port State Control and Ship Risk Level (TRBAM-24-01246)

Lixian Fan/Shanghai University, Zhenzhen Zhao/Shanghai University

Joint Scheduling of Vessel and Pilot in Uni-Directional, Multi-Junction Waterways of Port Waters (TRBAM-24-03485)

zicheng xia/Dalian University of Technology, zijian guo/Dalian University of Technology, li ren/Dalian University of Technology, Ying Jiang/Dalian University of Technology

2158



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Ballroom A

U.S. Department of Transportation: National Blueprint for Transportation Decarbonization at One Year

Carlos Monje, U.S. Department of Transportation Office of the Under Secretary for Policy, presiding

Sponsored By Executive Committee

One year ago, the U.S. National Blueprint for Transportation Decarbonization was released by the Department of Transportation, Department of Energy, the Department of Housing and Urban Development, and the U.S. Environmental Protection Agency. This session will take stock of the progress made thus far in advancing a clean, efficient, and convenient transportation system; discuss barriers to overcome moving forward; and announce priorities as the nation works to realize a transportation sector with near zero greenhouse gas emissions by 2050. Senior officials from each of the four agencies will discuss how their programs are working together to transform transportation, including through interagency action plans.

Panel Discussion (P24-21474)

Ann Shikany/U.S. Department of Transportation Office of the Under Secretary for Policy, Geraldine Richmond/U.S. Department of Energy (DOE), Marion McFadden/U.S. Department of Housing and Urban Development

3068

Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Salon A

Multimodal Operations and the Capacity of Roundabouts in the United States and Beyond

Lee Rodegerdts, Kittelson & Associates, Inc., presiding

Sponsored By Standing Committee on Highway Capacity and Quality of Service, Standing Committee on Roundabouts and other Intersection Design and Control Strategies

The operational performance of motor vehicles at roundabouts is well studied and used in practice, but there is an emerging need to provide similar analysis at roundabouts for bicyclists and pedestrians. This session provides a series of short presentations on existing multimodal analysis practices for roundabouts in the US and internationally, the role of multimodal analysis within an Intersection Control Evaluation framework, and a perspective on this topic from a State DOT. The presentations are followed by a panel discussion of current and future directions for analyzing the operations of bicyclists and pedestrians at roundabouts.

Multimodal Roundabout Analysis in the Highway Capacity Manual (P24-21536)

David Stanek/Fehr & Peers

(continued)

Multimodal Roundabout Analysis in SIDRA (P24-21537)

Howard McCulloch/New York State Department of Transportation

Multimodal Roundabout Analysis in Germany (P24-21538)

Julian Schmitz/Ruhr University, Bochum

Roundabouts Within Intersection Control Evaluation (P24-21539)

Bastian Schroeder/Kittelson & Associates, Inc.

Multimodal Roundabout Analysis: A State Department of Transportation Perspective (P24-21540)

Brian Walsh/Washington State Department of Transportation

2159



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Motorcycle Operation and Safety Research

Chanyoung Lee, USF Center for Urban Transportation Research, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems

Assessment of Motorcycle Crash Severity in Wyoming Through Bayesian Regression (TRBAM-24-00164) - B716

Milan Zlatkovic/University of Wyoming, Isaac Baah/University of Wyoming, Sarah Zlatkovic/University of Wyoming, Zorica Cvijovic/University of Wyoming

Evaluating Helmet Wearing of Single-Vehicle Overspeeding Motorcycle Crashes: Insights from Temporal Instability in a Parsimonious Pooled Framework (TRBAM-24-00169) - B717

Chenzhu Wang/Southeast University, Mohamed Abdel-Aty/Southeast University, Said M Easa/Southeast University, Fei Chen/Southeast University, Jianchuan Cheng/Southeast University, Arshad Jamal/Southeast University

Investigating the Risky Riding Behavior of Food Delivery Agents (TRBAM-24-00286) - B718

Tathagatha Khan/Indian Institute of Technology, Dhanbad, Nagendra Velaga/Indian Institute of Technology, Dhanbad

Ambient Temperatures and Road Traffic Injuries in Kaohsiung: A Tropical and Motorcycle-Dominant City in Taiwan (TRBAM-24-00356) - B720

Cheng-Kai Hsu/University of California, Berkeley, Daniel Rodriguez/University of California, Berkeley

Developing Motorcycle Crash-Specific Safety Performance Functions Along Rural Two-Lane Undivided Road Segments in Kentucky Pre- and Post-COVID-19 Pandemic (TRBAM-24-00532) - B721

Bharat Kumar Pathivada/Western Kentucky University, Arunabha Banerjee/Western Kentucky University, Kirolos Haleem/Western Kentucky University

Factors Affecting Motorcycle Crash Severity in Thailand: Evidence from an In-Depth Crash Investigation (TRBAM-24-00596) - B722

Kunnawee Kanitpong/Asian Institute of Technology, Auearree Jensupakarn/Asian Institute of Technology, Pathumporn Dabsomsri/Asian Institute of Technology, Kannika Issalakul/Asian Institute of Technology

Modeling Lateral Interactions Between Motorcycles and Vehicles in Mixed Traffic: A Fully Parametric Survival Approach (TRBAM-24-00646) - B723

Ali Essa/University of British Columbia, Rushdi Alsaleh/University of British Columbia, Tarek Sayed/University of British Columbia

Risk Prediction of Vehicle Collision Involved with Motorbikes: An Application of a Combined Neural Network and Long Short-Term Memory (TRBAM-24-01082) - B724

Ta-Yin Hu/National Cheng Kung University, Chen-Yang Hsieh/National Cheng Kung University, Tsai-Yun Liao/National Cheng Kung University

The Role of the Built Environment on Vulnerable Road Users in a Developing Country: A Case Study of Jamshedpur, India (TRBAM-24-01703) - B725

Bhupali Dutta/National Institute of Technology, Calicut, Ankit Raj/National Institute of Technology, Calicut, Suprag Patel/National Institute of Technology, Calicut, Shubham Yadav/National Institute of Technology, Calicut, Ripunjay Gogoi/National Institute of Technology, Calicut

Analyzing the Factors Affecting Injury Severity of Motorcyclists in Connecticut: A Multinomial Logit Approach for Single-Vehicle and Multi-Vehicle Crashes (TRBAM-24-02140) - B726

Anshu Bamney/University of Connecticut, Niloufar Shirani/University of Connecticut, Yu Song/University of Connecticut, Eric Jackson/University of Connecticut

Can Segregating Motorcyclists Enhance the Safety of Non-Urban Highways? (TRBAM-24-02293) - B727

Harish Saini/Indian Institute of Technology, Jammu, Ankit Kathuria/Indian Institute of Technology, Jammu

Investigating the Impact of Segregating Motorcyclists on the Safety of Non-Urban highways: An Application of Extreme Value Theory (TRBAM-24-02298) - B728

Harish Saini/Indian Institute of Technology, Jammu, Ankit Kathuria/Indian Institute of Technology, Jammu

(continued)

Understanding Psychological Factors Behind Motorcyclists Crossing Behavior on Undivided Roads in Mixed Traffic Conditions: A Case Study of Hau Giang, Vietnam (TRBAM-24-02639) - B729

Minh Chu/Ho Chi Minh City University of Technology, Hai Duong/Ho Chi Minh City University of Technology, Nathan Huynh/Ho Chi Minh City University of Technology

Examining the Role of Run-Over on Injury Severity in Two Wheeler-Motor Vehicle Crashes: A Path Analysis Modeling Approach (TRBAM-24-03421) - B730

Yunfei Zhao/Chang'an University, Peng Wang/Chang'an University, Wenjian Jia/Chang'an University, Tong Zhu/Chang'an University

The Validation of Motorized Two-Wheeler Simulator: Evaluation of Relative Validity Considering Distraction, Road Infrastructure, and Individual Characteristics (TRBAM-24-03527) - B719

Monik Gupta/Indian Institute of Technology, Bombay, Rajesh Meena/Indian Institute of Technology, Bombay, Nagendra Velaga/Indian Institute of Technology, Bombay

Determination of Conflict Thresholds and Crash Risk of Powered Two-Wheelers in Mixed Traffic Conditions: An Extreme Value Theory Approach (TRBAM-24-03608) - B731

Shivasai Samalla/Indian Institute of Technology, Guwahati, Pranab Kar/Indian Institute of Technology, Guwahati, Suvin Padinjare Venthuruthiyil/Indian Institute of Technology, Guwahati, Mallikarjuna Chunchu/Indian Institute of Technology, Guwahati

At Fault or At Bias: Evaluation of Equity Toward Motorcyclists on Accident Accountability (TRBAM-24-03914) - B732

Maroa Mumtarin/Iowa State University, Ye Dong/Iowa State University, Sudesh Bhagat/Iowa State University, Jonathan Wood/Iowa State University

Investigating Seasonal Variability Patterns in Motorcycle Crash Injury Types Using Association Rules Mining (TRBAM-24-04626) - B733

Md Nasim Khan/AtkinsRéalis, Subasish Das/AtkinsRéalis, Jinli Liu/AtkinsRéalis

Analysis of Motorcyclists Crash Severity Using Cluster Correspondence and Hierarchical Binary Logit Models (TRBAM-24-04774) - B734

Richard Dzinyela/Texas A&M Transportation Institute, Bahar Dadashova/Texas A&M Transportation Institute, Grant Westfall/Texas A&M Transportation Institute, Subasish Das/Texas A&M Transportation Institute, Chiara Silvestri-Dobrovoly/Texas A&M Transportation Institute, Dominique Lord/Texas A&M Transportation Institute

Examining Factors Contributing to Motorcycle Collisions with Left-Turning Vehicles at Urban Intersection Locations (TRBAM-24-04809) - B736

Henrick Haule/University of Arizona, Eric Dumbaugh/University of Arizona

Exploring the Associations of Rider Age and Experience on Motorcycle Injury Crash Risk: Evidence from a Case Control Study (TRBAM-24-04833) - B737

Muhammad Adeel/The University of Tennessee Knoxville, Numan Ahmad/The University of Tennessee Knoxville, Behram Wali/The University of Tennessee Knoxville, Asad Khattak/The University of Tennessee Knoxville

Uncovering Motorcycle Crash Severity Patterns Through Association Rules Mining (TRBAM-24-05047) - B735

Md Nasim Khan/AtkinsRéalis, Subasish Das/AtkinsRéalis, Ryan Benton/AtkinsRéalis, Mohammad Jalayer/AtkinsRéalis, Ahmed Hasan/AtkinsRéalis

Identifying the Related Factors of Food Delivery Motorcycle Crash Severity (TRBAM-24-05071) - B738

I Gede Brawiswa Putra/National Cheng Kung University, Pei-Fen Kuo/National Cheng Kung University, Umroh Dian Sulistyah/National Cheng Kung University

2160



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Measuring Local and Global Freight Activity

Kaveh Shabani, Cambridge Systematics, presiding

Sponsored By Standing Committee on Freight Transportation Data

This poster session features a variety of case studies that apply innovative approaches to measure local, regional, or global freight activity. These case studies utilize a wide variety of freight data types, including surveys, probe data, and commodity flows.

A Disaggregated Approach of Freight Mobility per Commodity Based on Public Data: Case Study of Florida (TRBAM-24-00311) - A362

Lissy La Paix/CTS Engineering, Inc, Yongqiang Wu/CTS Engineering, Inc, Yi Zhang/CTS Engineering, Inc, Thomas Hill/CTS Engineering, Inc

(continued)

A Freight Data Repository as Foundational Pillar for Urban Freight Research (TRBAM-24-01071) - A330

Carlos Rivera-Gonzalez/University of Toronto, Ziang Feng/University of Toronto, Hasan Bayanouni/University of Toronto, Kevin Carr/University of Toronto, Matthew Roorda/University of Toronto

Assessing the Impacts of COVID-19 on Online Shopping Behavior and the Resulting Delivery and Shipping Behavior of Private Households and Freight Transportation: An Empirical Study for Germany (TRBAM-24-02467) - A343

Anton Galich/Institute of Transport Research, Carina Kehrt/Institute of Transport Research

The Impact of COVID-19 on the Usage of E-Commerce and Mobility Habits in the Region of Madrid (TRBAM-24-03957) - A353

Jose Cano-Leiva/Universidad Politécnica de Madrid, Guilherme F. Alves/Universidad Politécnica de Madrid, Juan Gomez/Universidad Politécnica de Madrid, José Manuel Vassallo/Universidad Politécnica de Madrid

A Data-Driven Methodology for Identifying and Ranking Freight Bottlenecks (TRBAM-24-04203) - A342

Yunfei Ma/McMaster University, Chien An Liu/McMaster University, Elkafi Hassini/McMaster University, Saiedeh Razavi/McMaster University

Predicting Stay Points of Construction Waste Hauling Trucks Based on the Input–Output Hidden Markov Model (TRBAM-24-04966) - A331

Boyi Lei/Southwest Jiaotong University, Hongtai Yang/Southwest Jiaotong University, Ke Han/Southwest Jiaotong University, Guocong Zhai/Southwest Jiaotong University

Understanding the Impact of On-Demand Delivery of Prepared Meals and Grocery (TRBAM-24-05413) - A332

Natalia Zuniga-Garcia/Argonne National Laboratory, Krishna Murthy Gurumurthy/Argonne National Laboratory, Abdelrahman Ismael/Argonne National Laboratory, Olcay Sahin/Argonne National Laboratory, Joshua Auld/Argonne National Laboratory

A Comprehensive Assessment of Third-Party Truck Volume Data in Kentucky (TRBAM-24-06038) - A333

Xu Zhang/Kentucky Transportation Center, Eugene Antwi/Kentucky Transportation Center, Ali Gorji-Sefidmazgi/Kentucky Transportation Center, Mei Chen/Kentucky Transportation Center

Cross-Pacific Vessel Estimated Time of Arrival and Next Destination Prediction with AIS Data (TRBAM-24-06384) - A352

Roger Lloret-Batlle/NISCI (MIT-SCALE), Sen Lin/NISCI (MIT-SCALE), Jiequn Guo/NISCI (MIT-SCALE)

2161



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Unveiling the Journey: Analyzing Travel Behavior Across the COVID-19 Spectrum

Andre Carrel, Ohio State University, presiding

Charles Abraham, Illinois Department of Transportation, presiding

Lisa Losada Rojas, University of New Mexico, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

This session includes papers that looked at the effects of COVID-19 on travel behaviour from various angles

The Rise of Private Vehicles: Investigating Factors for Mode Shift After COVID-19 (TRBAM-24-00457) - A231

Daeyeol Chang/University of Missouri, Columbia

Who Continued Traveling by Bus in Different Periods of COVID-19?: A Data-Driven Analysis from Jiading, Shanghai, China (TRBAM-24-01847) - A232

Weihan Bi/Tongji University, Yu Shen/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

Early Pandemic Behaviors and the Role of Vaccines in Reversing Pandemic Mobility Trends: Evidence from a U.S. Panel (TRBAM-24-02979) - A233

Hassan Obeid/University of California, Berkeley, Michael Anderson/University of California, Berkeley, Mohamed Bouzaghane/University of California, Berkeley, Meiqing Li/University of California, Berkeley, Drake Hayes/University of California, Berkeley, Madeleine Parker/University of California, Berkeley, Karen Frick/University of California, Berkeley, Daniel Chatman/University of California, Berkeley, Raja Sengupta/University of California, Berkeley, Joan Walker/University of California, Berkeley

What Kinds of People Expect to Travel by Car More, or Less, for Non-Commute Purposes in the Post-Pandemic Era?: A Latent Class Approach (TRBAM-24-03445) - A243

Jason Soria/Georgia Institute of Technology, Seung Eun Choi/Georgia Institute of Technology, Xinyi Wang/Georgia Institute of Technology, Patricia Mokhtarian/Georgia Institute of Technology

(continued)

Perceived Discrimination, Transit Use, and Walking Behavior During the COVID-19 Pandemic: Evidence from the Understanding America Study (TRBAM-24-02596) - A250

Abigail Cochran/University of Nebraska, Lincoln, Jueyu Wang/University of Nebraska, Lincoln, Evan Iacobucci/University of Nebraska, Lincoln

Cities on Three Continents: A Study of Post-COVID-19 Ridership (TRBAM-24-03773) - A251

Anne Dowling/University College London, Audrey Denis/University College London, Krishna Desai/University College London

Quantifying the Longer-Term Impact of the COVID-19 Pandemic on Willingness to Pay for Travel Time Savings and Reliability for Passenger Vehicle Drivers (TRBAM-24-05200) - A252

Anna Smolentseva/University of California, Los Angeles, Tristan Cherry/University of California, Los Angeles, Mark Fowler/University of California, Los Angeles, Claire Goldhammer/University of California, Los Angeles, Thomas Sherman/University of California, Los Angeles, Alireza Soroush/University of California, Los Angeles

Understanding Travel-Related Well-Being in the Post-COVID-19 World: Does Pandemic-Related Psychological Concern Still Prevail Among PT Users? (TRBAM-24-05340) - A253

Yucheng Wang/Southeast University, Bozhan Qin/Southeast University, Boqing Wang/Southeast University, Ke Ma/Southeast University

The Implications of Post-Pandemic Urban Activity and Travel Patterns on Transportation Planning, Policy, and Operations: A Case Study in the Washington, DC, Region (TRBAM-24-05665) - A262

Michael Leong/Massachusetts Institute of Technology, Yen-Chu Wu/Massachusetts Institute of Technology, Joanna Chen/Massachusetts Institute of Technology, Anson Stewart/Massachusetts Institute of Technology, Mark Nystrom/Massachusetts Institute of Technology, Jennifer Kochaver/Massachusetts Institute of Technology, Gabriel Pincus/Massachusetts Institute of Technology, Michael Eichler/Massachusetts Institute of Technology, Jinhua Zhao/Massachusetts Institute of Technology

Passenger Time Use Comparison Between Traditional and Autonomous Vehicles: A Latent Class and Transition Analysis (TRBAM-24-05783) - A241

Nadim Hamad/Northwestern University, Divyakant Tahlyan/Northwestern University, Hoseb Abkarian/Northwestern University, Hani Mahmassani/Northwestern University

Exploring the Influences on Late-Pandemic, Non-Commute Activity Engagement (TRBAM-24-01996) - A242

Seung Eun Choi/Georgia Institute of Technology, Xinyi Wang/Georgia Institute of Technology, Jason Soria/Georgia Institute of Technology, Patricia Mokhtarian/Georgia Institute of Technology

Subways and Buses Choice Behavior with Different Income Levels During the Controlling Stage of the COVID-19 Pandemic (TRBAM-24-02073) - A263

Zeqian Jin/Tongji University, Jose Holguin-Veras/Tongji University, Yang Xia/Tongji University, Chen Li/Tongji University

2162



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Navigating the Future: Analyzing Evolving Vehicle Ownership Trends

Adam Weiss, Carleton University, presiding

Natarajan Janarthanan, Washington State Department of Transportation, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

The session includes papers that investigated various aspects of car ownership and related issues

Exploring the Similarities and Differences in Autonomous Vehicle Adoption: A Comparative Study of China and the United States (TRBAM-24-00411) - A272

Xinghua Li/Tongji University, Jieru Zou/Tongji University, Shubham Agrawal/Tongji University, Yuntao Guo/Tongji University, Tianpei Tang/Tongji University, Xi Feng/Tongji University

Revealing E-Taxi Drivers' Charging Behavior and Its Influencing Factors Using GPS Trajectory Data (TRBAM-24-00823) - A273

Meng Liu/Chinese University of Hong Kong, Sylvia Y. He/Chinese University of Hong Kong

Investigation of Potential Users' Willingness to Shift to Electric Two-Wheelers: A Case Study of Pune City, India (TRBAM-24-01776) - A280

Pravin Telang/Indian Institute of Technology, Bombay, Perumal Vedagiri/Indian Institute of Technology, Bombay

Determinants of Automated and Autonomous Vehicle Ownership (TRBAM-24-04148) - A281

Rabi Mishalani/Ohio State University, Andre Carrel/Ohio State University, Rana Tarabay/Ohio State University, Mark McCord/Ohio State University

(continued)

Autonomous, Self-Driving, or Driverless Vehicles: The Impact of Word Choice on Individual Perceptions (TRBAM-24-04801) - A240

Vasileios Volakakis/Northwestern University, Hoseb Abkarian/Northwestern University, Nadim Hamad/Northwestern University, Hani Mahmassani/Northwestern University

Modeling the Risk-Taking Behavior of Two-Wheelers on the Operational Mental Behavior Level Considering Human Factors (TRBAM-24-05766) - A282

Jiayuan He/Tongji University, Ying Ni/Tongji University, Yixin Li/Tongji University, Yufei Yuan/Tongji University, Winnie Daamen/Tongji University, Shihan Wang/Tongji University, Jian Sun/Tongji University

2163



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Travel Behavior Shaped by Urban Form, Neighborhood, and Related Factors

Irfan Batur, Arizona State University, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

This poster session presents 17 papers that are broadly on the influence of urban form, neighbourhood configuration and related factors in shaping our travel behaviour directly or indirectly.

Investigate the Influence of Urban Heat Island Effects on Active Travel Behavior by Leveraging Social Media Data (TRBAM-24-00819) - A283

Teng Li/Monash University, Zhuo Chen/Monash University, Shuli Luo/Monash University, Alexa Delbosc/Monash University

Psychological Correlates of Walking: Results from a Medium-Sized Swedish City (TRBAM-24-01454) - A290

Anindita Mandal/Luleå Tekniska Universitet, Charlotta Johansson/Luleå Tekniska Universitet, David Lindelöw/Luleå Tekniska Universitet

Attitudinal Taste Heterogeneity in the Relationship Between the Built Environment and Workers' Vehicle-Miles Driven: A Latent Class Model for Northern California (TRBAM-24-01988) - A291

Sungtaek Choi/Hanyang University

Impacts of Transit System Developments on Travel Behavior and Reliability Perceptions in a Developing Economy (TRBAM-24-03594) - A292

Abhijna Mannambeth/Indian Institute of Technology, Bombay, K V Krishna Rao/Indian Institute of Technology, Bombay, Vedagiri Perumal/Indian Institute of Technology, Bombay

Coping with High Prices: Evaluating the Response to Rapidly Increasing Transportation Fuel Prices in Small and Rural Communities (TRBAM-24-03744) - A293

Narges Ahmadnia/University of Vermont College of Engineering and Mathematical Sciences, Erica Quallen/University of Vermont College of Engineering and Mathematical Sciences, Gregory Rowangould/University of Vermont College of Engineering and Mathematical Sciences

Reveal the Hidden Distance: The Impact of Location Features on Commuting Distance in Tompkins, New York (TRBAM-24-03804) - A300

Jinao He/National University of Singapore, Waishan Qiu/National University of Singapore

Exploring the Spatial Relationship Between Urban Built Environment and Green Travel: An Improved Semi-Parametric Geographically Weighted Regression Approach (TRBAM-24-03910) - A301

Zongshi Liu/Tongji University, Ye Li/Tongji University, Meiting Tu/Tongji University

Understanding the Diversity and Spatial Distribution of Secondary Activities Among Remote and Office Workers (TRBAM-24-04036) - A302

Ioannis Tsouros/University of the Aegean, Konstadinos Goulias/University of the Aegean, Amalia Polydoropoulou/University of the Aegean, Athena Tsirimpa/University of the Aegean

Does Moving to a Compact Walkable Neighborhood Lead to Changes in Travel Attitudes?: A Study of Mueller Community in Austin, Texas (TRBAM-24-04281) - A303

Mashrur Rahman/University of Toronto, Gian-Claudia Sciara/University of Toronto

Satisfaction with Travel of Urban Commuters in Spain (TRBAM-24-04432) - A310

Yenis López Esadas/Universidad Politécnica de Valencia, Rosa Arroyo/Universidad Politécnica de Valencia, Lidón Mars Aicart/Universidad Politécnica de Valencia, Tomás Ruiz Sánchez/Universidad Politécnica de Valencia

Understanding the Dwelling Behavior of Ridesourcing Drivers at Transportation Hubs from a Behavioral Queuing Perspective (TRBAM-24-05254) - A311

Tianming Liu/University of Michigan, Ann Arbor, Zhengtian Xu/University of Michigan, Ann Arbor, Yafeng Yin/University of Michigan, Ann Arbor, Hongtu Zhu/University of Michigan, Ann Arbor

(continued)

Relocating Home or Changing Job?: The Impact of Long Commuting (TRBAM-24-05359) - A312

Liang Ma/Peking University, Yan Huang/Peking University, Wenqian Shi/Peking University, Jian Lin/Peking University

Combined Influence of Environment, Safety, Accessibility, and Convenience on Travel Choices in Bangkok (TRBAM-24-06051) - A313

Titayapa Meenapinunt/Newcastle University, Margaret Bell/Newcastle University, Gustav Bösehans/Newcastle University, Dilum Dissanayake/Newcastle University

Willingness to Pay for Flying Taxi in the City of Chicago (TRBAM-24-06169) - A320

Fatemeh Nazari/University of Texas, Rio Grande Valley, Mohamadhossein Noruzoliaee/University of Texas, Rio Grande Valley

Factors Explaining Public Acceptance of Low Traffic Neighborhoods in the United Kingdom (TRBAM-24-06198) - A321

Jie Chen/University College London, Paulo Ancaies/University College London, Emmanouil Chaniotakis/University College London

Transportation Needs in Daily Life: Using Human Stories to Shape Regional Transportation Planning and Policy in the Minneapolis—St. Paul Metro Area (TRBAM-24-06289) - A322

Jessica Schoner/Safe Streets Research & Consulting, Tom Holmes/Safe Streets Research & Consulting, Rachael Panik/Safe Streets Research & Consulting, Corrin Bemis/Safe Streets Research & Consulting, Darcie Vandegrift/Safe Streets Research & Consulting, Linda Spohr/Safe Streets Research & Consulting, Sarah Gong/Safe Streets Research & Consulting, Dan Edgerton/Safe Streets Research & Consulting, Shee Yang/Safe Streets Research & Consulting, Ashley Hudson/Safe Streets Research & Consulting, Rebecca Sanders/Safe Streets Research & Consulting, Bethany Brandt-Sargent/Safe Streets Research & Consulting, Heidi Schallberg/Safe Streets Research & Consulting, Nathan Lassila/Safe Streets Research & Consulting, Sara Maaske/Safe Streets Research & Consulting, Jonathan Ehrlich/Safe Streets Research & Consulting

Policy and Equity Implications from an Urban Network Assignment Platform with Fair Peer-to-peer Congestion Pricing (TRBAM-24-06349) - A323

Siwei Hu/University of California, Irvine, Pengyuan Sun/University of California, Irvine, Daisik Nam/University of California, Irvine, R. Jayakrishnan/University of California, Irvine, Michael Hyland/University of California, Irvine

2164



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Dwight David Eisenhower Transportation Fellowship Program Poster (Session 1)

Latoya Jones, Federal Highway Administration (FHWA), presiding

Sponsored By Section - Executive Management Issues

An opportunity to explore the topics undergraduate and graduate students are researching at institutions across the country. Dwight David Eisenhower Transportation Fellowship Program research presentations are selected by FHWA and are not reviewed by TRB standing committees.

Autonomous Ground System Integration for High-Endurance Uncrewed Aerial Vehicles (P24-21309) - A100

Shawn Chen/California State Polytechnic University, Pomona

Understanding Mobility-Related Challenges for Asian American and Pacific Islander Older Adults (P24-21310) - A101

Calvin Wong/California State Polytechnic University, Pomona

Evaluating Traffic Count from UAS Data Through Deep Learning (P24-21311) - A102

Susanna Eng/California State Polytechnic University, Pomona

Research and Development of Quiet Electric Propulsion for Electric Vertical Take-Off and Landing Aircraft (P24-21312) - A103

Hetkumar Ghadia/California State Polytechnic University, Pomona

How Transportation Companies Can Contribute to a Cleaner Environment and Meet the Growing Societal Demand for Eco-Friendly Transportation (P24-21313) - A110

Aidan Hayes/Cecil College

Computation of Concrete Cover Cracking Time for Various High-Performance Concrete Mixtures (P24-21314) - A111

Zoie Nunez/California State University, Fullerton

Innovative Service Modeling for the Computation of Corrosion Propagation Time in High-Performance Concrete (P24-21315) - A112

Alexis Gopaul/California State University, Fullerton

(continued)

Mitigating ASR Problem in Concrete Through High-Performance Concrete (P24-21316) - A113
Ha Le

Energy-Efficient Routing Algorithms for Electric Vehicle Charging Networks (P24-21317) - A120
Joseph Centeno/Napa Valley College

A Comprehensive Study of Collision Avoidance Systems (P24-21318) - A121
Paul Brandon Estigoy/Napa Valley College

An Analysis on the Dangers of Stroads (P24-21319) - A122
Giselle Vargas/Napa Valley College

Atomization of Control Systems Using Artificial Intelligence (P24-21320) - A123
Marco Correa/Napa Valley College

Public Transportation and Pedestrian Infrastructure Health Disapirty Assessment (P24-21321) - A130
Victoria Calderon/Napa Valley College

Mounting and Control of Autonomous Vehicles (P24-21322) - A131
Mikal Ali/North Carolina A&T State University

Barriers to Entry and Growth (P24-21323) - A132
Trevor Elliott/North Carolina A&T State University

Feasibility of Multiple High-Speed Railways (P24-21324) - A140
Christopher Menchaca

A New Way of Aviation (P24-21327) - A133
Carl Cellan/Porterville College

Traffic Congestion for Highway 65 (P24-21326) - A141
Josueh Ceballos/Porterville College

Analyzing Various Aspects of U.S. Transportation (System) and Suggesting Potential Implementation Methods and Designs to a Caribbean Country (P24-21328) - A142
Amarila Benn/Savannah State University

Enhancing Bridge Sustainability Through Innovative Design and Materials (P24-21329) - A143
Luke Sanders/Savannah State University

Case Study of a Major Intersection on a High-Danger Corridor (P24-21330) - A150
Miles Wilford/Savannah State University

Land Surveying and the Effects of COVID-19 in Georgia (P24-21331) - A151
Tyrique Mingle/Savannah State University

Reducing Traffic Flow Worldwide (P24-21332) - A152
Arsha Platt

Analyzing Urban Sentiments Through Hashtags: The 15-Minute City Perspective (P24-21333) - A153
Darrell Anderson/Texas State University

Examining the Middle Mile: A Comprehensive Analysis of Intercity Truck Movements (P24-21334) - A162
Zane Amray/City College of New York

Response-Based Load and Resistance Factor Rating for Highway Bridge Rating (P24-21335) - A163
Justin Lin/City College of New York

Investigating Work and Non-Work Travel Patterns in the United States Using the National Household Travel Survey NextGen Origin-Destination Data Set (P24-21336) - A172
Benjamin Diehl

The Impact of Bikeshare System Development on Community Cycling Activity (P24-21337) - A173
Yehuda Pollack/City College of New York

Assessment of the Terrace Neighborhood's Trolleybus Transit System After Redirecting Traffic Flow Patterns: A Case Study on Mobility (P24-21338) - A182
Josue Dieppa Ortiz/University of Puerto Rico, Mayaguez

Automated Student Parking Space Detection at UPRM Using Machine Learning (P24-21339) - A183
Jorge Cruz Muniz/University of Puerto Rico, Mayaguez

Capacitated Discrete Facility Location Problem for Energy Resilience (P24-21340) - A192
Abdiel Ocana Colon/University of Puerto Rico, Mayaguez

Multivariable Calibration of Onboard Load Sensor in a Shear Adapter Pad Assembly (P24-21341) - A193
Diego Aguila/University of Texas, Rio Grande Valley

Next-Generation Onboard Sensor Technologies for Rolling Stock (P24-21342) - A200
Dario Hinojosa/University of Texas, Rio Grande Valley

Investigating the Impact of Road Improvements on Drivers' Behavior (P24-21343) - A201
Celeste Maldonado/University of Texas, Rio Grande Valley

(continued)

Performance Characterization of Reconditioned Bearings for Freight Rail Service (P24-21344) - A202

Eduardo Miranda/University of Texas, Rio Grande Valley

Optimizing Bearing Health Metrics for Use with Onboard Vibration and Temperature Wireless Sensors (P24-21345) - A203

Curtis Pena/University of Texas, Rio Grande Valley

Maximizing Road Safety Through Analytical Study on the Impact and Effectiveness of Median Cable Barriers (P24-21374) - A210

Aaron Lamson/Tennessee State University

Mitigating Congestion and Elevating Safety: A Targeted Study on Nashville's Major Intersections (P24-21375) - A211

Bahati Chimba/Tennessee State University

Sustainable Construction Materials and Methods in the Transportation Projects (P24-21376) - A212

Yusuf Binmahfooz/Florida A&M University

Differential Design of Discounts for Mileage-Based User Fees (P24-21377) - A213

Mikal Ali/North Carolina A&T State University

Leveraging Drones, Internet of Things, and Computer Vision for Real-Time Traffic Data Analysis and Management (P24-21378) - A220

Matteo Fox/Florida A&M University

Carrier Sense Multiple Access with Collision Avoidance Application in Vehicular Networks (P24-21379) - A221

Orlando Livas

2165



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

High-Value Research Projects

Anne Freeman, Washington State Department of Transportation, presiding

Cynthia Smith, Mississippi Department of Transportation, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management

This event highlights the 16 High Value Research (HVR) awards voted on by the four AASHTO Research Advisory Committee (RAC) regions.

Fiber Reinforced Polymer Composite Tub Girders in Bridge Applications: Maine Department of Transportation (P24-20025) - B740

Jeffrey Pulver/Maine Department of Transportation

Effectiveness of Rectangular Rapid Flashing Beacons at Mid-Block Crosswalks: Vermont Agency of Transportation (P24-20026) - B742

Parsa Pezeshknejad/University of Vermont

Repair of Steel Beam/Girder Ends with Ultra High-Strength Concrete (Phase III: Implementation and Training): Connecticut Department of Transportation (P24-20027) - B743

Brian Lassy/University of Connecticut, Alexandra Hain/University of Connecticut, Arash Esmaili Zaghi/University of Connecticut

Use of Smart Rocks to Improve Rock Slope Design: New Hampshire Department of Transportation (P24-20028) - B752

Deirdre Nash/New Hampshire Department of Transportation

Evaluation of Florida Department of Transportation Corrosion Prevention and Control Program (P24-20029) - B744

Matthew Fadden/Wiss Janney Elstner Associates Inc.

Steel Culvert Repairs with High-Performance, Fiber-Reinforced Concrete: Virginia Department of Transportation (P24-20030) - B745

Celik Ozyildirim/Virginia Department of Transportation, Mary Sharifi/Virginia Department of Transportation

South Carolina Department of Transportation Scope of Services Template (P24-20031) - B747

Terry Swygert/South Carolina Department of Transportation, Ehsan Mousavi/Clemson University

Extended Field Testing and Enhancement of a Portable Pedestrian and Cyclist Detection System: Georgia Department of Transportation (P24-20032) - B748

Brennan A. Roney/Georgia Department of Transportation, Sephara Raymond/Georgia Department of Transportation

(continued)

Bridge Element Deterioration for Midwest States (IA, IL, IN, KS, KY, MI, MN, ND, NE, OH, SD, WI): Wisconsin Department of Transportation (P24-20033) - B749

Philip Meinel/Wisconsin Department of Transportation

Evaluation of an Active Traffic Management System with Part-Time Use of the Inside Shoulder: Michigan Department of Transportation (P24-20034) - B750

Peter Savolainen/Michigan State University, Nischal Gupta/Michigan State University, Michael Townley/Michigan Department of Transportation

Technical and Financial Feasibility Study for Installation of Solar Panels at Illinois Department of Transportation–Owned Facilities (P24-20035) - B754

Todd Rusk/University of Illinois, Urbana-Champaign

Road Condition Detection and Classification from Existing CCTV Feed: Indiana Department of Transportation (P24-20036) - B755

Stanley Chien/Indiana University - Purdue University, Edward Cox/Indiana Department of Transportation

Solar Power Initiative Using California Department of Transportation Right-of-Way (P24-20037) - B757

Sean Campbell/California Department of Transportation, Joseph Horton/California Department of Transportation

Heard But Not Seen: Remote Quantification of Snow Avalanches Using Infrasound: Colorado Department of Transportation (P24-20038) - B758

Scott Havens/Snowbound Solutions, Jeffrey B Johnson/Boise State University

Montana Department of Transportation Wildlife Accommodation Process (P24-20039) - B759

Rebecca Ridenour/Montana Department of Transportation

Eyes in the Sky: Bridge Inspections with Unmanned Aerial Vehicles: Oregon Department of Transportation (P24-20040) - B753

Michael Bufalino/Oregon Department of Transportation

2166



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Supplemental Research Award Projects

Anne Freeman, Washington State Department of Transportation, presiding

Cynthia Smith, Mississippi Department of Transportation, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management

This sessions highlights AASHTO Research Advisory Committee's (RAC) Supplemental High Value Research Awards. This year's areas are Safety and Maintenance, Management, and Preservation.

Real-Time Traffic Signal System Performance Measurement Phase II: Data and Functionality Enhancement, Large-Scale Deployment, and Connected and Autonomous Vehicles Integration: New Jersey Department of Transportation (P24-20041) - B760

Peter Jin/Rutgers University, Thomas Brennan/College of New Jersey, Mohammad Jalayer/Rowan University, Kelly McVeigh/New Jersey Department of Transportation

Off-Line and Real-Time Evaluation of Traffic Sensors with a Generalized Detection Performance Monitoring System: Maryland Department of Transportation (P24-20042) - B764

Gang-Len Chang/University of Maryland, College Park, Yi-Ting Lin/University of Maryland, Yen-Lin Huang/University of Maryland, College Park

Construction and Materials Best Practices for Concrete Sidewalks: Massachusetts Department of Transportation (P24-20043) - B765

Kara Peterman/University of Massachusetts, Amherst, Sergio Breña/University of Massachusetts, Amherst

Improved Practices for Determining the Infiltration Characteristics of Soils for Design of Stormwater Best Management Practices: New Hampshire Department of Transportation (P24-20044) - B762

Deirdre Nash/New Hampshire Department of Transportation

Development of a Crash Modification Factor for Conversion of a Conventional Signalized Intersection to a Continuous Flow Intersection: North Carolina Department of Transportation (P24-20045) - B767

Christopher Cunningham/North Carolina State University

Bridge Project Prioritization: Development and Implementation of an Index: Kentucky Transportation Cabinet (P24-20046) - B768

Bryan Gibson/Kentucky Transportation Cabinet, Chris Van Dyke/Kentucky Transportation Cabinet, Sudhir Palle/Kentucky Transportation Center, Ryan Griffith/Kentucky Transportation Cabinet, Doug Kreis/Kentucky Transportation Cabinet

(continued)

Quality Improvement and Application of PMS Data: Tennessee Department of Transportation (P24-20047) - B772

Jamie Waller/Tennessee Department of Transportation, Xiaoyang Jia/Tennessee Department of Transportation

High Friction Surface Treatments Before and After Safety Analysis: Missouri Department of Transportation (P24-20048) - B769

Hyung Suk Lee/Applied Research Associates, Inc.

Roadway Friction Modeling: Improving the Use of Friction Measurements in State Departments of Transportation: Iowa Department of Transportation (P24-20049) - B773

Khyle Clute/Iowa County Engineers Association Service Bureau

The Use of Emerging Internet of Things Technologies for Optimizing Maintenance Equipment Tracking: Ohio Department of Transportation (P24-20050) - B774

Munir Nazzal/University of Cincinnati

Internal Reinforcement of Backfill Behind Bridge Abutments to Mitigate Approach Slab Distresses: Kansas Department of Transportation (P24-20051) - B775

Jie Han/University of Kansas, Hao Liu/Chongqing Jiaotong University, Robert Parsons/University of Kansas, Saif Jawad/University of Baghdad

Proof-of-Concept Research of Roadside LiDAR Sensing Multimodal Traffic: Nevada Department of Transportation (P24-20052) - B777

Hao Xu/University of Nevada, Reno

Systemic Analysis of Bicycle and Pedestrian Safety in Utah: Utah Department of Transportation (P24-20053) - B778

Patrick Singleton/Utah State University

LiDAR for Maintenance of Pavement Reflective Pavement Markings and Signs: Oregon Department of Transportation (P24-20054) - B763

Michael Bufalino/Oregon Department of Transportation

Polyester Polymer Concrete for Bridge Deck Overlays: Utah Department of Transportation (P24-20055) - B779

James Corney/Utah Department of Transportation

2167



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Research and Innovation Management: Analyzing Barriers, Funding and Agenda Decisions, Benefits, and Data Reproducibility

Shenghua Wu, University of South Alabama, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management

This poster event will highlight research papers in the field of Research and Innovation Management, analyzing barriers, funding and agenda decisions, benefits, and data reproducibility.

What Research Topics Do Federal and State Departments of Transportation Fund: An Empirical Study Based on Topic Modeling (TRBAM-24-04023) - A382

Shijie Chen/FAMU-FSU College of Engineering, Yanshuo Sun/FAMU-FSU College of Engineering, Qianwen Guo/FAMU-FSU College of Engineering

TRACion: A Collaborative, Community Researcher, Agenda-Setting Approach (TRBAM-24-04005) - A383

Juan Matute/University of California, Los Angeles, Monisha Reginald/University of California, Los Angeles, Carolyn Pugh/University of California, Los Angeles, Chase Engelhardt/University of California, Los Angeles, tamika butler/University of California, Los Angeles, Adam Millard-Ball/University of California, Los Angeles

Barriers to Innovations in European Rail Freight Transport (TRBAM-24-03438) - A390

Ralf Elbert/Technical University of Darmstadt, Raphael Hackober/Technical University of Darmstadt

Vehicle-to-Grid in the Netherlands: A Sociotechnical, Multi-System Analysis of Barriers (TRBAM-24-03369) - A391

Jerico Bakhuis/Delft University of Technology, Emile Chappin/Delft University of Technology, Linda Kamp/Delft University of Technology

Reproducibility in Transportation Research: Importance, Best Practices, and Dealing with Protected and Sensitive Data (TRBAM-24-03137) - A392

Jonathan Wood/Iowa State University, Ida Van Schalkwyk/Iowa State University

Benefits of Transportation Research in Utah (TRBAM-24-01429) - A393

Douglas Anderson/Utah Department of Transportation, Rukhsana Lindsey/Utah Department of Transportation, Cameron Kergaye/Utah Department of Transportation



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Solicited Research Management and Innovation

Shenghua Wu, University of South Alabama, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management

These posters were selected from 26 applications submitted in response to the AJE35 Research Innovation Implementation Management Committee's poster solicitation. The selected posters emphasize research management, innovation, and implementation and span topics from pavement management to UAS programs to data curation.

Data Curation Practices to Optimize Research Coordination, Preservation, and Reuse (P24-20517) - B783

Leighton Christiansen/OST-R/Bureau of Transportation Statistics

Curators to the Rescue: New Strategies for Making Legacy Data Accessible to the Public (P24-20518) - B784

Peyton Tvrdy/National Transportation Library

Data Stewardship: The Bridge to Optimize Research Data Management Across the Data Life Cycle (P24-20524) - A373

Jesse Long/OST-R/Bureau of Transportation Statistics

"Data Management Is SCARY Pangs" or Data Management and Sharing Plans? (P24-20528) - A372

Leighton Christiansen/OST-R/Bureau of Transportation Statistics

Innovating Wildlife Underpasses: A Success Story of Implementing Research and Data to Improve the State Budget (P24-20530) - B770

Gary Vansuch/Colorado Department of Transportation

Guidance for Communication and Social Media Strategies Within Research Dissemination and Implementation Practices (P24-20532) - A381

Gabriella Kolodzy/Texas A&M Transportation Institute

How to Operate Profitable Decentralized Mobility Platforms: Insights from Three European Union Research Projects (P24-20534) - A380

Annerose Fischer/Zeppelin Universität

Deconstructing the German Automotive Industry for Market Entry into a Decentralized Infrastructure Ecosystem (P24-20536) - B780

John Warrender/Zeppelin Universität

Technology Transfer Planning Tools and Strategies for Midwestern State Department of Transportation Research Programs (P24-20538) - B781

Brian Hirt/CTC and Associates LLC, Hafiz Munir/Minnesota Department of Transportation

Uncrewed Aircraft System Plan for the New Hampshire Department of Transportation: Concept to Implementation (P24-20539) - B785

Carol Niewola/New Hampshire Department of Transportation

Implementation of a Sustainable Asphalt Technology in a Low-Volume Road Toward Carbon Neutralization (P24-20542) - B786

Abeeb Oyelere/University of South Alabama, Basant Bhatt/University of South Alabama, Shenghua Wu/University of South Alabama

Use of Pavement Management System to Support Department's Resurfacing Program: 15 Years of Research Implementation Experience in Tennessee (P24-20543) - B782

Xiaoyang Jia/Tennessee Department of Transportation

Transport Research and Innovation Monitoring and Information System: Monitoring Transport Research and Innovation in the European Union and Beyond (P24-20544) - B787

Marcin Stepniak/European Commission Joint Research Centre

Cost and Efficiency Factors in E-Bus Procurement Dynamics (P24-20546) - B788

Ann Mary Varghese/Indian Institute of Technology, Kharagpur

Improving Traffic Safety with Ambulance Data (P24-20547) - B789

Bas Janssen/Rijkswaterstaat



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Pavement Management System Prediction Models and Optimization

Aaron Gerber, Mott MacDonald, LLC, presiding

Sponsored By Standing Committee on Pavement Management Systems

Improved Model for Pavement Performance Prediction Based on Recurrent Neural Network Using the Long-Term Pavement Performance Database (TRBAM-24-01171) - B701

Shuo Wang/Tongji University, Zong Zheng/Tongji University, Fei Shan/Tongji University, Zhongren Wang/Tongji University, Hui Li/Tongji University, Kelei Li/Tongji University

An Improved Two-Stage, Bottom-Up Optimization Approach for Pavement Maintenance and Rehabilitation Decision Making (TRBAM-24-01987) - B702

Qingwei Zeng/Southeast University, Feng Xiao/Southeast University, Xiaorui Sun/Southeast University, Shunxin Yang/Southeast University, Yinxiao Chen/Southeast University

Development of Airfield Pavement Management Framework Considering Structural and Functional Condition Indices Using Advanced Modeling Techniques (TRBAM-24-02417) - B703

Elise Mansour/Louisiana State University, Heena Dhasmana/Louisiana State University, Momen Mousa/Louisiana State University, Marwa Hassan/Louisiana State University

Application of the Machine Learning Method to Determine Spring Load Limits and Winter Weight Premium (TRBAM-24-02480) - B704

Yunyan Huang/University of Alberta, Taher Baghaee Moghaddam/University of Alberta, Leila Hashemian/University of Alberta, Alireza Bayat/University of Alberta

Evaluation of the Long-Term Raveling Performance of Open-Graded Friction Course Pavements in South Carolina (TRBAM-24-04095) - B705

Bradley Putman/Bucknell University, Rishiraj Brahmhatt/Bucknell University

Developing a Model to Predict Bleeding Areas in Asphalt Pavements Using Artificial Neural Network (TRBAM-24-04287) - B706

Rami Khalifah/University of Texas, Tyler, Mena Souliman/University of Texas, Tyler, Pratik Lama/University of Texas, Tyler, Omar Elbagalati/University of Texas, Tyler

Network Pavement Friction Management with Deep Reinforcement Learning (TRBAM-24-04381) - B707

Hongbin Xu/University of Texas, Austin, FENG HONG/University of Texas, Austin, Jorge Prozzi/University of Texas, Austin

Leveraging Deep Reinforcement Learning to Identify Environmentally Benign Management Strategies for Pavement Networks (TRBAM-24-05054) - B708

SiYuan Song/University of British Columbia, Juan del Campo Yañez/University of British Columbia, Ali Kazemeini/University of British Columbia, Omar Sweil/University of British Columbia

A Comparative Analysis of Three Modeling Approaches for Predicting Pavement Conditions (TRBAM-24-05127) - B709

Jing Wang/University of Nebraska, Lincoln, Gurcan Comert/University of Nebraska, Lincoln, Negash Begashaw/University of Nebraska, Lincoln, Nathan Huynh/University of Nebraska, Lincoln, Amara Kouyate/University of Nebraska, Lincoln, Robert Mullen/University of Nebraska, Lincoln, Sarah Gassman/University of Nebraska, Lincoln, Charles Pierce/University of Nebraska, Lincoln

The Development of a Mechanistic-Empirical-Based Highway Cost Allocation Model for Flexible Pavements (TRBAM-24-05360) - B711

Seyed Farhad Abdollahi/Michigan State University, Poornachandra Vaddy/Michigan State University, Muhammed Emin Kutay/Michigan State University

Inclusive Application of Euclidean Distance Optimization for Life-Cycle Cost Analysis and Life-Cycle Assessment: Comparative Assessment of Pavement Alternatives (TRBAM-24-06081) - B712

Subhajit Banerjee/National Institute of Technology, Rourkela, Gourab Saha/National Institute of Technology, Rourkela

Reliability-Based Pavement Roughness Progression Modeling Using Bayesian Approach (TRBAM-24-06194) - B713

Soumyarup Biswas/Indian Institute of Technology, Kharagpur, Kranthi Kuna/Indian Institute of Technology, Kharagpur

Bayesian Method for Integrating Spatial Dependencies into Flexible Pavement Performance Modeling (TRBAM-24-00455) - B714

Gnana Deepika Karanam/North Carolina State University, Shane Underwood/North Carolina State University

(continued)

Pavement Condition Prediction for Communities: A Low-Cost, Ubiquitous, and Network-Wide Approach (TRBAM-24-00578) - B715

Tao Tao/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

2170



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Current Issues in Air Quality and Greenhouse Gas Mitigation

Marianne Hatzopoulou, University of Toronto, presiding

Sponsored By Standing Committee on Air Quality and Greenhouse Gas Mitigation

Modeling Spatial and Temporal Variability of Air Pollution in an Area of Unconventional Natural Gas Operations (TRBAM-24-00204) - B642

Miranda Doris/University of Toronto, Coreen Daley/University of Toronto, Jad Zalzal/University of Toronto, Romain Chesnaux/University of Toronto, Laura Minet/University of Toronto, Mary Kang/University of Toronto, Élyse Caron-Beaudoin/University of Toronto, Heather MacLean/University of Toronto, Marianne Hatzopoulou/University of Toronto

Socially Compliant Human–Robot Interactions: Application to Eco-Driving Control of Autonomous Vehicles (TRBAM-24-00233) - B572

Shian Wang/University of Texas, El Paso

Understanding the Spatio-Temporally Heterogeneous Effects of Built Environment on Urban Travel Emissions (TRBAM-24-00521) - B639

Chuyun Zhao/Central South University, Jinjun Tang/Central South University, Yu Zeng/Central South University, Zhitao Li/Central South University, Fan Gao/Central South University

Defining Provincial Responsibility for Controlling Transportation CO2 Emissions in China: A Fairness Perspective (TRBAM-24-00704) - B621

Lichao Zhu/Zhejiang University of Finance and Economics, Xuezhong Tao/Zhejiang University of Finance and Economics

Fuel Consumption of Adaptive Cruise Control Platoons: Bench Experiments and Data-Driven Estimation for Real Traffic (TRBAM-24-00774) - B611

Thibault Charlottin/Ecole Nationale des Travaux Publics de l'Etat, Silvia Varotto/Ecole Nationale des Travaux Publics de l'Etat, Bruno Jeanneret/Ecole Nationale des Travaux Publics de l'Etat, Sylvain Gillet/Ecole Nationale des Travaux Publics de l'Etat, Christine Buisson/Ecole Nationale des Travaux Publics de l'Etat

Implications of Freight Electrification Scenarios for Greenhouse Gas Emissions, Air Quality, Health, and Environmental Justice (TRBAM-24-00810) - B640

Sara Torbatian/University of Toronto, Marc Saleh/University of Toronto, Junshi Xu/University of Toronto, Laura Minet/University of Toronto, Shayamila Gamage/University of Toronto, Daniel Yazgi/University of Toronto, Shoma Yamanouchi/University of Toronto, Matthew Roorda/University of Toronto, Marianne Hatzopoulou/University of Toronto

Greenhouse Gas Emissions and Potential for Electrifying Transportation Network Companies in Toronto (TRBAM-24-00848) - B630

Marc Saleh/University of Toronto, Marianne Hatzopoulou/University of Toronto, Shoma Yamanouchi/University of Toronto

Assessment of Vehicle Emissions at Toll Stations Using a Portable Emission Measurement System (TRBAM-24-00912) - B648

Dan-Ni Lu/Shanghai Jiao Tong University, Hong-Di He/Shanghai Jiao Tong University, Hong-Mei Zhao/Shanghai Jiao Tong University, Zhong-Ren Peng/Shanghai Jiao Tong University

Urban-Scale Estimation Model of Carbon Emissions for Electric Vehicles During Operation Phase (TRBAM-24-00915) - B647

HaiChao Huang/Shanghai Jiaotong University: Shanghai Jiao Tong University, Hong-Di He/Shanghai Jiaotong University: Shanghai Jiao Tong University, zhizheng Cheng/Shanghai Jiaotong University: Shanghai Jiao Tong University, Zhong-Ren Peng/Shanghai Jiaotong University: Shanghai Jiao Tong University

Air Pollution Prediction and Backcasting Through a Combination of Mobile Monitoring and Historical On-Road Traffic Emission Inventories (TRBAM-24-01043) - B631

arman ganji/University of Toronto, Milad Saeedi/University of Toronto, Marshall Lloyd/University of Toronto, Junshi Xu/University of Toronto, Scott Weichenthal/University of Toronto, Marianne Hatzopoulou/University of Toronto

Does Eco-Driving Really Save Energy: Re-Assessing the Effect of Eco-Driving Considering the Heterogeneity of Driver Acceptance (TRBAM-24-01217) - B618

Shan Xue/Southeast University, Dengbo He/Southeast University, Ran Tu/Southeast University

(continued)

Forecasting of Dynamic Air Pollution Based on Public and Private Traffic Data: A Case Study of Seoul Metropolitan Area, South Korea (TRBAM-24-01261) - B614

Jiayu Yang/Central South University, Linchang Shi/Central South University, Jaeyoung Lee/Central South University, Ingon Ryu/Central South University

Simulation Study on the Effects of an Emission-Based Dynamic Freeway Control (TRBAM-24-01370) - B600

Josephine Grau/Karlsruhe Institute of Technology (KIT), Claude Weyland/Karlsruhe Institute of Technology (KIT), Marvin Baumann/Karlsruhe Institute of Technology (KIT), Lea Fuchs/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

A Deep Reinforcement Learning–Based Autonomous Vehicle Fleet Control with Constrained Entropy-Based Dynamic Routing (TRBAM-24-01392) - B601

Paul (Young Joun) Ha/University of Wisconsin, Madison, Monika Filipovska/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison, Runjia Du/University of Wisconsin, Madison, Samuel Labi/University of Wisconsin, Madison

Vertical Distribution of PM_{2.5} Analyzed by Quantifying the Slope of a Linear Fit to a Vertical Contour Plot: Based on Uncrewed Aerial Vehicle Observations (TRBAM-24-01612) - B637

zhizheng Cheng/Shanghai Jiaotong University: Shanghai Jiao Tong University, Bo-Wen LI/Shanghai Jiaotong University: Shanghai Jiao Tong University, Bai Li/Shanghai Jiaotong University: Shanghai Jiao Tong University, Hong-Di He/Shanghai Jiaotong University: Shanghai Jiao Tong University, HaiChao Huang/Shanghai Jiaotong University: Shanghai Jiao Tong University, Zhong-Ren Peng/Shanghai Jiaotong University: Shanghai Jiao Tong University

Traffic Signal Optimization for Mitigating Pollutants Emissions of Grid Intersections with Contraflow Left-Turn Lanes (TRBAM-24-01650) - B602

Xiao Chen/Southeast University, Yunqing Jia/Southeast University

Mining of Dynamic Traffic Flow–Meteorology–Atmospheric Compound Pollution Correlation Based on Eclat Methods: Taking Guangzhou as an Example (TRBAM-24-01658) - B603

Xinru Yang/Sun Yat-Sen University, Kui Liu/Sun Yat-Sen University, Dawen Yao/Sun Yat-Sen University, Rui Xu/Sun Yat-Sen University, Yuzhuang Pian/Sun Yat-Sen University, Yonghong Liu/Sun Yat-Sen University

Comparing the Temperature Impact on Energy Consumption and Its Interaction with Operating Conditions of Gasoline and Electric Vehicles (TRBAM-24-01721) - B628

Yingjie Guo/Tongji University, Xiaohong Chen/Tongji University, Haobing Liu/Tongji University

Eco-Driving for Platoons in the Vicinity of Signalized Intersection Using Multi-Agent Reinforcement Learning (TRBAM-24-01740) - B604

Zhiwei Yang/University of Queensland, Saint Lucia, Zuduo Zheng/University of Queensland, Saint Lucia, Jiwon Kim/University of Queensland, Saint Lucia, Hesham Rakha/University of Queensland, Saint Lucia

Efficient and Eco Lane-Changing Trajectory Planning for Connected and Automated Vehicles: Deep Reinforcement Learning–Based Method (TRBAM-24-01780) - B615

Shoucai Jing/Chang'an University, Yao Feng/Chang'an University, Fei Hui/Chang'an University, Xiangmo Zhao/Chang'an University, Asad Khattak/Chang'an University

Data-Driven Insights on Driving Behavior, Vehicle Operational Performance, and Exhaust Emissions at Roundabouts (TRBAM-24-01841) - B605

Paulo Fernandes/University of Aveiro, Elisabete Ferreira/University of Aveiro, Eloisa Macedo/University of Aveiro, Margarida C. Coelho/University of Aveiro

Dual-Layer Dynamic Optimization Model for Carbon-Conscious Transportation Mode Allocation (TRBAM-24-01862) - B606

Jing Gan/Nanjing University of Posts and Telecommunications, Dongmei Yan/Nanjing University of Posts and Telecommunications, Linheng Li/Nanjing University of Posts and Telecommunications

Enhancing Last-Mile Connectivity: The Impact of the Built Environment on Bicycle-Metro Integrated Use in Urban Settings (TRBAM-24-01903) - B607

Haotian Guan/Kunming University of Science and Technology, Xiaofeng Ji/Kunming University of Science and Technology, Wu Li/Kunming University of Science and Technology, Xin Qiao/Kunming University of Science and Technology, Fang Chen/Kunming University of Science and Technology

The Impact of the COVID-19 Lockdown on Global Air Quality: Insights from Transportation (TRBAM-24-01938) - B608

Chen Junlan/Southeast University, Feng Liu/Southeast University

Spatio-Temporal Trajectories Optimization of Vehicles at a Signalized Intersection (TRBAM-24-01955) - B609

Hongyan Feng/Southwest Jiaotong University School of Transportation and Logistics, Leilei Kang/Southwest Jiaotong University School of Transportation and Logistics, Lan Liu/Southwest Jiaotong University School of Transportation and Logistics

(continued)

Assessing Mobility Changes Caused by automated mobility on demand by Integrating SimMobility, Aimsun, and Google-Ortools: A Comparative Study of Santander and Tel-Aviv (TRBAM-24-01965) - B626
 Ada Garus/European Commission Joint Research Center, Gabi Dadashev/European Commission Joint Research Center, Yedidya Levi/European Commission Joint Research Center, Bat-hen Nahmias-Biran/European Commission Joint Research Center, Biagio Ciuffo/European Commission Joint Research Center

Environmental Concentrations of Trace Elements, PM2.5, and BC in São Paulo Emitted by Road Vehicles (TRBAM-24-01968) - B584
 Pedro Perez-Martinez/Universidade Estadual de Campinas, Regina Maura De Miranda/Universidade Estadual de Campinas

Autonomous Vehicles and the Urban Parking Paradigm: Unraveling Environmental Implications and Citizen Preference (TRBAM-24-01989) - B627
 Ada Garus/European Commission Joint Research Center, Andrés Rodríguez/European Commission Joint Research Center, Andromachi Mourtzouchou/European Commission Joint Research Center, Luigi dell'Olio/European Commission Joint Research Center, Borja Alonso Oreña/European Commission Joint Research Center, Biagio Ciuffo/European Commission Joint Research Center

Estimation of Carbon Dioxide Savings from a Reduction of Car Drop-off Trips to School: A Montreal Case Study (TRBAM-24-02103) - B574
 Lea Simon de Kergunic/McGill University, Luis Miranda-Moreno/McGill University

The Green Transition of the Irish Vehicle Fleet: Assessing Future Impacts on Non-Exhaust PM2.5 Emissions (TRBAM-24-02125) - B582
 Shauna Kelly/Trinity College, Dublin, John Gallagher/Trinity College, Dublin, Anna Charly/Trinity College, Dublin, Brian Caulfield/Trinity College, Dublin

The Impact of Traffic Policies on Travelers Under Air Pollution: In the Perspective of Traffic Population PM2.5 Exposure (TRBAM-24-02139) - B620
 Yueqi Liu/Southwest Jiaotong University, Ke Han/Southwest Jiaotong University

Modifying MOVES Brake Wear Emission Modeling for Light-Duty Vehicles in a Metropolitan Area (TRBAM-24-02152) - B629
 Qiuzi Chen/Southeast University, Haobing Liu/Southeast University, Shunyao Wang/Southeast University, Ran Tu/Southeast University

Capturing the Impacts of Construction Activities Using a Network of Low-Cost Sensors Placed on Residential Balconies (TRBAM-24-02286) - B632
 Weaam Jaafar/University of Toronto, Junshi Xu/University of Toronto, Emily Farrar/University of Toronto, Cheol-Heon Jeong/University of Toronto, arman ganji/University of Toronto, Greg Evans/University of Toronto, Marianne Hatzopoulou/University of Toronto

Estimating Emissions from Heterogeneous Traffic Flow: A Refined Cellular Automata Model Considering Vehicle Interactions (TRBAM-24-02833) - B560
 Yuxin Wang/Beijing Jiaotong University, Yizheng Wu/Beijing Jiaotong University, Lewen Wang/Beijing Jiaotong University, Leqi Zhang/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University

Climate Change Emissions Related Behaviors: Are Transport Among the Hardest to Do? (TRBAM-24-02890) - B612
 E.O.D Waygood/Polytechnique Montréal: Polytechnique Montreal, Hamed Naseri/Polytechnique Montréal: Polytechnique Montreal, Bobin Wang/Polytechnique Montréal: Polytechnique Montreal, Jérôme Laviolette/Polytechnique Montréal: Polytechnique Montreal

Modeling the Impact of Accident on Traffic CO2 Emissions at Freeways (TRBAM-24-03006) - B617
 Chenjie Lv/Tongji University, Jiading, Haobing Liu/Tongji University, Jiading, Qin Nie/Tongji University, Jiading

Real-World CO2 and NOx Emissions: Diesel Versus Petrol Cars in India (TRBAM-24-03106) - B592
 Chandrashekar C/Indian Institute of Technology, Hyderabad, Aishree Boruah/Indian Institute of Technology, Hyderabad, Pritha Chatterjee/Indian Institute of Technology, Hyderabad, Digvijay Pawar/Indian Institute of Technology, Hyderabad

The Industry's Perspectives on ECI and Zero Carbon Goals for New Zealand's Horizontal Infrastructure Sector (TRBAM-24-03184) - B570
 Paul Botha/University of Canterbury, Claudia Reid/University of Canterbury, Amelia McGill/University of Canterbury, Jacobus Van der Walt/University of Canterbury, Eric Scheepbouwer/University of Canterbury

A GNL-Based, Multi-Vehicle Type, Multi-Criteria SUE Model and Reasonable CO2 Emissions Pricing in Urban Transportation (TRBAM-24-03301) - B540
 Ziyue Zhu/Tongji University, Yuling Ye/Tongji University, Jiaqi He/Tongji University

(continued)

Developing a Representative Electric Car Driving Cycle for Energy Consumption Estimation in Indian Road Conditions (TRBAM-24-03316) - B593

Aishree Boruah/No Organization, Digvijay Pawar/No Organization, Ravisha Jain/No Organization, Tejaswini Eregowda/No Organization, Pritha Chatterjee/No Organization

Evaluating Carbon Reduction from Ride Splitting: From the Perspective of Modal Substitution for Different Modes (TRBAM-24-03318) - B638

Zhe Zhang/Shanghai Jiao Tong University, Kun Gao/Shanghai Jiao Tong University, Hong-Di He/Shanghai Jiao Tong University, Qing Yu/Shanghai Jiao Tong University, Zhong-Ren Peng/Shanghai Jiao Tong University

Eco-Driving Control for Connected and Automated Vehicles at Signalized Intersections in Mixed Traffic Considering Preceding Traffic Uncertainties (TRBAM-24-03343) - B541

Kaiming Lu/Beijing University of Technology, Yanyan Chen/Beijing University of Technology, Yao Tong/Beijing University of Technology, Jian Zhang/Beijing University of Technology, Ying Luo/Beijing University of Technology

A Novel Method to Identify High Emission State of CO₂ and NO_x Based on Performance Measurement System Data of Private Gasoline Vehicles: Insight from Driving Behaviors (TRBAM-24-03377) - B619

Hua Liu/Southeast University, Jiulonghu, Tiezhu Li/Southeast University, Jiulonghu, Ran Tu/Southeast University, Jiulonghu, Haibo Chen/Southeast University, Jiulonghu, Randy Franstiarajah/Southeast University, Jiulonghu, Ying Li/Southeast University, Jiulonghu

Eco-Driving Control Architecture for Mixed Traffic Platoons of Intelligent Combustion Vehicles and Intelligent Electric Vehicles (TRBAM-24-03455) - B542

Jianghui Wen/Wuhan University of Technology, Kaiyuqi Guan/Wuhan University of Technology

An Integrated Traffic Micro-Simulation and Microscopic Emission Model Calibration for Tailpipe Emission Estimation in Indian Cities (TRBAM-24-03540) - B543

Tamojit Ghosh/VTI: Statens Vag och Transportforskninginstitut, Kinjal Bhattacharyya/VTI: Statens Vag och Transportforskninginstitut, Suman Ganguly/VTI: Statens Vag och Transportforskninginstitut, Bhargab Maitra/VTI: Statens Vag och Transportforskninginstitut

Eco-Trajectory Planning for Connected and Autonomous Vehicles with the Heuristic Explicit Model Predictive Control (TRBAM-24-03640) - B544

Yuanzheng Lei/University of Maryland, College Park, Yao Cheng/University of Maryland, College Park, Xianfeng Yang/University of Maryland, College Park

On the Value of Orderly Electric Vehicle Charging in Carbon Reduction (TRBAM-24-03760) - B534

Zhi Li/New York University, Shanghai, Zhibin Chen/New York University, Shanghai, Chenghe Guan/New York University, Shanghai, Minghui Zhong/New York University, Shanghai

Examining Regional Variations in Private Car CO₂ Emissions and Fuel Consumption Over 18 Years: The Case of Australia (TRBAM-24-03865) - B533

Kai Li Lim/University of Queensland, Ying Lu/University of Queensland, Renee Zahnow/University of Queensland, Tiebei Li/University of Queensland, Jago Dodson/University of Queensland, Anthony Kimpton/University of Queensland, Neil Sipe/University of Queensland, Jonathan Corcoran/University of Queensland

A Spatial Analysis of the Fuel Economy Rebound Effect Focusing on Small and Rural Communities (TRBAM-24-03871) - B645

Narges Ahmadnia/University of Vermont College of Engineering and Mathematical Sciences, Gregory Rowangould/University of Vermont College of Engineering and Mathematical Sciences

Vehicle Load Consideration in a Deep Reinforcement Learning Based Eco-Driving Assistance Strategy at Signalized Intersections (TRBAM-24-04042) - B550

Yongxin Peng/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Manze Guo/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

The Impact of Cold Starts and Hybrid Electric Vehicles on On-Road Vehicle Emissions Based on Light-Duty Vehicle Trip Trajectories (TRBAM-24-04045) - B551

Yun Jiang/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Yizheng Wu/Beijing Jiaotong University, Hongyu Lu/Beijing Jiaotong University, Zhiqiang Zhai/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Car-Following Model Considering Jerk-Constrained Acceleration Stochastic Process for Emission Estimation (TRBAM-24-04048) - B552

Dongli Meng/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Jianchang Huang/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Tools for Evaluating the Emissions Impact of Utility Electric Vehicle Charging Programs in California (TRBAM-24-04115) - B624

Peter Ambiel/University of California, Davis, Alan Jenn/University of California, Davis, Gil Tal/University of California, Davis

(continued)

Uncertainty Analysis of Carbon Dioxide Emission Factors with a Focus on Non-Expressways (TRBAM-24-04176) - B562

Zeyu Zhang/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Leqi Zhang/Beijing Jiaotong University, Yizheng Wu/Beijing Jiaotong University

Decarbonizing Transport Sector by Electrifying Carsharing Fleet in Ireland (TRBAM-24-04210) - B583

Tushar Choudhari/Trinity College, Dublin, Ubaid Illahi/Trinity College, Dublin, Mazen Al-Hosni/Trinity College, Dublin, Brian Caulfield/Trinity College, Dublin, Margaret O'Mahony/Trinity College, Dublin

Multi-Scale Vehicle Traffic Air Pollutant Exposure and Equity Analysis in the United States Using a Novel Emissions Exposure Surrogate (TRBAM-24-04254) - B644

Brittany Antonczak/University of Vermont, Tammy Thompson/University of Vermont, Mindi DePaola/University of Vermont, Gregory Rowangould/University of Vermont

Household Well-to-Wheel Greenhouse Gas Emission Prediction: A Montreal Case Study (TRBAM-24-04327) - B613

Hamed Naseri/Polytechnique Montréal: Polytechnique Montreal, E.O.D Waygood/Polytechnique Montréal: Polytechnique Montreal, Zachary Patterson/Polytechnique Montréal: Polytechnique Montreal, Bobin Wang/Polytechnique Montréal: Polytechnique Montreal

Campus-Community Partnership to Characterize Air Pollution in a Neighborhood Impacted by Major Transportation Infrastructure (TRBAM-24-04387) - B641

Emily Farrar/University of Toronto, Natalie Kobayaa/University of Toronto, Weaam Jaafar/University of Toronto, Sara Torbatian/University of Toronto, Shayamila Gamage/University of Toronto, Bryan Bowen/University of Toronto, Jeff Brook/University of Toronto, Arthur Chan/University of Toronto, Greg Evans/University of Toronto, Marie-Monique Giroux/University of Toronto, Angela Homewood/University of Toronto, Cheol-Heon Jeong/University of Toronto, Lesley Monette/University of Toronto, Joan Prowse/University of Toronto, Jeffrey Siegel/University of Toronto, Beverly Thorpe/University of Toronto, Junshi Xu/University of Toronto, Marianne Hatzopoulou/University of Toronto

Impacts of Area-Wide Air Pollution on Multimodal Traffic: Comparing Motor Vehicle, Pedestrian, and Transit Volumes in Northern Utah (TRBAM-24-04459) - B635

Prachanda Tiwari/Utah State University, Keunhyun Park/Utah State University, Patrick Singleton/Utah State University

Optimizing the Energy Benefits of Connected Autonomous Electric Vehicles While Considering Human-Driven Vehicles (TRBAM-24-04612) - B573

Jianshe Guo/University of Texas, El Paso, Shian Wang/University of Texas, El Paso, Maziar Zamanpour/University of Texas, El Paso, Suiyi He/University of Texas, El Paso, Zongxuan Sun/University of Texas, El Paso

A Methodological Framework to Determine the Optimal Set of Driving Cycles for a Region (TRBAM-24-04769) - B610

Asad Yarahmadi/Polytechnique Montréal, Catherine Morency/Polytechnique Montréal, Martin Trepanier/Polytechnique Montréal

Where Have All of the Used Zero-Emission Vehicles (ZEVs) Gone?: An Early Look at the Used ZEV Market in California (TRBAM-24-04836) - B625

Trisha Ramadoss/University of California, Davis, Gil Tal/University of California, Davis

Greenhouse Gas Emissions Inventory from Roadway Construction: A Case Study for the Washington State Department of Transportation (TRBAM-24-04866) - B622

Milad Zokaei Ashtiani/Carbon Leadership Forum, Monica Huang/Carbon Leadership Forum, Meghan Lewis/Carbon Leadership Forum, Jordan Palmeri/Carbon Leadership Forum, Kathrina Simonen/Carbon Leadership Forum

Decarbonization Roadmap Proposals for Roadway Infrastructure Construction (TRBAM-24-04889) - B623

Milad Zokaei Ashtiani/Carbon Leadership Forum, Meghan Lewis/Carbon Leadership Forum, Monica Huang/Carbon Leadership Forum, Jordan Palmeri/Carbon Leadership Forum, Kathrina Simonen/Carbon Leadership Forum

Deep Learning-Based, Heavy-Duty Diesel Truck Fuel Consumption Estimation Incorporating Vehicle Weight and On-Board Diagnostic Data (TRBAM-24-05052) - B553

PENGFEI FAN/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University

Can Clean Vehicle Technology Reduce Exposure to Traffic-Related Air Pollution in Disadvantaged Communities? (TRBAM-24-05060) - B532

Rohit Jaikumar/Texas A&M Transportation Institute, Georges Bou-Saab/Texas A&M Transportation Institute, Minjie Xu/Texas A&M Transportation Institute, Elizabeth Rhinehart/Texas A&M Transportation Institute, Kristie Yoshikawa/Texas A&M Transportation Institute, Ben Ettelman/Texas A&M Transportation Institute

Exploring Decarbonization Pathways for U.S. Passenger and Freight Mobility (TRBAM-24-05126) - B531

Christopher Hoehne/National Renewable Energy Laboratory (NREL), Matteo Muratori/National Renewable Energy Laboratory (NREL), Paige Jadun/National Renewable Energy Laboratory (NREL), Brian Bush/National Renewable Energy Laboratory (NREL), Arthur Yip/National Renewable Energy Laboratory (NREL), Catherine Ledna/National Renewable Energy Laboratory (NREL), Laura Vimmerstedt/National Renewable Energy Laboratory (NREL), Kara Podkaminer/National Renewable Energy Laboratory (NREL), Ookie Ma/National Renewable Energy Laboratory (NREL)

Examining the Impact of the COVID-19 Pandemic on Traffic Network and Vehicular Emissions for Halifax, Canada (TRBAM-24-05197) - B530

Fariba Hossain/Dalhousie University, Muhammad Habib/Dalhousie University

Analysis of the Influence of Sea-Land Breezes on the Vertical Distribution of Traffic-Related Air Pollutants Based on Unmanned Aerial Vehicles Monitoring (TRBAM-24-05202) - B649

Bai Li/University of South Florida, Rong Cao/University of South Florida, Yu Zhang/University of South Florida, Zhong-Ren Peng/University of South Florida

The Impact of Lockdown Policies on Urban Traffic Conditions and Carbon Dioxide Emissions (TRBAM-24-05275) - B563

Zeyu Zhang/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Leqi Zhang/Beijing Jiaotong University, Zhiqiang Zhai/Beijing Jiaotong University, Yizheng Wu/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

A Novel Highway Traffic Capacity Analyzing Method Under Road Region Atmospheric Environment Constrains Based on a Computational Fluid Dynamics Model (TRBAM-24-05289) - B520

Ruohan Li/Villanova University, Hualan Wang/Villanova University, Qiyang Zhang/Villanova University, Ting Nie/Villanova University

High-Emitting Vehicle Identification Model and Emission Characteristics for Heavy-Duty Diesel Trucks Utilizing Remote On-Board Diagnostics Data (TRBAM-24-05366) - B564

Yiran Huang/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Zhiqiang Zhai/Beijing Jiaotong University, Yizheng Wu/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Prediction of Power Structure for Different Vehicle Types on Interprovincial Highways Under the Background of Coordinated Development of Urban Agglomerations (TRBAM-24-05435) - B521

Jianhong Ye/Tongji University, Jiading, Yifei Qin/Tongji University, Jiading, Guanpei Luo/Tongji University, Jiading, Yifan Hu/Tongji University, Jiading, Meigen Xue/Tongji University, Jiading, Yifei Qin/Tongji University, Jiading

Is That Route Really the Most Fuel Efficient? (TRBAM-24-05487) - B522

Mark Burris/Texas A&M University, College Station, Mahim Khan/Texas A&M University, College Station, Jeremy Johnson/Texas A&M University, College Station

Sustainable Travel Behaviors in Urban and Rural Contexts: Who and Where Matters in an Examination of the Built Environment and Travel Behavior Across the Urban–Rural Continuum in the United States (TRBAM-24-05604) - B523

Harrison Schukei/University of Vermont, Dana Rowangould/University of Vermont

The Environmental Impact of Autonomous Cars Considering Platooning with Buses in Urban Scenarios (TRBAM-24-05688) - B554

Yixin Zhang/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Jiaxin Ma/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

An Eco-Driving Algorithm with Two-Stage Advisory Speed Limits at Signalized Intersections (TRBAM-24-05711) - B616

Pengyuan Sun/University of California, Irvine, R. Jayakrishnan/University of California, Irvine

Eco-Approach and Departure Strategies Along Actuated Signalized Corridor (TRBAM-24-05815) - B633

Zhensong Wei/University of California, Riverside, Peng Hao/University of California, Riverside, David Oswald/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Matthew Barth/University of California, Riverside

Investigating the Impact of Mixed Electrified Ridehailing Fleet: A Microscopic Simulation in San Francisco (TRBAM-24-05880) - B634

Haishan Liu/University of California, Riverside, Peng Hao/University of California, Riverside, Matthew Barth/University of California, Riverside

Telematics-Based Estimation of On-Road Greenhouse Gas Emissions and Comparison Against Reference Data (TRBAM-24-05898) - B524

Max Gardner/StreetLight Data, Emily Eros/StreetLight Data, Tanner Burke/StreetLight Data, Laura Schewel/StreetLight Data

Diesel Truck Emissions from Freight Trip Generation Impacts on Air Quality of Port Cities (TRBAM-24-05952) - B514

Diana Ramirez-Rios/University at Buffalo, SUNY, Genesis Moran Gonzalez/University at Buffalo, SUNY, Lily MacIver/University at Buffalo, SUNY, Rachel Bressler/University at Buffalo, SUNY

(continued)

EcoMRL: Deep Reinforcement Learning–Based Traffic Signal Control for Urban Air Quality (TRBAM-24-05973) - B513

Jaeun Jung/Korea Advanced Institute of Science and Technology (KAIST), Jinwon Yoon/Korea Advanced Institute of Science and Technology (KAIST), Inhi Kim/Korea Advanced Institute of Science and Technology (KAIST)

30 Years of Congestion Mitigation and Air Quality Improvement Program (TRBAM-24-06059) - B512

Xinwei Li/Cornell University, Timothy Fraser/Cornell University, Oliver Gao/Cornell University

Automated Travel Demand and Network Modeling to Estimate Road Traffic Carbon Emissions: A Global City Comparison (TRBAM-24-06094) - B646

Steven Travis Waller/Indian Institute of Technology, Madras, Rushikesh Amrutsamanvar/Indian Institute of Technology, Madras, Moeid Qurashi/Indian Institute of Technology, Madras, Sai Chand/Indian Institute of Technology, Madras, Amalia Polydoropoulou/Indian Institute of Technology, Madras

An Location Routing Problem with Lateral Transshipment: An Alternating Direction Method of Multipliers–Based Approach Applied to Integrated Hydrogen Supply Chain (TRBAM-24-06126) - B636

JIANG TING/Inha University, Riju Lavanya/Inha University, Daisik Nam/Inha University

Systematic Literature Review Evaluating Readiness of Novel Materials and Improved Pedestrian Infrastructure to Mitigate Heat (TRBAM-24-06283) - B643

Elizabeth Doran/University of Vermont, Morgan Boothe/University of Vermont, Gregory Rowangould/University of Vermont

Exploring Psychological Factors Influencing the Adoption of Sustainable Public Transit Considering Preference Heterogeneity (TRBAM-24-06297) - B511

gyeongjae Lee/Hongik University, Sangho Choo/Hongik University, Yoonhee Lee/Hongik University, Sujae Kim/Hongik University, Jahun Koo/Hongik University

Real-World Emissions from BS-VI Diesel Bus in Indian Urban and Sub-urban Traffic Environment (TRBAM-24-06439) - B594

Rohan Rawat/No Organization, Aishree Boruah/No Organization, Digvijay Pawar/No Organization, Chandrashekar C/No Organization, Pritha Chatterjee/No Organization

The impact of the four-day work week on road transport emissions: an agent-based modelling approach (TRBAM-24-06489) - B510

Lewen Feng/Monash University, Dong Xiao/Monash University

Emission Analysis of New Energy Vehicles Based on Mixed Traffic Flow and License Plate Recognition Models (TRBAM-24-06522) - B500

Shaojie Wu/Chang'an University, Daniel(Jian) Sun/Chang'an University, Guo Qiu/Chang'an University

2171



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Transit Capacity and Quality of Service

David Mach, Torrance Transit, presiding

Sponsored By Standing Committee on Transit Capacity and Quality of Service

This poster session includes a dozen papers on a variety of topics related to transit capacity and quality of service. Subjects include transit capacity, as well as transit quality of service topics such as satisfaction, transit travel times and speeds, crowding, and stop locations for a tram service. Two papers discuss topics related to the Covid-19 pandemic including station performance and the return to transit in a changing landscape including increased telework. An additional two papers discuss the integration of aerial ropeways and cable cars into a public transit system. Another paper focuses on transit issues at North American borders.

Exploring the Relationship Between Travel Mode Choice, Preference, and Satisfaction (TRBAM-24-00655) - B662

Hisham Negm/McGill University, Jonas De Vos/McGill University, Ahmed El-Geneidy/McGill University

Developing Transit Rider Experience Strategy Through Journey Mapping, Market Research, and Customer Segmentation (TRBAM-24-02773) - B663

Lucien Liz-Lepiorz/Chicago Transit Authority, Maulik Vaishnav/Chicago Transit Authority

Exploring How Satisfaction with Existing Bus Transit Influence the Intention to Shift to Aerial Ropeways (TRBAM-24-03676) - B664

Hridya G Muralidharan/Indian Institute of Technology, Agnivesh Pani/Indian Institute of Technology, Varun Varghese/Indian Institute of Technology, Prasanta Sahu/Indian Institute of Technology, Ayan Mukhopadhyay/Indian Institute of Technology, Abhishek Dubey/Indian Institute of Technology

(continued)

Urban Aerial Cable Cars Integrated into Public Transit: Operational Capacity Limits Due to Passenger Queuing at Stations (TRBAM-24-01986) - B665

Morten Flessler/Technische Universität Braunschweig, Amer Shalaby/Technische Universität Braunschweig, Bernhard Friedrich/Technische Universität Braunschweig

Should We Plan for Transit Travel Times or Travel Speeds? (TRBAM-24-03801) - B667

Yuxuan Wang/Polytechnique Montréal, Catherine Morency/Polytechnique Montréal, Martin Trepanier/Polytechnique Montréal

Real-Time, On-Board Crowding Estimation in Public Transport Networks with Multiple Lines Using Non-Exhaustive Automatic Passenger Counting Data (TRBAM-24-03363) - B674

Charalampos Sipeas/Aalto University, Claudio Roncoli/Aalto University, Ektoras Chandakas/Aalto University, Ioannis Kaparias/Aalto University

Multi-Objective Stop Location Optimization Model for Minimizing Social, User, and Operator Costs in Urban Tram Systems (TRBAM-24-00238) - B668

Tim de Ridder/Delft University of Technology, Johannes van der Stok/Delft University of Technology, Haneen Farah/Delft University of Technology, Niels Van Oort/Delft University of Technology, Bart van Arem/Delft University of Technology

Investigating the Performance of Integrated Transit Stations: A Comparative Study in a Mega-City Before and During the COVID-19 Pandemic (TRBAM-24-01851) - B675

Joong Kwon Lee/Korea Advanced Institute of Science and Technology (KAIST), Reuben Tamakloe/Korea Advanced Institute of Science and Technology (KAIST)

The Return to Transit in a Changing Landscape: Telework and Safety Concerns (TRBAM-24-06467) - B677

Spencer Aeschliman/Northwestern University, Amanda Stathopoulos/Northwestern University

Method for Calculating Adaptability Between Passenger Demand and Capability Supply for Urban Rail Transit (TRBAM-24-05439) - B669

Yang Yang/Beijing Jiaotong University, Shangmin Zhou/Beijing Jiaotong University, Jianhui Lai/Beijing Jiaotong University, Zimo Xu/Beijing Jiaotong University

Transit Capacity and Quality of Service Issues at North American Border Regions (TRBAM-24-06223) - B678

Luis Galicia/Texas A&M Transportation Institute, Erik Vargas/Texas A&M Transportation Institute

Public Transit Optimal Frequency and Vehicle Capacity for Profit Maximization (TRBAM-24-01290) - B679

Avi Herbon/Bar Ilan University, Yuval Hadas/Bar Ilan University

2172



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

First-Mile and Last-Mile Access to Transportation Hubs and Rail Stations

Lisa Ballard, King County (WA) Metro Transit, presiding

Charles Rivasplata, San Jose State University, presiding

Sponsored By Standing Committee on Passenger Intermodal Facilities

Posters focus on passenger intermodal facilities such as transportation hubs and rail stations. The majority of the papers will examine the first mile/last mile access to stations by various modes. Three presentations will focus on a specific mode: effective bus routing, motorcycling, and electric bikes. One paper will model mode choice to a transportation hub, while another examines urban form and its relationship to shifting away from cars to access rail.

Railway Stations as Spaces for the New Mobility: Correlations Among Urbanization Processes, Accessibility of Public Transport Infrastructures, and Modal Shifts (TRBAM-24-00536) - B693

Cristina Pronello/Politecnico di Torino, Italy, Francesco Torre/Politecnico di Torino, Italy

Customized Bus Routing Considering Competition with Taxi Services at Transport Hubs (TRBAM-24-01651) - B700

Yuhang Guo/Tongji University, Jiading, Wanjing Ma/Tongji University, Jiading, Kun An/Tongji University, Jiading

First Mile Solution via Motorcycling to Enhance Public Transport Competitiveness in Motorcycle Dependent Cities (TRBAM-24-00948) - B690

An Minh Ngoc/Kochi University of Technology, Le Huyen/Kochi University of Technology, Nishiuchi Hiroaki/Kochi University of Technology, Dinh Binh/Kochi University of Technology, Nguyen Tu/Kochi University of Technology, Tran Thao/Kochi University of Technology, Ngo Minh/Kochi University of Technology, Khuat Hung/Kochi University of Technology, Vu Tru/Kochi University of Technology, Nguyen Thao/Kochi University of Technology

How Do Intercity Travelers Choose Their Last-Mile Transportation Modes After Arriving Transportation Hub?: A Mixture Regression Model Approach Considering Their Psychological Heterogeneity (TRBAM-24-00960) - B691
Jiangbo Yu/Beijing University of Technology, Jiancheng Weng/Beijing University of Technology, Pengfei Lin/Beijing University of Technology, Yuxing Sun/Beijing University of Technology, Jiaolong Chai/Beijing University of Technology
Equitable Access to Electric Bikes: The Plight of Last-Mile Delivery Workers (TRBAM-24-05436) - B692
Charvi Gupta/WSP

2173



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Navigating Medicaid Transformation: Transformative Impact on Non-Emergency Medical Transportation in North Carolina

Christian Kent, Christian T. Kent, Transit Management Consulting, LLC, presiding
Sponsored By Standing Committee on Rural, Intercity Bus, and Specialized Transportation

Delve into the inaugural year of Medicaid Managed Care in North Carolina, exploring its profound influence on Non-Emergency Medical Transportation (NEMT). The session unpacks crucial research findings, highlighting the initial impact on coordinated public transportation. Gain insights into the nuanced challenges faced by Community Transit Organizations through a qualitative analysis, shedding light on policy implications. Join us for a comprehensive overview of Medicaid transformation's ripple effect, analyzing the complexities and opportunities in North Carolina's evolving healthcare transportation landscape.

Impacts of Medicaid Transformation on Community Transit Organizations in North Carolina: A Qualitative Analysis with Policy Implications (TRBAM-24-00246) - B651

Manuel Santana Palacios/Ohio State University, Noreen McDonald/Ohio State University, Iacobucci Evan/Ohio State University

Medicaid Transformation and Non-Emergency Medical Transportation in North Carolina Initial Experiences for Coordinated Public Transportation (TRBAM-24-00269) - B652

Kai Monast/Institute for Transportation Research and Education, Jeremy Scott/Institute for Transportation Research and Education, Jonah Freedman/Institute for Transportation Research and Education, Waugh Wright/Institute for Transportation Research and Education, Tim Brock/Institute for Transportation Research and Education

Assessing the First-Year Impact of Medicaid Managed Care on Non-Emergency Medical Transportation in North Carolina (TRBAM-24-05424) - B650

Youngseob Eum/University of North Carolina, Charlotte, Noreen McDonald/University of North Carolina, Charlotte

2174



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Emerging Issues in Rural, Intercity Bus, and Specialized Transportation

Thomas Craig, Washington State Department of Transportation, presiding
Sponsored By Standing Committee on Rural, Intercity Bus, and Specialized Transportation

This session is designed for professionals, researchers, and experts to see new ideas, discuss challenges, and explore innovative solutions related to rural, intercity bus, and specialized transportation.

Choice of Government Subsidy Strategy for a Rural Passenger and Cargo Transportation Model (TRBAM-24-00188) - B659

Wenbing Shui/Kunming University of Science and Technology, Lina Shao/Kunming University of Science and Technology, Yang Yang/Kunming University of Science and Technology

Access to Opportunity in Lagging Regions: The Case of Appalachia Region and Opportunity Zones (TRBAM-24-04643) - B655

Shirley Shiqin Liu/University of Minnesota, Eric Lind/University of Minnesota, Saumya Jain/University of Minnesota, Andrew Owen/University of Minnesota

Getting There on Greyhound: Travel Time Changes on Mid-Distance Routes on the Intercity Bus Network in the United States, 2017–2023 (TRBAM-24-05821) - B656

Joseph Schwieterman/DePaul University, Carrie Craig/DePaul University, Blythe Chesney/DePaul University

(continued)

Assessing Campus Circulator Service (TRBAM-24-05897) - B657

Gregory Newmark/Morgan State University, Christina Funk/Morgan State University, Shanjeeda Akter/Morgan State University

Evaluating the Effectiveness of Automated Scheduling at Rural Transit Agencies in North Carolina (TRBAM-24-00378) - B653

Matthew Bhagat-Conway/University of North Carolina, Luke Pullo/University of North Carolina, Kai Monast/University of North Carolina

A Data-Driven Approach to the State of Good Repair: Predicting Rolling Stock Service Life with Machine Learning for State of Good Repair Backlog Reduction and Long-Range Replacement Cost Estimation in Small Urban and Rural Transit Systems (TRBAM-24-02098) - B658

Dilip Mistry/NDSU/UGPTI Transportation Safety Systems Center, Jill Hough/NDSU/UGPTI Transportation Safety Systems Center

2175



Monday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Extending the Transit Data Universe: New Sources, Supplements, and Methods

Raymond Chan, Arcadis IBI Group, presiding

Sponsored By Standing Committee on Transit Data

The transit data universe is rich with sources of information on people, vehicles, and schedules. Traditional analyses rely on these familiar data sources to make sense of things like vehicle delay and rider behavior. New data sources, like weather observations or ride hailing data, now add a different dimension of understanding of behavioral choice. Sensors like WiFi beacons can be a new source of anonymous travel behavior data, and refined methods for detection and analysis can reveal things like trip purpose from automated data. Expanding the scope and use of the transit data universe means riders can ultimately experience a higher quality of service thanks to the knowledge at the disposal of the transit agency.

A Data-Driven Approach to Update Public Transport Service Elasticities (TRBAM-24-00101) - B672

Howard Wong/Delft University of Technology, Menno Yap/Delft University of Technology

Simulating Transport Demand Response to New Public Transit Projects Using General Transit Feed Specification Data and the BEAM CORE Integrated Modeling System (TRBAM-24-04633) - B680

Cristian Poliziani/Lawrence Berkeley National Laboratory, Tom Wenzel/Lawrence Berkeley National Laboratory, Zachary Needell/Lawrence Berkeley National Laboratory, Haitam Laarabi/Lawrence Berkeley National Laboratory, Rashid Waraich/Lawrence Berkeley National Laboratory, Annika Todd-Blick/Lawrence Berkeley National Laboratory, Sydney Fujita/Lawrence Berkeley National Laboratory, Nazanin Rezaei/Lawrence Berkeley National Laboratory, Juan Caicedo/Lawrence Berkeley National Laboratory, Carlos Guirado/Lawrence Berkeley National Laboratory, C. Anna Spurlock/Lawrence Berkeley National Laboratory

Modeling the Effect of Weather Variations on Bus Ridership Using Multi-Source Data (TRBAM-24-01628) - B681

Xinling Lei/Southeast University, Xuewu Chen/Southeast University, Long Cheng/Southeast University, Wendong Chen/Southeast University

Crowd-Sensing Commuting Train Patterns Using Multi-Source Wireless Data (TRBAM-24-01849) - B673

Zhiren Huang/Aalto University, Charalampos Sipetas/Aalto University, Alonso Espinosa Mireles de Villafranca/Aalto University, Tri Quach/Aalto University

A Comparative Field Study: Commercial Versus Low-Cost, Camera-Based Automated Passenger Counting Systems (TRBAM-24-02463) - B694

Cristina Pronello/Politecnico di Torino, Italy, Ximena Rocio Garzón Ruiz/Politecnico di Torino, Italy

Automated Passengers Trip Phase Recognition and Public Transit Accessibility Level Analysis via Machine Learning Models Using GPS Data (TRBAM-24-03123) - B682

seyedhassan hosseini/Università di Roma La Sapienza, Siavash Pourkhosro/Università di Roma La Sapienza, Lory Michelle Bresciani Miristice/Università di Roma La Sapienza, Francesco VITI/Università di Roma La Sapienza, Guido Gentile/Università di Roma La Sapienza

Evaluating the Public Transit Competitiveness Using Revealed Travel Data Incorporating Multi-Scale Geographically Weighted Regression (TRBAM-24-03162) - B683

Jae-Yeon Hwang/University of Seoul, Shin-Hyung Cho/University of Seoul, Shin Hyoung Park/University of Seoul

Analysis of Supply Gap in Public Transit Based on Differences in Travel Efficiency with Ridehailing (TRBAM-24-03404) - B684

Liangbin Cui/Chang'an University, Yajuan Deng/Chang'an University, Yanyan Zha/Chang'an University, Qinxin Peng/Chang'an University, Yu Bai/Chang'an University

Wi-Fi-Based Occupancy Estimation for Automated Guideway Transit: A Case Study of Miami-Dade Metromover (TRBAM-24-04251) - B685

Nattakarn Surangsrirout/Florida A&M University-Florida State University, Qianwen Guo/Florida A&M University-Florida State University

Identifying Users Transferring Between Transportation Modes: A Stable Matching Approach (TRBAM-24-04947) - B686

Zheng Liu/Southwest Jiaotong University, Hongtai Yang/Southwest Jiaotong University, Yao Meng/Southwest Jiaotong University, Ke Han/Southwest Jiaotong University, Zhengbing He/Southwest Jiaotong University, Guocong Zhai/Southwest Jiaotong University

Using Smart Card Data to Analyze the Impact of Weather on Public Transport Ridership: A Case Study on Bus Ridership in the West Midlands of the UK (TRBAM-24-06361) - B687

Yihang Huang/University of Birmingham, Qian Fu/University of Birmingham, David Jaroszweski/University of Birmingham, John Easton/University of Birmingham

Exploring the Relationships between Ridesourcing and Public Transit in Shanghai Through Big Data Analysis and Machine Learning (TRBAM-24-06399) - B688

Xinghua Liu/Tongji University, Kaidi Yang/Tongji University, Ye Li/Tongji University

Assessing the Impact of Transit Accessibility on Employment Density: A Spatial Analysis of Gravity-Based Accessibility Considering Job Matching, Transit Service Types, and First- and Last-Mile Modes (TRBAM-24-02950) - B689

Soheil Sharifi/University of Texas, Arlington, Subham Kharel/University of Texas, Arlington, Qisheng Pan/University of Texas, Arlington, Jiangling Li/University of Texas, Arlington

G2Viz: Online Tool for Visualizing and Analyzing Public Transit System Using General Transit Feed Specification Data (TRBAM-24-01106) - B699

Sirapop Para/University of Calgary, Thanachok Wirotsasithon/University of Calgary, Thanisorn Jundee/University of Calgary, Merkebe Demissie/University of Calgary, Santi Phithakkitnukoon/University of Calgary

Estimating Possible Mode Shifts Using Smartcard Data for Bus Transit Planning (TRBAM-24-01503) - B698

Fırat Kesmez/İzmir Yüksek Teknoloji Enstitüsü, Volkan Uz/İzmir Yüksek Teknoloji Enstitüsü, Tolga Ercan/İzmir Yüksek Teknoloji Enstitüsü

Identifying Commuter Passengers from Transit Smart Card Data with an Entropy Pattern-Based Clustering Approach (TRBAM-24-01885) - B697

Yang Zhou/Tongji University, Yan Tang/Tongji University, Zi Yang/Tongji University, Tangyi Guo/Tongji University

Application Accuracy Evaluation of Public Transportation Trip Purpose Inference from the Perspective of Individual Trips (TRBAM-24-03494) - B696

Huilin Zhang/Southwest Jiaotong University, Pengyao Ye/Southwest Jiaotong University

Forecasting Short-Term Subway Passenger Flow Using Wi-Fi Data Comparative Analysis of Advanced Time-Series Methods (TRBAM-24-03937) - B695

Diego Da Silva/University of Toronto, Amer Shalaby/University of Toronto

2176

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 102B

Automation, Vehicle Technologies, and the Human Interaction

Huei-Yen (Winnie) Chen, University at Buffalo, SUNY, presiding

Shannon Roberts, University of Massachusetts, Amherst, presiding

Sponsored By Standing Committee on Human Factors of Vehicles

Understanding Autonomous Vehicle Acceptance Through First-Hand Riding Experience: An Empirical Study (TRBAM-24-03002)

QianShan Jiang/Central South University, Jaeyoung Lee/Central South University

Ethical Decision Making by Drivers When Facing Trolley Problem Under Time Pressure (TRBAM-24-01966)

Suyang An/University of Tsukuba, Sarah Yahoodik/University of Tsukuba, Samuel Petkac/University of Tsukuba, Yusuke Yamani/University of Tsukuba, Makoto Itoh/University of Tsukuba

(continued)

Collaborating with Your Car in Unstructured Driving Environments: Requiring Low Effort Mitigates Age-Related Challenges in Driver–Automation Collaboration (TRBAM-24-05781)

Hansol Rheem/University of Wisconsin, Madison, Joonbum Lee/University of Wisconsin, Madison, John Lee/University of Wisconsin, Madison, Joseph Szczerba/University of Wisconsin, Madison, Akilesh Rajavenkatanarayanan/University of Wisconsin, Madison, Roy Mathieu/University of Wisconsin, Madison

Investigating the Influences of Previous Negative Warning on Driver Response Time to Forward Collision Warning Using Interpretable Machine Learning (TRBAM-24-02112)

Yichang Shao/Southeast University, Yuhan Zhang/Southeast University, Xuehui Jiang/Southeast University, Xiaomeng Shi/Southeast University, Yueru Xu/Southeast University, Zhirui Ye/Southeast University

Predicting Drivers' Takeover Performance Based on Fréchet Distance Using Machine Learning (TRBAM-24-02751)

Jundi Liu/Iowa State University, Doo Won Han/Iowa State University, Yier Dong/Iowa State University, Hexin Zhang/Iowa State University, Feng Zhou/Iowa State University, William Horrey/Iowa State University, Alicia Romo/Iowa State University, Lisa Molnar/Iowa State University, Dawn Tilbury/Iowa State University, Lionel Robert/Iowa State University, Xi Yang/Iowa State University

2177

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 103A

Innovations in Understanding Crash Risk Across the Life Span

Federico Vaca, University of California, Irvine, presiding

Rebecca Weast, Insurance Institute for Highway Safety, presiding

Sponsored By Standing Committee on Vehicle User Education, Training, and Licensing

This session will cover multiple papers concerned with novel analytic techniques to investigate crash data that spans across the lifespan.

Factors Affecting Crash Severity Among Elderly Drivers: A Multi-Level Ordinal Logistic Regression Approach (TRBAM-24-00385)

Mubarak Alrumaidhi/Virginia Polytechnic Institute, Hesham Rakha/Virginia Polytechnic Institute

Evaluating Crash Severity Among Elderly Drivers: A Machine Learning Approach with Synthetic Resampling Techniques (TRBAM-24-00862)

Mubarak Alrumaidhi/Virginia Polytechnic Institute, Mohamed Farag/Virginia Polytechnic Institute, Hesham Rakha/Virginia Polytechnic Institute

Investigating Older Driver Crashes on High-Speed Roadway Segments Using Random Parameter Ordered Probit Model (TRBAM-24-02248)

Ahmed Hossain/University of Louisiana, Lafayette, Xiaoduan Sun/University of Louisiana, Lafayette, Subasish Das/University of Louisiana, Lafayette, Monire Jafari/University of Louisiana, Lafayette, Julius Codjoe/University of Louisiana, Lafayette

Identification of Risk Factors for Severe Younger and Older Driver Crashes in Massachusetts (TRBAM-24-04864)

Jeff Gooch/VHB, Md Mahmud/VHB, Frank Gross/VHB, Bonnie Polin/VHB

The Role of the Built Environment, Roadway Characteristics, and Socioeconomic Factors in Keeping Teen Drivers Safe: An Investigation of the Factors Most Related to Teen Driver Fatalities (TRBAM-24-04963)

Jasmine Wu/University of Pennsylvania, Xiaoxia Dong/University of Pennsylvania, Megan Ryerson/University of Pennsylvania

2178

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon C

Comparing Apples to Apples: Finding Agreement on Comparing the Crash Record of Automated Driving Systems and Human Drivers

Jane Lappin, Blue Door Strategy and Research, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation

Recent traffic incidents involving L4 "robotaxis" on public roads have focused public attention on the safety of these automated driving systems. One important approach for public understanding of the safety impact of L4 "robotaxis" is through a comparison to human drivers. When making this comparison, the details matter, as current research papers demonstrate that different approaches to the crash data leads to very different conclusions. This panel will address the critical questions of which data are needed and what methods are most relevant to the challenge of comparing ADS and human driver safety.

Safety Assessment of Automated Driving Systems: Numerators, Denominators, and Comparison to Humans (P24-21152)

Carol Flannagan/University of Michigan, Transportation Research Institute

Comparing Automated Driving Systems and Human Crashes Involves More Than Just counting Them (P24-21153)

Eric Teoh/Insurance Institute for Highway Safety

Automated Vehicle Crash Rate Comparison Using Naturalistic Data (P24-21154)

Miguel Perez/Virginia Polytechnic Institute

Safety Impact of the Waymo Driver (P24-21155)

Kristofer Kusano/Waymo

2179

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon B

2024 Traffic Control Device Student Challenge: Innovations to Improve the Nighttime Visibility of Traffic Control Devices: A LECTERN-Poster Session

Melisa Finley, Texas A&M Transportation Institute, presiding

Eric Perry, American Traffic Safety Services Association, presiding

Sponsored By Standing Committee on Traffic Control Devices, Section - Operations

Now in its 7th year of competition, the objective of the Traffic Control Device (TCD) Student Challenge is to promote innovation and stimulate ideas in the traffic control devices area with a goal to improve operations and safety. The challenge is sponsored by and conducted cooperatively by the Transportation Research Board (TRB) Standing Committee on Traffic Control Devices (ACP55) and the American Traffic Safety Services Association (ATSSA). The theme for the 2024 TCD Student Challenge is Innovations to Improve the Nighttime Visibility of Traffic Control Devices.

Smart Crosswalk (P24-20856)

Renan Favero/University of Florida

Enhancing Conspicuity of Pedestrian Crossing Signs Using Interconnected Dynamic Feedback Signs (P24-20857)

Sakar Pahari/Michigan State University, Gagan Gupta/Michigan State University, Vahid Bahrami/Michigan State University, Sunday Imosemi/Michigan State University

Ascending Passive Detection to Light the Way of Vulnerable Road Users (GlowSafely) (P24-20873)

Angelina Caggiano/University of Massachusetts, Amherst, Andy Giaya/University of Massachusetts, Amherst

Enhancing Nighttime Visibility for Human Drivers and Connected and Autonomous Vehicles Through Innovative Traffic Control Devices: Integrating LED-Lit E-Paper Displays and LiDAR Sensors (P24-20874)

Manmohan Joshi/University of Connecticut, Saki Rezwana/University of Connecticut, Haimanti Bala/University of Connecticut, Prakash Ranjan/University of Connecticut, Oluwaseun Olufowobi/University of Connecticut, Syed Islam/University of Connecticut

Innovative Solutions for Enhancing Nighttime Traffic Visibility: Transitioning from Static to Dynamic Signs (P24-20875)

Saqib Mohammed Haroon/The University of Arizona, Sushmita Bhandari/University of Arizona

(continued)

Projecting Safety: Ultra-Short Throw Devices for Nighttime Traffic Control Auburn University (P24-20876)

Fangjian Yang/Auburn University, Tonghui Li/Auburn University, Zijie Zhao/Auburn University, Ernest Nsong Asiedu/Auburn University

Utilizing Facial Attenuation in Traffic Control Devices (P24-20877)

Joseph Parampathu/Wilmington University

2180

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon A

National Transportation Safety Board Accident Investigations

Carl Schultheisz, National Transportation Safety Board (NTSB), presiding

Kristin Poland, National Transportation Safety Board (NTSB), presiding

Sponsored By Section - Safety

Multi-Vehicle Crash Involving Excessive Speed and Impaired Driving at Signalized Intersection in North Las Vegas (P24-21434)

Ellen Lee/National Transportation Safety Board (NTSB)

A Snapshot of Safety Research: Alcohol, Other Drug, and Multiple Drug Use Among Drivers (P24-21435)

Ryan Smith/National Transportation Safety Board (NTSB), Jana Price/National Transportation Safety Board (NTSB)

SEACOR Power Capsizing: Stability of Vessels with Unusual Hull Forms (P24-21436)

Andrew Ehlers/National Transportation Safety Board (NTSB)

National Transportation Safety Board Safety Recommendation Program (P24-21437)

Julie Perrot/National Transportation Safety Board (NTSB), Kara Waldrup/National Transportation Safety Board (NTSB)

2181

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 150B

Measuring Long-Distance Travel and Its System-Wide Impact

Jeffrey LaMondia, Auburn University, presiding

Sponsored By Standing Committee on Statewide/National Transportation Data and Information Management, Joint Subcommittee on Long Distance Travel (with AEP25)

This session will examine how long distance travel choices impact current transportation system concerns, including community quality of life, automated vehicle adoption, and air quality.

The Many Definitions of Long-Distance Travel – a Discussion (TRBAM-24-06342)

Miriam Magdolen/Karlsruhe Institute of Technology (KIT), Bastian Chlond/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

Exploring the Life and Trip Satisfaction of Extreme Commuters (TRBAM-24-00261)

Kyusik Kim/Florida State University, Mark Horner/Florida State University

Self-Driving Cars and Their Impacts on Americans' Long-Distance Domestic Travel Patterns (TRBAM-24-00583)

Fatemeh Fakhroosavi/University of Texas, Austin, Priyanka Paithankar/University of Texas, Austin, Kara Kockelman/University of Texas, Austin, Yantao Huang/University of Texas, Austin, Jason Hawkins/University of Texas, Austin

Reducing Greenhouse Gas Emissions from Long-Distance Travel Business: How Far Can We Go? (P24-20457)

Kara Kockelman/University of Texas, Austin, Ruohan Li/University of Texas, Austin, Jooyong Lee/University of Texas, Austin

2182

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 150A

Urban Data Analysis Using GIS

Eric Green, Kentucky Transportation Cabinet, presiding

Richard Grady, No Organization, presiding

Sage Donaldson, Arizona Department of Transportation, presiding

Sponsored By Standing Committee on Geographic Information Science, Standing Committee on Urban Transportation Data and Information Systems

This session will feature four papers related to urban data utilizing GIS tools.

Traffic Congestion and Travel Time Accessibility to Health Care Facilities Across Urban Networks: A Case Study in Madrid, Spain (TRBAM-24-04575)

Jose Balsa-Barreiro/New York University, Abu Dhabi, Gaby Hannoun/New York University, Abu Dhabi, Sergio Batista/New York University, Abu Dhabi, Monica Menendez/New York University, Abu Dhabi

Urban Road Network Traffic Isochrone Model for Feature Extraction and Causal Analysis: A Case of Shanghai (TRBAM-24-03931)

Linwei Liu/Tongji University, Zhen Kang/Tongji University, Xiaoguang Yang/Tongji University

Establishing an Index on Adjacent Network Impact for Extensive Understanding of a Link in Urban Networks (TRBAM-24-03328)

Seung Woo Ham/Seoul National University, Eui-Jin Kim/Seoul National University, Dong-Kyu Kim/Seoul National University

Using Geographically Weighted Models to Explore Temporal and Spatial Varying Impacts on Commute Trip Change Due to COVID-19 (TRBAM-24-05557)

Saeed Saleh Namadi/University of Maryland, College Park, Behnam Tahmasbi/University of Maryland, College Park, Asal Mehditabrizi/University of Maryland, College Park, Aref Darzi/University of Maryland, College Park, Deb Niemeier/University of Maryland, College Park

2183

CM (1.75)

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 152B

A Discussion on the Use of Gender in the Analytical Transportation Planning Process

Jonathan Ehrlich, Metropolitan Council, presiding

Sponsored By Standing Committee on Transportation Demand Forecasting, Standing Committee on Women and Gender in Transportation

Today, travel models nearly universally consider two sex categories, male and female, matching Census data, or none at all. As many agencies are embarking on new travel survey data and re-estimating models to reflect post-COVID conditions, it's a good time to think about how best to specify these new models. Additionally, there is more interest in understanding impacts to different population groups and whether the model is sensitive to that population group may influence the appropriateness of the model to evaluate such metrics. Picking one example and exploring it in depth, a panel of experts will present and discuss the implications and considerations for including sex and/or gender as an explanatory variable.

What Travel Models Can and Cannot Do Regarding Gender-Related Travel Behavior (P24-20746)

Thomas Rossi/Cambridge Systematics

Gender Differences in Activity-Travel Behaviors and Wellbeing Outcomes (P24-20747)

Ying Song/University of Minnesota, Twin Cities

Mobility of Care Framework (P24-21546)

Flordea Di Ciommo/Cambiamo | changingMObility S.c.m.

Conducting Equitable and Socially Informed Gender Analysis (P24-21547)

Sarah McCullough/University of California, Davis

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 151A

Advancements in Analysis of Roadway Noise

Ahmed El-Aassar, Gannett Fleming, Inc., presiding

Sponsored By Standing Committee on Transportation-Related Noise and Vibration

This session will include presentations examining analysis and design strategies to reduce roadway noise. Attendees will learn about: Investigating alternative representation of building structures in traffic noise modeling; Effective low noise rumble strip design and performance; Characterization and modeling of textured cement concrete pavement surfaces for tire pavement noise prediction; and Multi-criteria evaluation of photovoltaic noise barriers with different configurations.

Investigating Alternative Representations of Building Structures in Traffic Noise Modeling (TRBAM-24-03959)

Benjamin Sperry/Illinois Department of Transportation, Devon Destocki/Illinois Department of Transportation, Judith Rochat/Illinois Department of Transportation, Karel Cubick/Illinois Department of Transportation

Effective Low Noise Rumble Strip Design and Performance (TRBAM-24-04778)

Paul Donovan/Illingworth and Rodkin, Inc., Carrie Janello/Illingworth and Rodkin, Inc.

Characterization and Modeling of Textured Cement Concrete Pavement Surfaces for Tire-Pavement Noise Prediction (TRBAM-24-02306)

Songli Songli/University of Science and Technology Beijing, Wei Ya/University of Science and Technology Beijing, Zhoujing Ye/University of Science and Technology Beijing, Huifang Liu/University of Science and Technology Beijing, Biyu Yang/University of Science and Technology Beijing, Wenzhao Liu/University of Science and Technology Beijing, Linbing Wang/University of Science and Technology Beijing

Multi-Criteria Evaluation of Photovoltaic Noise Barriers with Different Configurations: A Case Study in China (TRBAM-24-03031)

Xinyuan Cao/Southeast University, Qiao Dong/Southeast University, Xueqin Chen/Southeast University, Shiao Yan/Southeast University, Xiang Wang/Southeast University, Bin Shi/Southeast University, Yao Kang/Southeast University



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 152A

Why Risk Matters: A Fireside Chat with State Department of Transportation Leaders

Mara Campbell, Jacobs, presiding

Sponsored By Section - Executive Management Issues, Subcommittee on Risk Management, Standing Committee on Strategic Management, Standing Committee on Workforce Development and Organizational Excellence, Subcommittee on Organizational Management, Standing Committee on Performance Management, Standing Committee on Transportation Asset Management, Subcommittee on Asset Management Education, Standing Committee on Research Innovation Implementation Management, Subcommittee on Coordination and Collaboration, Subcommittee on Research through Deployment of Emerging Topics, Subcommittee on the Transportation Innovation Lifecycle, Standing Committee on Public Engagement and Communications, Standing Committee on Information and Knowledge Management, Standing Committee on Economics and Finance, Subcommittee on Public-Private Partnerships, Joint Subcommittee on Congestion Pricing Economics (with AEP60), Standing Committee on Contracting Equity, Standing Committee on Data for Decision Making, Subcommittee on Da

Managing risk across agencies, within programs, and at the project level is a critical factor in ensuring safety, accessibility, and reliability throughout the system. Risk management involves more than just the identification and mitigation of threats or hazards but rather the positive or negative effects of uncertainty or variability on agency objectives. In this respect, risks are not always negative and are more about managing uncertainty, variability, threats, hazards, and even opportunities, all of which can affect organizational objectives. This State DOT CEO Fireside Chat will provide an opportunity for attendees to hear directly from executives about how they approach risk across their agency.

Panel (P24-20397)

Nancy Daubenberger/Minnesota Department of Transportation, Toks Omishakin/California State Transportation Agency (CalSTA), Garrett Eucalitto/Connecticut Department of Transportation, Russell McMurry/Georgia Department of Transportation

2186

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 151B

Applications of Large Language Models for Information and Knowledge Management

Kendra Levine, University of California, Berkeley, presiding

Sponsored By Standing Committee on Information and Knowledge Management

Many have hoped that the semantic web would make organizing and finding information easier, but large language models (LLMs) and other AI applications have made some of those dreams a reality. This panel will present a number of examples of how people are using LLMs right now for information and knowledge management. We will also have a discussion about potential future applications and ways organizations can start using LLMs today.

Converting Self-Generated Content into Actionable Insight Through Large Language Models (P24-20359)

Matthew Miller/Cambridge Systematics, Edward Seymour/Texas A&M Transportation Institute

Embeddings: Bringing Generative Artificial Intelligence Together with Your Data (P24-20360)

Daniel LeMaster/Office of the Assistant Secretary for Research and Technology (OST-R)

Unraveling the Complexity and Dependency Between Transportation Research and Artificial Intelligence Using Large Language Models (P24-20362)

Abhijit Sarkar/Virginia Polytechnic Institute

2187

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 201

Charging Ahead: Exploring the Unexpected Challenges of Electric Vehicle Adoption

Ian Williams, Venable, LLP, presiding

Sponsored By Standing Committee on Emerging Technology Law

Industry and government have major goals for the widespread adoption of electric vehicles (EVs) across the 2020s and beyond. The speed and scale of adoption raises underappreciated legal and policy issues: How can stakeholders manage consumer expectations and educate consumers on the realities of EV performance and capabilities, while also engaging with other road users on the realities of sharing the road with EVs? What will EVs demand of infrastructure? How can industry and government address the current lack of charging capacity, the likely increase in demand for electricity, and the potential for increased wear and tear on infrastructure caused by heavier EVs? How concerned should stakeholders be about "greenwashing" in the EV industry?

Charging Ahead: Exploring the Unexpected Challenges of Electric Vehicle Adoption (P24-21072)

Shant Boyajian/Nossaman LLP, Hayes Morrison/Massachusetts Port Authority

2188

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 204C

Highest and Best Use Within the Right-of-Way

Christopher Kramer, Nossaman LLP, presiding

Sponsored By Standing Committee on Eminent Domain and Land Use

The improvements like pavements, signs, markings, and structures are all diminishing-value assets, which is to say they lose value over time. The land upon which these improvements sit, however, never depreciates in value. This appreciating-value asset (the only one within the right-of-way) should be featured in an asset management system. The purpose of this session is to make a business case for this, and to relay information regarding resources being made available.

The Four Tests of Highest and Best Use (P24-20491)

Chris Huffman/Huffman Corridor Consulting

Right-of-Way as an Asset (P24-20496)

Lindsey Svendson/Federal Highway Administration (FHWA)

2189



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 202A

Dialogue with Transportation Infrastructure Leaders

Jesse Beaver, SGH, presiding

Tara Cavalline, University of North Carolina, Charlotte, presiding

Sponsored By Transportation Infrastructure Group, Section - Bridges and Structures, Standing Committee on Innovative Highway Structures and Appurtenances, Standing Committee on Steel Bridges, Standing Committee on Concrete Bridges, Standing Committee on Testing and Evaluation of Transportation Structures, Standing Committee on Seismic Design and Performance of Bridges, Standing Committee on Tunnels and Underground Structures, Standing Committee on Culverts, Buried Bridges and Soil Structure Interaction, Section - Construction, Standing Committee on Construction Management, Standing Committee on Project Delivery Methods, Standing Committee on Quality Assurance Management, Standing Committee on Construction of Bridges and Structures, Standing Committee on Concrete Pavement Construction and Rehabilitation, Standing Committee on Asphalt Pavement Construction and Rehabilitation, Standing Committee on Fabrication and Inspection of Metal Structures

Each year Sections of the Transportation Infrastructure Group identify nationally recognized individuals for an engaging, interactive dialogue on the future of their fields. Speakers and moderators are selected for their roles as leaders in the transportation and research community and as mentors to the next generation of professionals.

Moving Beyond the Integrated Fracture Control Plan for Steel Bridges (P24-21173)

Robert Connor/Purdue University

Introduction (P24-21369)

Tara Cavalline/University of North Carolina, Charlotte

2190

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 207A

Speed Effects of Geometric Design

Elizabeth Hilton, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Performance Effects of Geometric Design

RoadGNN-S: A Multi-Dimensional Perspective Fusion Model for Operating Speed Prediction in Highway Geometric Design Using Graph Neural Networks (TRBAM-24-06007)

Bo Yu/Tongji University, Jianqiang Gao/Tongji University, Yuren Chen/Tongji University, Lanfang Zhang/Tongji University, Shan Bao/Tongji University, Kun Gao/Tongji University

Speed Disparity on Horizontal Curves in Mixed Vehicle Technologies (TRBAM-24-04250)

Yasser Hassan/Carleton University, Tahmina Sultana/Carleton University

Analysis of Speed Patterns on S Curves Using Naturalistic Driving Data (TRBAM-24-02072)

Cailin Lei/Tongji University, Yu Shen/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University, Siby Samuel/Tongji University

Quantifying the Effect of Street Design on Driving Speed on Urban Roads (TRBAM-24-06315)

Michael van Eggermond/University of Applied Sciences Northwestern Switzerland, Dorothea Schaffner/University of Applied Sciences Northwestern Switzerland, Nora Studer/University of Applied Sciences Northwestern Switzerland, Alexander Erath/University of Applied Sciences Northwestern Switzerland

2191

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 101

Roadside Safety Features and Design

Wade Odell, Texas Department of Transportation, presiding

Sponsored By Standing Committee on Roadside Safety Design

Demonstrating Crashworthiness of Bridge Railings in Maine (TRBAM-24-01313)

Ethan Ray/Roadsafe LLC, Christine Carrigan/Roadsafe LLC, Chuck Plaxico/Roadsafe LLC

(continued)

Analysis and Testing of Modifications to a Single-Column, Slip Base Aluminum Sign Support for MASH TL-3 Crashworthiness (TRBAM-24-05728)

Rodrigo Quintero/University of Nebraska, Lincoln, Joshua Steelman/University of Nebraska, Lincoln, Chen Fang/University of Nebraska, Lincoln, Robert Bielenberg/University of Nebraska, Lincoln, Ronald Faller/University of Nebraska, Lincoln, Brandon Perry/University of Nebraska, Lincoln

The Influence of High Energy Absorbing Passive Safe Poles in Run-Off Road Crash Severity (TRBAM-24-00817)

Carlos Roque/Laboratorio Nacional de Engenharia Civil, João Cardoso/Laboratorio Nacional de Engenharia Civil, Heike Martensen/Laboratorio Nacional de Engenharia Civil, Quentin Lequeux/Laboratorio Nacional de Engenharia Civil

MASH Allowable Flare Rates for Portable Single-Slope Concrete Barrier (TRBAM-24-03009)

Sofokli Cakalli/Texas A&M University, Roger Bligh/Texas A&M University, Nauman Sheikh/Texas A&M University

2192

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 102A

Research in Utility-Related Impact of U.S. Department of Transportation Projects

Kenny Franklin, Parsons, presiding

Sponsored By Standing Committee on Utilities

This session investigates utility-related impacts of DOT projects and assesses the value and costs of considerations including the acquisition of right of way for utilities, costs associated with utility investigations, assessment of utility-related claims, and impacts of utility pavement cuts.

Utility Cut Impact Assessment and Fee Development Using Functional and Structural Field Data (TRBAM-24-00015)

Sharlan Dunn/NCE, Debaroti Ghosh/NCE, Melissa Marshall/NCE

Acquisition of Utility Property Interests for Transportation Projects (TRBAM-24-04999)

Cesar Quiroga/Texas A&M Transportation Institute, Jenny Naranjo/Texas A&M Transportation Institute, John Campbell/Texas A&M Transportation Institute

Evaluating Completeness and Positional Accuracy of Traditional Utility Records Compared to Subsurface Utility Engineering: A Comparative Case Study Analysis (TRBAM-24-05677)

Jeremiah Adebisi/Iowa State University, Jim Anspach/Iowa State University, Roy Sturgill/Iowa State University

Assessing Utilities-Related Claims on Transportation Projects (TRBAM-24-05740)

Abdullah Alsharef/King Saud University, Siddharth Banerjee/King Saud University, Clare Fullerton/King Saud University, Alyson Tamer/King Saud University, Edward Jaselskis/King Saud University

2193



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 209AB

Paving the Way Forward: Exploring Building Information Modeling for Pavements and Why You Cannot Afford to Miss It

Matthew Corrigan, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Production and Use of Asphalt

BIM for Pavements and data science will become increasingly inseparable allies in the infrastructure sector, with their combined power contributing significantly to the advancement of asphalt pavement technologies and the overall improvement of transportation networks. By analyzing this data, scientists and engineers can develop predictive models that help optimize pavement performance and maintenance, reduce costs, and enhance the lifespan of asphalt pavements. This Lectern Session will emphasize recent emerging efforts that emphasize data science in the area of asphalt pavements and why BIM for Pavements is an important emerging topic that will revolutionize how we design, construct, maintain, and improve the performance of our pavements.

Paving the Way Forward: Exploring Building Information Modeling for Pavements and Why You Cannot Afford to Miss It (P24-20128)

Matthew Corrigan/Federal Highway Administration (FHWA)

Automated Pavement and Asset Detection and Evaluation and Its Convergence with Building Information Modeling (P24-20129)

William Buttlar/University of Missouri

(continued)

Artificial Intelligence–Driven Smart Flexible Pavements (P24-20130)

Imad Al-Qadi/University of Illinois, Urbana-Champaign

Computational Modeling to Support the Development of Asphalt Pavement Digital Twins (P24-20131)

Eyad Masad/Texas A&M University, Qatar

2194

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 204AB

Advancements in High Reclaimed Asphalt Pavement Asphalt Mixtures: Design, Performance, and Recycling Strategies

Rami Chkaiban, Applied Research Associates, Inc., presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design

This session will delve into the latest research and developments related to the use of Recycled Asphalt Pavement (RAP) in asphalt mixture design. The presentations will explore the utilization of Availability Adjusted Mix Design Methods to mitigate the impacts of RAP on asphalt performance, assess the performance of high RAP mixtures with recycling agents, discuss strategies to enhance the cracking resistance of high RBR asphalt mixtures, and examine the effects of different recycling agents on the performance of high-RAP asphalt mixtures. The session aims to foster an understanding of the challenges associated with high RAP asphalt mixtures and to identify promising techniques and strategies to optimize their use in paving applications.

Availability Adjusted Mix Design Method as a Tool to Mitigate the Adverse Effects of Reclaimed Asphalt Pavement on the Performance of Asphalt Mixtures (TRBAM-24-04723)

Douglas Mocelin/North Carolina State University, Mayzan Isied/North Carolina State University, Cassie Castorena/North Carolina State University

Performance Assessment of High Reclaimed Asphalt Pavement Asphalt Mixtures with Recycling Agents (TRBAM-24-03587)

Jaime Preciado/North Carolina State University, Saqib Gulzar/North Carolina State University, Cassie Castorena/North Carolina State University, Shane Underwood/North Carolina State University, Jhony Habbouche/North Carolina State University, Ilker Boz/North Carolina State University

Establishing Strategies to Improve Cracking Resistance of High Recycled Binder Ratio Asphalt Mixtures (TRBAM-24-04542)

Biswajit Kumar Bairgi/Auburn University, Madhav Verma/Auburn University, Nam Tran/Auburn University, Fan Yin/Auburn University, Raquel Moraes/Auburn University, Carolina Rodezno/Auburn University, Amy Martin/Auburn University, Juliana Montañez/Auburn University, Edith Arámbula-Mercado/Auburn University

The Influence of Petroleum-Based and Bio-Derived Recycling Agents on Performance of High Reclaimed Asphalt Pavement Asphalt Mixtures (TRBAM-24-04992)

Ibrahim Elnaml/Louisiana Department of Transportation and Development, Jun Liu/Louisiana Department of Transportation and Development, Louay Mohammad/Louisiana Department of Transportation and Development, Gaylon Baumgardner/Louisiana Department of Transportation and Development, Samuel Cooper, III/Louisiana Department of Transportation and Development, Samuel Cooper, Jr./Louisiana Department of Transportation and Development

2195

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 202B

Innovation in Pavement Surface Distress Assessment

Douglas Frith, Quality Engineering Solutions, Inc., presiding

Gerardo Flintsch, Virginia Polytechnic Institute, presiding

Sponsored By Standing Committee on Pavement Condition Evaluation

The session presents a series of innovations on surface distress evaluation for project and network level pavement management decisions.

Automatic Detection of Road Subsurface Distress via Curriculum Learning: Learn Like an Expert (TRBAM-24-01095)

guanghua yue/Tongji University, Chenglong Liu/Tongji University, Yishun Li/Tongji University, Yuchuan Du/Tongji University, Qian Gao/Tongji University

(continued)

An Investigation of the Data Variability of Network-Level Pavement Condition Data (TRBAM-24-04135)

Raja Shekharan/Virginia Department of Transportation, Aishwarya Baranikumar/Virginia Department of Transportation, Kalyan Asam/Virginia Department of Transportation, Zhaohua Wang/Virginia Department of Transportation, Douglas Frith/Virginia Department of Transportation

Multi-Year Raveling Deterioration Analysis Using Macrotecture and Aggregate Loss Indicators from 3D Pavement Surface Data (TRBAM-24-06372)

Ryan Salameh/Georgia Institute of Technology, Pingzhou (Lucas) Yu/Georgia Institute of Technology, Haolin Wang/Georgia Institute of Technology, Yi-Chang Tsai/Georgia Institute of Technology

Advancing Subsurface Distress Detection: Field Validation of Deep Learning–Based Ground–Penetrating Radar Image Analysis (TRBAM-24-04763)

Ahmad Abdelmawla/University of Georgia, Jidong Yang/University of Georgia, Sung-Hee Kim/University of Georgia

2196

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 103B

Making Better Highway Maintenance Decisions: Balancing Needs, Constraints, and Equity

Rob Zilay, Dye Management Group, Inc., presiding

Sponsored By Standing Committee on Maintenance and Operations Management, Standing Committee on Pavement Management Systems, Standing Committee on Maintenance Management Systems

A Novel Spatio-Temporal Aggregation Method for Ride Comfort Evaluation on Urban Road Considering Uncertainties of Vehicle and Speed (TRBAM-24-03496)

Wangda Guo/Beijing University of Technology, Jinxi Zhang/Beijing University of Technology, Yongjie Ding/Beijing University of Technology, Lei Nie/Beijing University of Technology

Analysis and Short-Term Forecasting of Traffic Intensity: Exploring the Impact of Road Maintenance (TRBAM-24-03394)

Eline Belt/Massachusetts Institute of Technology, Thomas Koch/Massachusetts Institute of Technology, Elenna Dugundji/Massachusetts Institute of Technology

Evaluating the Impact of Maintenance Actions on Diverse Users in Shared Automobile, Bicycle, and Pedestrian Facilities (TRBAM-24-00393)

Qiang Chen/George Mason University, Elise Miller-Hooks/George Mason University, Sue McNeil/George Mason University, Shelley Stoffels/George Mason University, Pengsen Hu/George Mason University, Yuanchi Liu/George Mason University

Equity in Transportation Asset Management: Proposed Framework (TRBAM-24-03888)

Sara Arezoumand/Iowa State University, Omar Smadi/Iowa State University

2197

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 206

Long-Term Bridge Performance Program

Jennifer Wells, Minnesota Department of Transportation, presiding

Shri Bhide, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Structures Maintenance, Standing Committee on Bridge and Structures Management, Standing Committee on Bridge Preservation

This session includes updates to the long-term bridge performance program, accelerated bridge performance testing, agency experience with bridge preservation action decision making, InfoBridge, and awards.

Long-Term Bridge Performance Program Updates (P24-20741)

Jane Jiang/Federal Highway Administration (FHWA)

Accelerated Bridge Performance Testing (P24-20742)

Robert Zobel/Federal Highway Administration (FHWA)

Agency Experience with Bridge Preservation Action Decision Making (P24-20743)

Morgan Kessler/Federal Highway Administration (FHWA)

InfoBridgeTM: What Is New (P24-20744)

Shri Bhide/Federal Highway Administration (FHWA)

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 146A

Examining the Equity Impact of Transportation Policies and Practices

Gloria Jeff, Minnesota Department of Transportation, presiding

Tracee Strum-Gilliam, PRR, Inc., presiding

Sponsored By Standing Committee on Equity in Transportation

This session features papers that examine equity in outcomes across a variety of transportation domains. Participants will learn about the connections between race and transit service during the Covid-19 pandemic, perceptions of fairness in transit service, how racial discrimination can impact ridehailing pickups, and new research on racial bias in police traffic stops.

Racializing Roads: Are Police Traffic Stops Racially Biased? (TRBAM-24-01578)

Wenfei Xu/The University of Sydney, Michael Smart/The University of Sydney, Nebiyu Tilahun/The University of Sydney, Sajad Askari/The University of Sydney, Zachary Dennis/The University of Sydney, David Levinson/The University of Sydney

Transit Board Diversity and Pandemic Service Cuts in Vulnerable Communities (TRBAM-24-01901)

Carole Voulgaris/Harvard University, Rosalie Ray/Harvard University, Lauren Fischer/Harvard University

Cancel Culture: Simulating the Effects of Discrimination in Ridesourcing Systems (TRBAM-24-02645)

Anna Cobb/Carnegie Mellon University, Aniruddh Mohan/Carnegie Mellon University, Corey Harper/Carnegie Mellon University, Jeremy Michalek/Carnegie Mellon University, Destenie Nock/Carnegie Mellon University

Is Transit Providing Fair Service?: Analyzing Public Perceptions of Equity Ideals in Chicago, Illinois (TRBAM-24-04294)

Erik Huang/Northwestern University, Amy Hofstra/Northwestern University, Amanda Stathopoulos/Northwestern University

Structural Racial and Ethnic Disparities in Transit Supply During the COVID-19 Pandemic (TRBAM-24-05458)

hossein gazmeh/University of Alabama, Lijun Sun/University of Alabama, Yuntao Guo/University of Alabama, steven jones/University of Alabama, Xinwu Qian/University of Alabama

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 146B

Affordable Housing and Homelessness: A Framework for Mobility Solutions

Veronica Murphy, New Jersey Department of Transportation, presiding

Sponsored By Standing Committee on Community Resources and Impacts

Examining Household Movement Patterns Near Three U.S. Light Rail Systems Using Survival Analysis and Household-Level Microdata (TRBAM-24-02600)

Adam Schmidt/EBP, Eleni Bardaka/EBP

Spatial Disparities of Transport and Environmental Effects on Affordable Housing (TRBAM-24-06317)

Fatemeh Janatabadi/George Mason University, Katherine Pease/George Mason University, Alireza Ermagun/George Mason University

Optimizing Bikeshare Service to Connect Affordable Housing Units with Transit Service (TRBAM-24-01188)

Xiaodong Qian/Wayne State University, Runhua Xiao/Wayne State University, Raina Joby/Wayne State University, Miguel Jaller/Wayne State University

Is Transit-Oriented Development Affordable for Low- and Moderate-Income Households? (TRBAM-24-04731)

Justyna Kaniewska/University of Utah, Reid Ewing/University of Utah

Challenges of and Responses to Homelessness in State Transportation Environments (TRBAM-24-00275)

Jacob Wasserman/University of California, Los Angeles, Anastasia Loukaitou-Sideris/University of California, Los Angeles, Hao Ding/University of California, Los Angeles, Claire Nelischer/University of California, Los Angeles

2200

CM (1.75)



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 146C

Here Comes the Cavalry: U.S. Department of Defense Support for Disaster Response and Recovery

David Metcalf, Volkert Inc., presiding

Sponsored By Standing Committee on Transportation for National Defense, Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity

Military assets and capabilities are a national resource to respond to natural or manmade disasters. The United States Department of Defense, in conjunction with the Federal Emergency Management Agency (FEMA) partner to respond to wide array of emergencies. This panel will consist of representatives from FEMA, the US Corps of Engineers, USTRANSCOM and the Defense Logistics Agency to discuss recent responses to emergencies, lessons learned, and the outlook for future responses. Each panelist will give a short introduction and the bulk of the panel will be for discussion amongst the panelists and session attendees.

Travel Impacts of Spatiotemporal Disruptions in Conflict Scenarios: the Case of Ukraine Invasion (TRBAM-24-06419)

Moeid Qurashi/Technische Universität Dresden, Anna Sotnikova/Technische Universität Dresden, Steven Travis Waller/Technische Universität Dresden

Federal Emergency Management Agency Transportation: Nothing Happens Until Something Moves (P24-21196)

Jerry Thomas/Federal Emergency Management Agency

Supplying the Force During Emergency Operations (Part 1) (P24-21197)

Richard VanSchoor/Defense Logistics Office

Supplying the Force During Emergency Operations (Part 2) (P24-21198)

Drake Henderson/Defense Logistics Office

U.S. Army Corps of Engineers Roles in Response and Recovery Operations (P24-21199)

Paige Caldwell/U.S. Army Corps of Engineers (USACE)

2201

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 140

Electric Vehicle Policies and Impact on Consumer Behavior and Access

Mehrnaz Ghamami, Michigan State University, presiding

Sponsored By Standing Committee on Transportation Energy, Standing Committee on Air Quality and Greenhouse Gas Mitigation

Subsidies, Standards, or Both?: Simulating Zero Emissions Vehicle Policy Impacts on Sales, Emissions, Prices, and Profits to 2035 (TRBAM-24-04407)

Chandan Bhardwaj/Simon Fraser University, Jonn Axsen/Simon Fraser University

Exploring the Impact of the Federal Tax Credit on the Decision to Purchase or Lease a Plug-In Electric Vehicle in California (TRBAM-24-04329)

Kelly Hoogland/University of California, Davis, Scott Hardman/University of California, Davis, Debapriya

Chakraborty/University of California, Davis, David Bunch/University of California, Davis

Consumers' Perceptions Toward Government's Clean Fuel Initiatives and Intention to Buy Electric Vehicles (TRBAM-24-06137)

Ishant Sharma/University of Memphis, Prateek Bansal/University of Memphis, Ravi Gadepalli/University of Memphis,

Sabyasachee Mishra/University of Memphis

Charging Into Inequality: A National Study of Social, Economic, and Environment Correlates of Electric Vehicle Charging Stations (TRBAM-24-06265)

Alireza Ermagun/George Mason University, Joshua Tian/George Mason University, Fatemeh Janatabadi/George Mason University

2202 CM (1.75)

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 145B

Evolving Transit Performance Metrics

Steven Polzin, Arizona State University, Tempe, presiding

Sponsored By Standing Committee on Transit Management and Performance

Public transportation is at a critical point in terms of its monitoring and reporting as considerations that guide our expectations and goals continue to evolve and shift. While economic metrics dominated the first generation of performance measurement, there are additional priorities for public transportation. Agencies need metrics to address these emerging priorities, including measures of customer satisfaction, environmental sustainability, economic opportunity and access (especially for historically marginalized individuals), traveler safety, and resilience of infrastructure and services. Developing metrics for these priorities allows them to be equivalently incorporated into decision-making on-par with traditional economic metrics.

Rethinking of Transit Performance Metrics and How They Are Used (P24-20469)

Steven Polzin/Arizona State University, Tempe

Developing Metrics for Decision Making in a Post-Pandemic World (P24-20468)

Stephen Tu/Los Angeles County Transportation Authority (LACMTA)

Allocating Transit Funding Using Performance Metrics (P24-20473)

Daniel Sonenklar/DRPT

Traveler Experiences and Measurement of Equity Impacts (P24-21115)

Tierra Bills/University of California, Los Angeles

Equity-Focused Methods in Practice for Improved Transit Performance Management (P24-21116)

Alanna McKeeman/Foursquare Integrated Transportation Planning

Beyond Ridership: Measuring the Value of Transit (P24-20470)

Arthur Guzzetti/American Public Transportation Association (APTA)

Measuring Environmental Sustainability Within Transit (P24-21422)

Pamela Yonkin/HDR

2203 CM (1.75)

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 145A

Improving Transit Operations with Novel Analyses of Big Data

Eric Lind, University of Minnesota, presiding

Sponsored By Standing Committee on Transit Data

Transit agencies can be data rich and inference poor; the volume and variety of data produced by vehicles, sensors, and people in a transit system requires new approaches to aid understanding. Here we present four outstanding examples of how big datasets are understood through cutting edge analyses spanning causal inference, machine learning, and large language model AI. Importantly, these analyses point to outcomes and solutions for operational improvements that transit providers can replicate.

Causal Graph Discovery for Urban Bus Operation Delays: A Case in Stockholm (TRBAM-24-02309)

Qi Zhang/KTH Royal Institute of Technology, Zhenliang Ma/KTH Royal Institute of Technology, Yancheng Ling/KTH Royal Institute of Technology, Zhenlin Qin/KTH Royal Institute of Technology, Pengfei Zhang/KTH Royal Institute of Technology, Zhan Zhao/KTH Royal Institute of Technology

Analyzing Toronto Transit Commission Subway Performance During Service Disruptions Using Customer-Facing Wi-Fi Connection Data (TRBAM-24-02987)

Aidan Grenville/University of Toronto, Willem Klumpenhauer/University of Toronto, Amer Shalaby/University of Toronto

MetRoBERTa: Leveraging Traditional Customer Relationship Management Data to Develop a Transit Topic-Aware Language Model (TRBAM-24-04320)

Michael Leong/Massachusetts Institute of Technology, Awad Abdelhalim/Massachusetts Institute of Technology, Jude Ha/Massachusetts Institute of Technology, Diane Patterson/Massachusetts Institute of Technology, Gabriel Pincus/Massachusetts Institute of Technology, Anthony Harris/Massachusetts Institute of Technology, Michael Eichler/Massachusetts Institute of Technology, Jinhua Zhao/Massachusetts Institute of Technology

(continued)

Bus Travel Time Prediction: Comparative Study of Deep Learning Generalization Strategies with Open-Source Data (TRBAM-24-03226)

Zack Aemmer/University of Washington, Alfredo Clemente/University of Washington, Sondre Sorbo/University of Washington, Massimiliano Ruocco/University of Washington

2204

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 144AB

Economic Development and Intercity Rail: Analysis of Accessibility, Property Prices, and Energy Consumption

Marco Innao, WSP, presiding

Sponsored By Standing Committee on Passenger Rail Transportation

The Impact of Rail Infrastructure on Regional Identity, Participation, and Development: Evidence from a Thought Experiment (TRBAM-24-00283)

Regina Weber/German Centre for Rail Traffic Research, Stefanie Gäbler/German Centre for Rail Traffic Research, Philipp Rollin/German Centre for Rail Traffic Research

China's High-Speed Rail Development and Transportation Energy Consumption: Evidence from Panel Data Analysis (TRBAM-24-01421)

Guo Qiu/Chang'an University, Daniel(Jian) Sun/Chang'an University

The Impact of Accessibility to High-Speed Railway Stations on Property Prices in Shanghai (TRBAM-24-03733)

Xinyi Wang/Tongji University, Haixiao Pan/Tongji University, Xiyin Deng/Tongji University, Jingjie Cui/Tongji University

Big Data in Travel Demand Forecasting and Analysis: Amtrak's Use of a Nationwide Auto Table (P24-21124)

Gayathri Shivaraman/Steer Davies Gleave, Bruce Williams/National Railroad Passenger Corporation, Laura McWethy/National Railroad Passenger Corporation

2205

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 147A

Highway-Rail Grade Crossing Crash Predictions, Severities, Behavioral Factors, and Mobility Frequencies

Pamela Fischhaber, Colorado Public Utilities Commission, presiding

Sponsored By Standing Committee on Highway/Rail Grade Crossings

Improving Highway-Rail Grade Crossing Crash Prediction Models by Addressing Crossing Inventory Data Accuracy (TRBAM-24-04159)

Li Zhao/University of Nebraska, Lincoln, Muhammad Farooq/University of Nebraska, Lincoln, Aemal Khattak/University of Nebraska, Lincoln

Human Behavioral Factors for Crashes at Short Storage Highway Railroad Grade Crossings: A Case Study Using Perceptual Cycle Model (TRBAM-24-06412)

Bedan Khanal/Wayne State University, Steven Lavrenz/Wayne State University

Modeling Highway-Rail Grade Crossing Crash Severity (TRBAM-24-03874)

Mostafa Soltaninejad/Florida International University, Jimoku Salum/Florida International University, Abdallah Kinero/Florida International University, Priyanka Alluri/Florida International University, Pei-Sung Lin/Florida International University, Zhenyu Wang/Florida International University

Predictive Mobility at Highway Rail Grade Crossings (TRBAM-24-02663)

Kurt Brandt/LinqThingz

2206

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 143C

Integrated Perspectives in Freight Transportation Economics: Freight Operations and Optimization Strategies

Seckin Ozkul, University of South Florida, presiding

Sponsored By Standing Committee on Freight Transportation Economics and Regulation

This lectern session presents an investigation into vital factors shaping the optimization and efficiency of freight networks in the sphere of transportation economics. Each presentation delves into elements that influence the landscape of freight operations, contributing to a holistic perspective on the challenges and strategies prevalent in this domain. These presentations spotlight the significance of subsidies, economic linkages, and strategic carrier decisions as pivotal facets in the pursuit of optimizing freight networks. This multifaceted exploration provides nuanced insights into the intricate world of transportation economics, painting a rich tapestry that illustrates the interconnected nature of the industry's driving forces.

Differential Pricing with Discrete Choice Behavior for Time-Definite LTL Delivery Services (TRBAM-24-01969)

Cheng-Chang Lin/National Cheng Kung University

Optimizing Railway Freight Subsidy Between Ports and Hinterlands Considering Capacity Constraints and Shippers' Choice Behavior (TRBAM-24-02985)

Yunqiang Wu/Tongji University, Rong Zhang/Tongji University, Qiaoya Xie/Tongji University

An Iterative Method for Calibrating Freight Value-per-Ton Conversion Factors of Integrated Land Use Transport Models Based on Multi-Source Data (TRBAM-24-03869)

Zhi Ren/Wuhan University of Technology, Ming Zhong/Wuhan University of Technology, Ge Cui/Wuhan University of Technology, Linfeng Li/Wuhan University of Technology, Haowei Zhao/Wuhan University of Technology

2207 CM (1.75)

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 143AB

Planning for Environmental Justice and Equitable Outcomes at Airports and Beyond

Julia Nagy, HMMH, presiding

Sponsored By Standing Committee on Environmental Issues in Aviation, Young Members Coordinating Council

In the context of Environmental Justice and airport planning, airports must meet regulatory requirements but must also meet the expectations of their communities and respond to inequitable processes and outcomes that exist on a local scale. The session will focus on what is done currently and what could be done to meet the spirit of environmental justice within and beyond existing regulations and how can airports use planning processes to result in equitable systems and outcomes for their communities, including their internal stakeholders (workforce).

Incorporating Equity and Environmental Justice into AAM Planning Processes (P24-21524)

Adam Cohen/University of California, Berkeley

Environmental Justice Data Spotlight: Perspectives on Browser-Based Spatial Tools (P24-21525)

Amber Woodburn McNair/Ohio State University

Environmental Justice Foundations (P24-21526)

Tracee Strum-Gilliam/PRR, Inc.

2208

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 147B

Freight Systems and Marine Transportation Work in Progress: A Lectern-Poster Session

Majbah Uddin, Oak Ridge National Laboratory, presiding

Sponsored By Standing Committee on Ports and Channels, Young Members Coordinating Council, Freight Systems Group, Marine Group

Learn from young professionals in the freight systems and marine transportation research areas. Then help them innovate! In this hybrid session, twelve young professionals will present 5-minute lightning talks describing their research in progress. Afterward, their posters will be available in the same room for direct interaction with the authors.

(continued)

Necessary Infrastructure Accommodations for Automated Trucks and Truck Platoons (P24-20827)

Bill Prieto/Texas A&M Transportation Institute

Adoption Challenges for Medium- and Heavy-Duty Vehicles and Alternative Fuels: Lessons from Chicagoland (P24-20828)

Daniel Forbush/Cambridge Systematics

Cargo Consolidation in the Port-Hinterland Container Transport: An Economic Assessment for Inland Waterways (P24-20829)

Felipe Bedoya-Maya/University of Antwerp

Optimizing Charging Points for Drone-Based Parcel Delivery Under Demand Uncertainty (P24-20853)

Fateme Hafizi/Illinois Institute of Technology

Classification of Shoaling Forecasting to Inform Dredging Needs in the Southwest Pass (P24-20830)

Hans Broders/Applied Research Associates, Inc.

Freight Parking Space for Sustainable Urban Deliveries in Luxembourg (P24-20831)

Laura Palacios/University of Luxembourg

Supplier Type Choice Model Considering Distribution Channels (P24-20851)

Usman Ahmed/University of Toronto

Sequential Truck Platoon Formation in Mixed Traffic Using Multiple Spring Mass Damper Systems (P24-20832)

Mukundhan Narasimhan/University of Florida

Assessing Emissions from Commercial Maritime Vessels in Texas Waters: Implications for Sustainable Maritime Management (P24-20852)

Min-Ci Sun/Texas A&M University

Charging Management Strategies for Medium- and Heavy-Duty Electric Vehicles Under Various Utility Tariff Structures (P24-20833)

Ruolin Zhang/University of Illinois, Urbana-Champaign

Warehousing and Truck Parking Demand: A Story of Causation or Correlation? (P24-20835)

Tinotenda Jonga/Fehr & Peers

Investigating the Spatiotemporal Transferability of Truck Volume Estimation Models (P24-20834)

Yangsong Gu/University of Tennessee, Knoxville

2209

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 144C

Maritime Environmental Sustainability: How Do We Fund It, Operate It, and Promote It?

Elizabeth Ogard, Prime Focus, LLC, presiding

Sponsored By Standing Committee on Marine Environment

This session will discuss the resources and programs being developed to support the decarbonization of our nation's ports of all sizes and functions. These panelists will provide unique perspectives which will examine the challenges and opportunities to achieving net-zero.

Resources and Support for Port Decarbonization (P24-20732)

Daniel Yuska/Maritime Administration

Great Lakes Green Shipping Corridor Network (P24-20734)

Adam Tindall-Schlicht/Great Lakes St. Lawrence Seaway Development Corporation (GLS)

Net Zero Waterborne Transportation (P24-20735)

Megan O'Leary/Blue Sky Maritime Coalition

Clean Ports Program (P24-20733)

Harold Rickenbacker/U.S. Environmental Protection Agency (EPA)

2210



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Ballroom A

U.S. Department of Transportation: GPS at 50, Results for Transportation and New Threats

Robert Hampshire, U.S. Department of Transportation, presiding

Sponsored By Executive Committee

The Global Positioning System (GPS) is a momentous achievement - a constellation of positioning, navigation, and timing satellites established as a U.S. Department of Defense program in December 1973. It is a testament to American ingenuity and innovation that this dual-use technology for military and civilian applications has transformed the world and modern society. The U.S. Department of Transportation serves as the civil lead for GPS and, in joint partnership with the Department of Defense, ensures accurate and reliable GPS service meets current and emerging needs across our nation and around the globe. This panel session uses the 50th anniversary of GPS as an opportunity to increase awareness and visibility of the importance of GPS to safety-critical transportation applications—from aircraft and maritime navigation to positive train control to emerging applications for UAS, advanced air mobility, and automated vehicles. Disruption, denial, and manipulation of GPS such as signal jamming and spoofing are threats that have become a reality in the Ukraine and Israel conflicts, as well as incidents in the U.S. primarily affecting aviation. So, while GPS is the foundation for our National PNT Architecture, we need to ensure that foundation is fortified. This panel will explore PNT resiliency to enhance safety, security, and ensure the flow of goods supporting the economy through protecting GPS spectrum from harmful interference, to toughening GPS receiver equipment, to use of complementary sources of PNT and facilitating adoption of these technologies into end user applications to increase resiliency for safety-critical transportation applications.

Panel Discussion (P24-21450)

Ken Alexander/Federal Aviation Administration (FAA), Gregory Winfree/Texas A&M Transportation Institute, Dana Goward/Resilient Navigation and Timing Foundation, Zak Kassas/The Ohio State University

2239

Monday, 03:45 p.m. - 05:30 p.m., Convention Center, 207B

Federal Transit Administration Research Priorities

Mary Leary, Federal Transit Administration (FTA), presiding

Sponsored By Public Transportation Group

Introduction and Welcome from the TRB Public Transportation Group (P24-21562)

TR Hickey/Itinerant Transit Worker

Federal Transit Administration Research Priorities (P24-21563)

Mary Leary/Federal Transit Administration (FTA)

Major Issues and Opportunities Facing Transit Agencies (P24-21564)

Molly King/Federal Transit Administration (FTA)

Federal Transit Administration Online Dialogue (P24-21565)

David Schneider/Federal Transit Administration (FTA)

FTA's Mobility Innovation Work (P24-21566)

Gwo-Wei Torng/Federal Transit Administration (FTA)

Highlights of FTA's Safety and Electrification and Low- or No-Emissions Work (P24-21567)

Mohammed Yousuf/Federal Transit Administration (FTA)

2054



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Recent Freight Rail Research

Kevin Keller, HDR, presiding

Sponsored By Standing Committee on Freight Rail Transportation

Freight Train Derailment Severity Prediction: A Physics-Informed, One-Dimensional Model (TRBAM-24-01393) - B500

Di Kang/Rutgers University, New Brunswick, Steven Kirkpatrick/Rutgers University, New Brunswick, Xiang Liu/Rutgers University, New Brunswick, Zheyong Bian/Rutgers University, New Brunswick

(continued)

Relationship Between Service Quality Factors and Customer Satisfaction in Rail Freight Transportation: A Structural Equation Modeling Approach (TRBAM-24-01693) - B501

Md. Moshir Rahman Khan/Bangladesh University of Engineering and Technology, Md. Sabbir Hossain Muni/Bangladesh University of Engineering and Technology, Niaz Zafri/Bangladesh University of Engineering and Technology, Mohammed Mojahid Hossain Chowdhury/Bangladesh University of Engineering and Technology

Design of Flexible Container Sharing Scheme for China-Europe Freight Trains Based on Complete Demand Information (TRBAM-24-02076) - B502

Ning Chen/Southwest Jiaotong University, Jintao Ma/Southwest Jiaotong University, Ran An/Southwest Jiaotong University, Shi Chen/Southwest Jiaotong University, Yun Gao/Southwest Jiaotong University, Yuxi Huang/Southwest Jiaotong University

Two-Stage, Multi-Objective Optimization for Emergency Logistics by Railway Express Freight Based on Marshaling Optimization (TRBAM-24-02142) - B503

Jiashan Yuan/Southeast University, Yong Zhang/Southeast University, Cheng Cheng/Southeast University

Optimization Scheme on Railway Freight Transport Organization in China: A Railway Spatio-Temporal Corridor Theory (TRBAM-24-03044) - B514

Xicheng Wu/Beijing Jiaotong University, Xiushan Jiang/Beijing Jiaotong University, Tao Zhu/Beijing Jiaotong University, Jun Dong/Beijing Jiaotong University

Influence of Interchange, Train Type, and Commodity Shipped on the Adoption of Higher Gross Rail Load Railcars by U.S. Freight Railroads (TRBAM-24-04300) - B510

Diwen Shi/University of Illinois, Urbana-Champaign, C Dick/University of Illinois, Urbana-Champaign

Improving Short-Haul Intermodal Transit Times on Low-Density Rail Corridors with Platoons of Self-Propelled Autonomous Railcars (TRBAM-24-04830) - B511

Geordie Roscoe/University of Texas, Austin, Matthew Parkes/University of Texas, Austin, C Dick/University of Texas, Austin

Freight Railroad Emissions as the Basis for the External Costs of Transportation in Brazil (TRBAM-24-05682) - B504

Henrique Martim/Universidade Estadual de Campinas, Pedro Perez-Martinez/Universidade Estadual de Campinas

Research on Railroad Container Tariff Based on Machine Learning (TRBAM-24-00292) - B512

Ronghui Bi/Dalian Maritime University, Zhaofeng Hu/Dalian Maritime University, Zongyao Wang/Dalian Maritime University

Short-Term Forecasting of Railway Freight Demand Based on Graph Attention Network (TRBAM-24-01210) - B513

Wenbo Lian/Beijing Jiaotong University, Xingtang Wu/Beijing Jiaotong University, Min Zhou/Beijing Jiaotong University, Jianjun Ma/Beijing Jiaotong University, Hairong Dong/Beijing Jiaotong University

2211



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Measurement of Road User Visual Attention, Stress, Fatigue, and Behavior in Myriad Contexts

Chen Chai, Tongji University, presiding

Sponsored By Standing Committee on Road User Measurement and Evaluation

A Multi-User, Human-in-the-Loop, Autonomous Driving Simulation Framework Enabled by Virtual Reality (TRBAM-24-05534) - B759

Defu Cui/Old Dominion University, Yuzhong Shen/Old Dominion University

Effects of Ambient Temperature on Drivers' Speed Control Behavior at Different Risk Levels: A Driving Simulation Study (TRBAM-24-03266) - B760

Yanjie He/Wuhan University of Technology, Hui Zhang/Wuhan University of Technology, Naikan Ding/Wuhan University of Technology, Shiyu Zhang/Wuhan University of Technology, Ao Guo/Wuhan University of Technology, Xiong Mei/Wuhan University of Technology, Wang Xiang/Wuhan University of Technology

Beyond the Dashboard: Investigating Driver Preferences Under Distraction for Communication with Advanced Driver Assistance Systems (TRBAM-24-04445) - B762

Aamir Hasan/University of Illinois, Urbana-Champaign, David McPherson/University of Illinois, Urbana-Champaign, Melissa Miles/University of Illinois, Urbana-Champaign, Katherine Driggs-Campbell/University of Illinois, Urbana-Champaign

Evaluating the Impact of Behavioral Inoculation to Improve Unplanned Takeover Performance in Conditional Autonomous Driving (TRBAM-24-04537) - B763

Chen Chai/Tongji University, Shixuan Weng/Tongji University, Rui Feng/Tongji University, Jixiang Wang/Tongji University

(continued)

Utilizing Virtual Reality for Enhanced Understanding of Vulnerable Road User Behavior: A Case Study and Roadmap for Distributed Multi-Agent Simulation (TRBAM-24-04844) - B764
 Sepehr Sabeti/Leidos, Inc., Arash Tavakoli/Leidos, Inc., Arsalan Heydarian/Leidos, Inc., Omidreza Shoghli/Leidos, Inc.

Drivers' Hazard Avoidance Behaviors When Using Advanced Driver Assistance Systems: An Observational Simulator Study (TRBAM-24-05339) - B765
 Ganesh Pai/University of Massachusetts, Amherst, Anuj Pradhan/University of Massachusetts, Amherst

Accelerated Verification of Autonomous Driving Systems Based on Subset Simulation (TRBAM-24-05374) - B767
 Aohui Fu/Tongji University, He Zhang/Tongji University, Lanyue Tang/Tongji University, Ye Tian/Tongji University

Unsupervised Deep Learning Modeling for Distracted Driving Detection While Texting: A Driving Simulator Study (TRBAM-24-05464) - B768
 Mohammad Saiful Amin/No Organization, Mohaiminul Haque/No Organization, Wissam Sleiman/No Organization, Michel Khoueiry/No Organization, Samer Hamdar/No Organization

Implementation of E-Scooter Driving Simulator Environment Based on Driver's Acceptability (TRBAM-24-02143) - B769
 Kyuhyuk Kim/Chungbuk National University, Soonil Kwon/Chungbuk National University, Junho Hong/Chungbuk National University, Tai-jin Song/Chungbuk National University

Using a Brain-Like Cognitive Computational Model to Analyze the Difference Between Desired Speed and Actual Speed on Rural Highways (TRBAM-24-05887) - B770
 Ye Tao/Tongji University, Xiangyu Feng/Tongji University, Bo Yu/Tongji University, Yuren Chen/Tongji University, Zeyang Cheng/Tongji University

Improving Methodologies in Estimating Cognitive Distraction Its Safety Impacts Under Automated Driving: A Multi-Dimensional Approach (TRBAM-24-06042) - B772
 Song Wang/University of Cincinnati, Zhixia Li/University of Cincinnati

Exploring Factors Influencing Pedestrian Crossing Behavior in Interactions with Autonomous Vehicles on Unmarked Mid-Block Multi-Lanes: A Virtual Reality-Based Study (TRBAM-24-06132) - B773
 Fengjiao Zou/Arcadis US Inc, Jennifer Ogle/Arcadis US Inc, Weimin Jin/Arcadis US Inc, Patrick Gerard/Arcadis US Inc, Daniel Petty/Arcadis US Inc, Andrew Robb/Arcadis US Inc

Driving Behavior Characterization for Driving Style Evaluation (TRBAM-24-03150) - B774
 Jooyoung Lee/Hannam University, Kitae Jang/Hannam University

A Driving Style Clustering Method Based on Time Series Data Using Feature Map and Deep Learning (TRBAM-24-03224) - B775
 Yiran Shao/Tongji University, Junhua Wang/Tongji University, Ting Fu/Tongji University, Bo Yao/Tongji University, Chengmin Li/Tongji University, Hao Song/Tongji University

Impact of Eye Movement Patterns on Response Time of Riders in Sudden Hazardous Events (TRBAM-24-03514) - B777
 Monik Gupta/Indian Institute of Technology, Bombay, Nagendra Velaga/Indian Institute of Technology, Bombay

Smartphone-Based, Human-Machine Interface for Bicycles: A Study on Behavioral Change and Learning Effects (TRBAM-24-03709) - B778
 Johannes Lindner/Technical University of Munich, Georgios Grigoropoulos/Technical University of Munich, Andreas Keler/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

Investigating Explainable Multivariate Time-Series Classification for Priority-Taking Behavior at Signalized and Stop Sign-Controlled Intersections (TRBAM-24-04800) - B779
 Erika Ziraldo/University of Guelph, Megan Govers/University of Guelph, Michele Oliver/University of Guelph

Identifying the Impact of Task Complexity and Coping Capacity on Driving Risk: Comparison Among Different Countries and Transport Modes (TRBAM-24-01951) - B780
 Stella Roussou/National Technical University of Athens (NTUA), Thodoris Garefalakis/National Technical University of Athens (NTUA), Eva Michelaraki/National Technical University of Athens (NTUA), Christos Katrakazas/National Technical University of Athens (NTUA), Muhammad Adnan/National Technical University of Athens (NTUA), Muhammad Wisal Khattak/National Technical University of Athens (NTUA), Tom Brijs/National Technical University of Athens (NTUA), George Yannis/National Technical University of Athens (NTUA)

Understanding Visual Scanning Behavior in Driving: A Review and a New Perspective Using Statistical Pattern-Based Approach (TRBAM-24-02173) - B781
 Xingjian Ma/University of Florida, Minhee Kim/University of Florida, Haolan Zheng/University of Florida, Wayne Giang/University of Florida

The Effects of Truck Platoon Signing and Characteristics on Light Vehicle Driver Behavior (TRBAM-24-02316) - B782
 Szu-Fu Chao/Leidos, Inc., Ananna Ahmed/Leidos, Inc., Mafruhatul Jannat/Leidos, Inc., Michelle Arnold/Leidos, Inc.

(continued)

Driving Safety Analysis of Underground Interchange Using Driving Simulator and Machine Learning (TRBAM-24-02317) - B783

Zhen Liu/Southeast University, Qifeng Yang/Southeast University, Xingyu Gu/Southeast University

Assessing Short- and Long-Term Impact of Connected Vehicles Warnings on Driving Volatility (TRBAM-24-02872) - B784

Sisinnio Concas/University of South Florida, Achilleas Kourtellis/University of South Florida, Mohsen Kamrani/University of South Florida, Vishal C. Kummetha/University of South Florida

Modeling and Analyzing the Gaming Behavior in Typical Parking Conflicts (TRBAM-24-02972) - B785

Yinjie Luo/New York University, Abu Dhabi, Yuwei Yang/New York University, Abu Dhabi, Jun Chen/New York University, Abu Dhabi, Monica Menendez/New York University, Abu Dhabi

A Real-Time Stress Assessment of Urban Drivers with Scene-Augmented Attention Framework Using Driving Video Data (TRBAM-24-00253) - B786

Siwei Wan/Southeast University, Jie He/Southeast University, Xiaoyu Wu/Southeast University, Yuntao Ye/Southeast University, Pengcheng Qin/Southeast University, Zhiming Fang/Southeast University, Yuchen Wang/Southeast University, Haofu Shi/Southeast University

Study on Driving Fatigue in Plateau Based on Steering Wheel Indicators (TRBAM-24-01616) - B787

Fei Chen/Southeast University, Wanxiao Zhu/Southeast University, Cunxiao Li/Southeast University, Chenzhu Wang/Southeast University

A Car-Following Model with Consideration of Speed Guidance in Intelligent Connected Environment (TRBAM-24-03279) - B788

daniyaer silike/Wuhan University of Technology, Mengfei Liu/Wuhan University of Technology, Xinpeng Yao/Wuhan University of Technology, Nengchao Lyu/Wuhan University of Technology

Validation of a Multimodal Physical and Virtual Traffic Reality Simulation System (TRBAM-24-04715) - B789

Ismet Goksd Erdagi/University of Pittsburgh, Aleksandar Stevanovic/University of Pittsburgh, Milan Zlatkovic/University of Pittsburgh

2212



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Safety Performance and Analysis of Freeways

Xiao Qin, University of Wisconsin, Milwaukee, presiding

Sponsored By Standing Committee on Safety Performance and Analysis

Real-Time Conflict Prediction on Freeways Under Different Vehicle Interaction Scenarios Using Short-Term Vehicle Kinematic Characteristics with Temporal Variability (TRBAM-24-00302) - B720

Chenwei Wang/Southeast University, Jie He/Southeast University, Xintong Yan/Southeast University, Zhang Changjian/Southeast University, Yuntao Ye/Southeast University, Pengcheng Qin/Southeast University

Investigating the Features of Risky Driving Behaviors on Expressway Diverge Areas Based on Improved Collision-Based Index and Modeling Analysis (TRBAM-24-00953) - B721

Xiaohan Xia/Southeast University, Jian Lu/Southeast University, Jun Zhang/Southeast University, Junde Chen/Southeast University, Chao Gu/Southeast University

Traffic Conflict Risk Assessment in Expressway Diverging Area Based on High-Precision Radar Camera Fusion Data (TRBAM-24-00954) - B722

Xiao-chi MA/Southeast University, Jian Lu/Southeast University, Jun Zhang/Southeast University, Junde Chen/Southeast University, Chao Gu/Southeast University

A Study on Superposition Effect of Dangerous Driving Risk and Crash Risk on Expressway Confluence Area (TRBAM-24-01444) - B723

Weihua Zhang/Hefei University of Technology, Haonan Guo/Hefei University of Technology, Zeyang Cheng/Hefei University of Technology, Huiwen Liu/Hefei University of Technology, Zhipeng Huang/Hefei University of Technology, Cheng Wang/Hefei University of Technology, Liyang Wei/Hefei University of Technology

Quantitative Safety Measures for Managed Lanes on Freeway Facilities with Reversible Flow (TRBAM-24-01476) - B724

Jimoku Salum/SRF Consulting, Cecilia Kadeha/SRF Consulting, Priyanka Alluri/SRF Consulting, Srinivas Geedipally/SRF Consulting

Investigation of Lane Change Risk at Different Areas of Weaving Segment (TRBAM-24-01564) - B725

Jinbao Zhang/Central South University, Jaeyoung Lee/Central South University

Planning-Level Safety Prediction Method for Interchange Configurations (TRBAM-24-02843) - B726

Scott Himes/VHB, Vikash Gayah/VHB, Samantha Arnold/VHB, Jeff Gooch/VHB, Wei Zhang/VHB

(continued)

Developing Safety Performance Functions for Diamond Interchanges on Rural Freeways in Saudi Arabia (TRBAM-24-03284) - B727

Saif Alarifi/King Saud University, Khalid Alkahtani/King Saud University

Real-Time Expressway Crash Prediction Using Floating Car Data (TRBAM-24-03288) - B730

Xuesong Wang/Tongji University, Yifan Wang/Tongji University, Mohammed Quddus/Tongji University, Tonggen Wang/Tongji University

Developing Crash Modification Factors for Shoulder Rumble Strips and Lighting on Freeways in Saudi Arabia (TRBAM-24-03313) - B728

Saif Alarifi/King Saud University, Khalid Alkahtani/King Saud University

A Study of Freeway Crash Impacts Considering Unobserved Heterogeneity: Introduction of Driving Behavior Data and Traffic Flow Data (TRBAM-24-03347) - B733

Chang Liu/Sichuan Police College, Xiaohua Zhao/Sichuan Police College, Ying Yao/Sichuan Police College, Jushang Ou/Sichuan Police College, Hang Qi/Sichuan Police College

Examination of Electric Vehicle Traffic Safety: A Case Study in Norway (TRBAM-24-03755) - B729

Hou Xuerui/Hunan University, Xuerui Hou/Hunan University, Meiling Su/Hunan University, Chenhui Liu/Hunan University, Ying Li/Hunan University, Qinglu Ma/Hunan University, Chaoru Lu/Hunan University

Exploring Factors Contributing to Frontage Roadway Crashes Using a Probabilistic Graphical Model (TRBAM-24-03729) - B736

Subasish Das/Texas State University, Ahmed Hossain/Texas State University, M. Rahman/Texas State University, Xiaoduan Sun/Texas State University

A Real-Time Freeway Crash Detection Framework Using Connected Vehicle Waypoint Data (TRBAM-24-04419) - B738

Raghupathi Kandiboina/Iowa State University, Varsha Mouli/Iowa State University, Guillermo Basulto-Elias/Iowa State University, Skylar Knickerbocker/Iowa State University, Neal Hawkins/Iowa State University, Anuj Sharma/Iowa State University

Safety Effectiveness Analysis of Improvement Measures on Freeways Using Causal Forest Method (TRBAM-24-05105) - B731

Jiaqi Li/Tongji University, Xuesong Wang/Tongji University, Xiaohan Yang/Tongji University, Yifan Wang/Tongji University, Mengjiao Wu/Tongji University, Ziyuan Huang/Tongji University, Yu Jiang/Tongji University, Lixia Lei/Tongji University

Graph Convolutional Long Short-Term Memory Algorithm for Real-Time Crash Prediction on Mountainous Freeways (TRBAM-24-05116) - B732

Yesihati Azati/Tongji University, Xuesong Wang/Tongji University, Mohammed Quddus/Tongji University, Xuefang Zhang/Tongji University

Can We Predict Freeway Lane-Changing Crashes Before the Insertion? (TRBAM-24-05137) - B739

Ke quan Chen/Southeast University, Hao Yu/Southeast University, Pan Liu/Southeast University, Zhibin Li/Southeast University, YUXUAN WANG/Southeast University

Safety Performance Functions for Frontage Roads (TRBAM-24-05337) - B737

Srinivas Geedipally/Texas A&M Transportation Institute, Subasish Das/Texas A&M Transportation Institute, Lingtao Wu/Texas A&M Transportation Institute, Michael Pratt/Texas A&M Transportation Institute

Fusing Crash Data and Risking Driving Behaviors for Freeway Safety Assessment: Developing Dynamic Structural Equation Model to Examine the Relationships Among Traffic Operation Characteristics, Risky Driving Behaviors, and Traffic Crashes (TRBAM-24-05825) - B734

Jia Li/Beijing University of Technology, Guan jie Li/Beijing University of Technology

Developing Temporal Safety Performance Functions of Ramp Metering Operated (TRBAM-24-05917) - B740

Abdulrahman Faden/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Tarek Hasan/University of Central Florida, Heesub Rim/University of Central Florida

Improving Crash Risk Prediction Accuracy for Freeway Segment by Considering the Heterogeneous Effects of Road Segment Type, Traffic Operation Status, and Crash Units (TRBAM-24-05931) - B735

Jia Li/Beijing University of Technology, Chengqian Li/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology

2213



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Safety Performance of Connected Automated Vehicles

Xiao Qin, University of Wisconsin, Milwaukee, presiding

Sponsored By Standing Committee on Safety Performance and Analysis

(continued)

Crash-Based Assessment of Autonomous Driving: How Do Autonomous Vehicles Behave in Real-World Crash Scenarios? (TRBAM-24-00318) - B742

Rui Zhou/Central South University, Guoqing Zhang/Central South University, Helai Huang/Central South University, Jaeyoung Lee/Central South University, Yuxuan Dong/Central South University, Jiguang Chen/Central South University

Evaluation of Autonomous Driving Safety on Curved Sections (TRBAM-24-00423) - B743

Iljoon Chang/Gachon University, Jaeduk Lee/Gachon University, Seyoung Ahn/Gachon University

Developing an Integrated Safety Surrogate Measure for Intelligent Vehicles (TRBAM-24-01912) - B744

Léah Camarcat/Imperial College London, South Kensington, Nicolette Formosa/Imperial College London, South Kensington, Mohammed Quddus/Imperial College London, South Kensington

Patterns of Critical Factors Linked to Automated Vehicle–Involved Crashes: A Comparative Analysis of Intersection and Non-Intersection Crash Scenarios (TRBAM-24-01915) - B745

Reuben Tamakloe/Korea Advanced Institute of Science and Technology (KAIST), Subasish Das/Korea Advanced Institute of Science and Technology (KAIST)

Traffic Safety Performance Evaluation in a Connected Vehicle Environment with Queue Warning and Speed Harmonization Applications (TRBAM-24-02402) - B747

Adekunle Adebisi/University of Cincinnati, John Ash/University of Cincinnati

Analyzing Relationships Between Latent Topics in Autonomous Vehicle Crash Narratives and Crash Severity Using Natural Language Processing Techniques and XGBoost (TRBAM-24-04377) - B748

Pei Li/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison, Lishengsa Yue/University of Wisconsin, Madison, Yuan Xu/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison

Automated Road Infrastructure Safety Assessments with Emerging Data Sources: A Survey (TRBAM-24-05378) - B749

Shuyi Yin/University of Washington, Ruimin Ke/University of Washington, Chenxi Liu/University of Washington, Zhiyong Cui/University of Washington, Rohan Shrestha/University of Washington, Yinhai Wang/University of Washington

Investigation the Geospatial Factors Associated with Connected and Automated Vehicle Crashes Using the Geographically Weighted Regression (TRBAM-24-05434) - B750

Pei Liu/Southeast University, Yanyong Guo/Southeast University, Pan Liu/Southeast University, Jiandong Cao/Southeast University

Network Screening of National Highways for Fatal Crashes in India (TRBAM-24-05700) - B752

Hasan Naqvi/National Highways Authority of India, Geetam Tiwari/National Highways Authority of India

Future of Autonomous Vehicles: Time-Based Insights from Collision Data (TRBAM-24-06086) - B753

Abdul Razak Alozi/McMaster University, Mohamed Hussein/McMaster University

Intersection Safety Risk Scoring Using Connected Vehicle Data and Machine Learning: A Case Study in the Atlanta Region (TRBAM-24-06151) - B754

Alican Karaer/Iteris, Masoud Hamed/Iteris

Automated Traffic Safety Assessment Tool Utilizing Monocular 3D Autonomous Vehicle Algorithm at Signalized Intersections (TRBAM-24-04593) - B755

Ahmed Mohamed/University of Cincinnati, Lizhe Li/University of Cincinnati, Mohamed Ahmed/University of Cincinnati

Investigation of Crash Severities Involving Advanced Driving Assistance Systems Level 2 and Automated Driving System Equipped Vehicles (TRBAM-24-04925) - B757

Arsalan Esmaili/University of Washington, Seattle, Mohammad Mehdi Oshanreh/University of Washington, Seattle, Amelia Regan/University of Washington, Seattle

Injury Severity Model of Autonomous Vehicle Involved Incident: A Hybrid Model of XGboost and Multinomial Logit Based on a Novel Multi-Source Data Set (TRBAM-24-05175) - B758

Guo Rui/Beijing University of Technology, Yanyan Chen/Beijing University of Technology, Yunchao Zhang/Beijing University of Technology



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Information Systems and Technology

Guohui Zhang, Oak Ridge National Laboratory, presiding

Hao Yang, Duke University, presiding

Ziyuan Pu, Southeast University, presiding

Sponsored By Standing Committee on Information Systems and Technology

The AED30 Information Systems and Technology Committee is concerned with research needs and strategic leadership regarding the use of advanced computing and technology to support optimal transportation solutions and outcomes. This poster session will feature selected papers reviewed by the AED30 Committee for the 2024 Annual Meeting. Topics include: advancing sensing technologies, computer vision and perception, data and sensor fusion, emerging data sources, machine learning / predictive models, and applications of big data.

A New Method for Vehicle Logo Recognition Based on Swin Transformer (TRBAM-24-00497) - A153

Yang Li/University of Shanghai for Science and Technology, Doudou Zhang/University of Shanghai for Science and Technology, Jianli Xiao/University of Shanghai for Science and Technology

Investigation of Locked Wheel Skid Tester Practicability on Horizontal Curves: A Camera-Based Field Implementation (TRBAM-24-02706) - A203

Cheng Peng/Purdue University, Chengcheng Tao/Purdue University, Yi Jiang/Purdue University, Shuo Li/Purdue University

A Large-Scale Smart Intersection Camera Combination Placement Approach Oriented to Perceptual Needs (TRBAM-24-03893) - A163

Shaojie Wang/Southeast University School of Transportation, Jiankun Peng/Southeast University School of Transportation, Shuangzhi Yu/Southeast University School of Transportation, Fan Ding/Southeast University School of Transportation, Chunye Ma/Southeast University School of Transportation

Active Congestion Detection in Vehicle-to-Vehicle Scenarios with an Integrated Multi-Layer Information Fusion Approach (TRBAM-24-05681) - A143

Qihua Zhan/Purdue University, Yuxin Ding/Purdue University, Tian Lei/Purdue University, Xiaohong Yin/Purdue University, Lichan Liang/Purdue University, Qiuyue Huang/Purdue University

Impact Analysis of Inference Time Attack of Perception Sensors on Autonomous Vehicles (TRBAM-24-06036) - A213

hanlin chen/Oak Ridge National Laboratory, Simin Chen/Oak Ridge National Laboratory, Wenyu Li/Oak Ridge National Laboratory, Wei Yang/Oak Ridge National Laboratory, Yiheng Feng/Oak Ridge National Laboratory

Advancing Automatic Asset Management: An Innovative System for Traffic Sign Detection and Recognition with Monocular Camera (TRBAM-24-06141) - A210

Nutvara Jantarathaneewat/University of Washington, Chenxi Liu/University of Washington, Hao Yang/University of Washington, Yangjiao Chen/University of Washington, Meng-ju Tsai/University of Washington, Yinhai Wang/University of Washington

Motivating Safer Driving with Telematics (TRBAM-24-02436) - A182

Lisa Pinals/Cambridge Mobile Telematics, Alex Kerin/Cambridge Mobile Telematics, Craig Van Alsten/Cambridge Mobile Telematics, Richard Sharp/Cambridge Mobile Telematics, Samuel Madden/Cambridge Mobile Telematics

Can Truck Overloading Be Effectively Detected in a Non-Contacted Way?: An Approach Based on Multi-Sensor Fusion (TRBAM-24-02752) - A201

Tangyi Guo/Tongji University, Xiankang Tang/Tongji University, Yang Zhou/Tongji University, Stefan Nastic/Tongji University

Vehicle Speed Prediction Method Using Spatio-Temporal Graph Convolutional Networks Integrated with Potential Field Theory (TRBAM-24-02933) - A130

Bocheng An/Southeast University, Linheng Li/Southeast University, Xu Qu/Southeast University, Bin Ran/Southeast University

Sensor Placement Considering the Observability of Traffic Dynamics: On the Algebraic and Graphical Perspectives (TRBAM-24-03199) - A151

Xinyue Hu/University of California, Davis, Yueyue Fan/University of California, Davis

LiDAR Camera Fusion: Dual-Scale Correction for Vehicle Multi-Object Detection and Trajectory Extraction (TRBAM-24-03214) - A150

Shuke Xie/McGill University, Ting Fu/McGill University, Weichao Hu/McGill University, Junhua Wang/McGill University, Zixuan Cui/McGill University

(continued)

Trustworthy Cost-Effective Vehicle Recognition System Empowered by Micro-Pulse LiDAR and Edge Artificial Intelligence (TRBAM-24-04038) - A211

Hao Yang/University of Washington, Chenxi Liu/University of Washington, Bingzhang Wang/University of Washington, Meng-ju Tsai/University of Washington, Ziyuan Pu/University of Washington, Yin Hai Wang/University of Washington

Toward Sparser Radar Placements: Exploiting Vehicle Trackability from Partial Trajectories with a Generator-as-a-Matcher Approach (TRBAM-24-01750) - A193

Xinghao Su/Tongji University, Guoyang Qin/Tongji University, Jian Sun/Tongji University

Automatic Modeling of Existing Road Based on Unmanned Aerial Vehicle-LiDAR System and Building Information Modeling (TRBAM-24-01834) - A192

Bu Tianxiang/Southeast University, Junqing Zhu/Southeast University, Tao Ma/Southeast University, Shun Jiang/Southeast University

LiDAR-Image Fusion Based on YOLOV5 and PointNet++ for 3D Objection Perception (TRBAM-24-02252) - A172

Zhengyi Ma/Tongji University, Jiayin Zhu/Tongji University, Jiayi Lu/Tongji University, Zhenliang Li/Tongji University, Xihan Cao/Tongji University, Jingyi Yao/Tongji University, Runjiu Hu/Tongji University, Genwang Liu/Tongji University

Camera-Based Headlight Extraction and Clustering for Vehicle Detection and Tracking Under Extremely Low Lighting Conditions (TRBAM-24-04043) - A132

Igor Lashkov/University of Hawaii, Runze Yuan/University of Hawaii, Guohui Zhang/University of Hawaii

A Track Before Detect for the Radar Networks in Traffic Scenarios (TRBAM-24-04129) - A133

Wenxuan Wang/Xidian University, Bo Yan/Xidian University, Su Yan/Xidian University, Qi Niu/Xidian University, Hua Zhang/Xidian University

Developing a Quantitative Relationship Between the Number of LiDAR Points and Vehicle Position (TRBAM-24-01705) - A140

Shunlai Cui/Southwest Jiaotong University, Peng Cao/Southwest Jiaotong University, Yiming Wang/Southwest Jiaotong University, Xiaobo Liu/Southwest Jiaotong University

Distil the Informative Essence of Loop Detector Data Set: Is Network-Level Traffic Forecasting Hungry for More Data? (TRBAM-24-04324) - A212

Guopeng Li/Delft University of Technology: Technische Universiteit Delft, Victor Knoop/Delft University of Technology: Technische Universiteit Delft, Hans van Lint/Delft University of Technology: Technische Universiteit Delft

Assessing the Usability of Augmented Reality in Roadway Work Zones: A Comparative Analysis Between In Field and Virtual Reality Testbeds (TRBAM-24-04478) - A220

Omidreza Shoghli/University of North Carolina, Charlotte, Sepehr Sabeti/University of North Carolina, Charlotte

Development of Intersection Performance Assessment Platform Utilizing Digital Twin Technology and Microscopic Simulation Software (TRBAM-24-04792) - A173

Abolfazl Afshari/New Jersey Institute of Technology, Joyoung Lee/New Jersey Institute of Technology, Dejan Besenski/New Jersey Institute of Technology

The Effects of Sparsity in Location-Based Service Data on Derived Human Mobility Metrics (TRBAM-24-04983) - A221

Xinhua Wu/Northeastern University, Yanchao Wang/Northeastern University, Ekin Ugurel/Northeastern University, Cynthia Chen/Northeastern University, Shuai Huang/Northeastern University, Qi Wang/Northeastern University

Improving Road Safety with Ensemble Learning: Detecting Driver Anomalies Using Vehicle In-Built Cameras (TRBAM-24-05043) - A202

Tumlumbe Juliana Chengula/South Carolina State University, Judith Mwakalonge/South Carolina State University, Saidi Siuhi/South Carolina State University, Gurcan Comert/South Carolina State University

Identifying Intercity, Fine-Grained Travel Modes Within Trajectory Sequences from Cellular Signaling Data (TRBAM-24-05392) - A162

Yongyi Zhang/Southeast University, Junyi Zhang/Southeast University, Jiazhan Hu/Southeast University, Fan Ding/Southeast University

Optimizing the Placement of Roadside LiDAR at Intersections (TRBAM-24-05709) - A141

Yiming Wang/Southwest Jiaotong University, Ruijin Bai/Southwest Jiaotong University, Peng Cao/Southwest Jiaotong University, Xiaobo Liu/Southwest Jiaotong University

Reliable Observation Of Origin-Destination Matrix Considering Sensor Failure Phenomenon (TRBAM-24-05712) - A183

Hessam Arefkhani/Sharif University of Technology, Yousef Shafahi/Sharif University of Technology, Mohammad Miralinaghi/Sharif University of Technology, Mohammadhosein Pourgholamali/Sharif University of Technology, Samuel Labi/Sharif University of Technology

Evaluating Effectiveness and Identifying Appropriate Methods for Anomaly Detection in Intelligent Transportation Systems (TRBAM-24-01580) - A122

Kunming Hong/University of Bristol, Qixiu Cheng/University of Bristol, Kai Huang/University of Bristol, Zhiyuan Liu/University of Bristol

Semi-Supervised Semantic Segmentation on Vehicle-Mounted, Fish-Eye Camera Images (TRBAM-24-01331) - A123

Sneha Paul/Concordia University, Zachary Patterson/Concordia University, Nizar Bouguila/Concordia University

CEMFormer: Learning to Predict Driver Intentions from In-Cabin and External Cameras via Spatial-Temporal Transformers (TRBAM-24-01097) - A142

Yunsheng Ma/Purdue University, Amr Abdelraouf/Purdue University, Kyungtae Han/Purdue University, Rohit Gupta/Purdue University, Ziran Wang/Purdue University

A Review on Constructing and Maintaining Geometric Digital Twins of Highways (TRBAM-24-00258) - A152

Diana Davletshina/University of Cambridge, Ioannis Brilakis/University of Cambridge

A Lightweight Online Multi-Object Tracking Method Enhanced with Attention Mechanism (TRBAM-24-00095) - A131

Xiaoying Yi/Southeast University, Qi Liu/Southeast University, Junfeng Jiang/Southeast University, Yikang Rui/Southeast University, Bin Ran/Southeast University

The Enhancement of the Data Pipeline of a Connected Vehicle Corridor: A Leap Towards Digital Twin Implementation (TRBAM-24-06362) - A200

Keshu Wu/University of Wisconsin, Madison, Yang Cheng/University of Wisconsin, Madison, Pei Li/University of Wisconsin, Madison, Steven Parker/University of Wisconsin, Madison, Bin Ran/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison

2215



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Novel Paradigms for the Use of Statistical and Econometric Methods in Transportation Research

Sheikh Shahriar Ahmed, Steer, presiding

Sponsored By Standing Committee on Statistical and Econometric Methods

This poster session will present research on statistical and econometric methods in transportation research.

An Introduction to the Access Weight Matrix: A Departure from Traditional Spatial Weight Matrices (TRBAM-24-06146) - A102

Fatemeh Janatabadi/George Mason University, Alireza Ermagun/George Mason University

Application of Bayesian Modeling Averaging Copula Approach for Analyzing the Parameters of Car-Following Model (TRBAM-24-05789) - A112

Shubo Wu/Tongji University, Yajie Zou/Tongji University, Xinzhi Zhong/Tongji University, Yunlong Zhang/Tongji University

Outlier Detection Using Stochastic Differential Equations Based on Gaussian Process Regression (TRBAM-24-05344) - A121

Guiqi Dai/Southeast University, Bawei Ru/Southeast University, Qixiu Cheng/Southeast University, Zhiyuan Liu/Southeast University, Ziyuan Gu/Southeast University

Demystifying the Spatio-Temporal Heterogeneity of Rental Return Imbalance on Bikeshaaring Systems: A Bayesian Additive Regression Trees Model (TRBAM-24-05159) - A111

Kaifa Lu/University of Florida, Yanghe Liu/University of Florida, Zhong-Ren Peng/University of Florida

Calibrating Multimodal, Location-Based Service Traffic Data Using Random Forest Models (TRBAM-24-04961) - A113

Nicholas Aldridge/University of Nebraska, Lincoln, Jason Hawkins/University of Nebraska, Lincoln, Yunwoo Nam/University of Nebraska, Lincoln

A Bayesian Hierarchical Autoregressive Integrated Moving Average-Copula Model with Temporal and Spatial Correlations for Transport Time Series (TRBAM-24-03298) - A120

Siroos Shahriari/University of New South Wales, Scott Sisson/University of New South Wales, Taha Rashidi/University of New South Wales

Addressing Uncertainties in Transportation Econometrics with Missing Data: A Comparative Study Between Single and Multiple Imputation (TRBAM-24-04469) - A100

Md Istiak Jahan/University of Central Florida, Tanmoy Bhowmik/University of Central Florida, Lauren Hoover/University of Central Florida, Naveen Eluru/University of Central Florida

(continued)

A Two-Dimensional Driving Risk Assessment Method Based on the Fuzzy Logic Model (TRBAM-24-03204) - A110

Wei Ye/Southeast University, Yueru Xu/Southeast University, Yichang Shao/Southeast University, Xiaomeng Shi/Southeast University, Zhirui Ye/Southeast University

Hierarchical Nearest Neighbor Gaussian Processes to Model Spatially Correlated Unobserved Effects in Discrete Choice: Mode Choice in New York City (TRBAM-24-00871) - A103

Daniel F. Villarraga/Cornell University, Ricardo Daziano/Cornell University

Integrated Modeling of Residential Relocation, Move Out Type, Work Place Relocation, and Employment Type

Mobility: A Large-Scale Dynamic Bayesian Network Approach (TRBAM-24-00787) - A101

Yajie Yang/Eindhoven University of Technology, Soora Rasouli/Eindhoven University of Technology, Feixiong Liao/Eindhoven University of Technology

2216



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Current Research Topics in Public-Private Partnerships

Mariana Torres-Montoya, International Finance Corporation, presiding

Albert Racciatti, Halmar International / ASTM North America, presiding

Sponsored By Standing Committee on Economics and Finance

This Poster Session will highlight new research, policy innovations, strategies, and lessons learned in the application of Public Private Partnerships (P3s) for delivery, finance, and long-term operation of transportation infrastructure projects. The objective is to share research findings and case studies that identify best practices for implementing successful projects/programs. Selections are based on poster abstracts submitted to and selected by the TRB Public-Private Partnership Subcommittee.

Public-Private Partnerships and Performance-Based Contracts for the Electric Vehicle Charging Infrastructure (P24-20636) - A223

Zachary Karson/Rebel, Christine Shepherd/Rebel, Marcel Ham/IMG Rebel

Electric Vehicle Charging Infrastructure Public-Private Partnership Opportunities for a Dynamic Future (P24-20637) - A232

Michael Lawrence/Jack Faucett Associates, Inc., Jennifer Hara/No Organization, Seth Kirshenberg/Kutak Rock, PATRICK DECORLA-SOUZA/Federal Highway Administration (FHWA)

Using Blockchain and Digital Currencies to Build and Finance the Future of Transportation Infrastructure (P24-20638) - A222

William Riggs/University of San Francisco

Federalism in Transportation Funding and Its Implications for Private-Sector Participation in U.S. Surface Transport Infrastructure: The Role of Federalism in Facilitating Public-Private Partnerships (P24-20639) - A233

Adiba Nahreen/University of Texas, Austin, Gian-Claudia Sciara/University of Texas, Austin

2217



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Current Research in Economics and Finance

Bryan Gibson, Kentucky Transportation Cabinet, presiding

Sabyasachee Mishra, University of Memphis, presiding

Sponsored By Standing Committee on Economics and Finance

This Poster Session highlights innovations in economic and financial analysis (such as benefit cost analysis, life cycle cost analysis, pricing studies, public private partnership evaluation, financial analysis, etc.). The objective is to share research findings and case studies that identify new methodologies, best practices, and promote the use of economic and financial analysis in the decision-making process. Selections are based on research papers submitted to and selected by the TRB Economics and Finance Committee.

The Mechanism of Supply Chain "Workload Factoring": An Economic Perspective on Information Disclosure (TRBAM-24-00298) - A262

qian xue/Southwest Jiaotong University, Juan He/Southwest Jiaotong University, zhengbo li/Southwest Jiaotong University

(continued)

Access-Based Cost-Benefit Analysis of Sydney's South West Metro Link (TRBAM-24-00606) - A272

Isaac Mann/The University of Sydney, David Levinson/The University of Sydney

A Risk-Averse Stochastic Optimization Framework for Fuel Tax Increase and Choice of Indexing for Revenue Adequacy (TRBAM-24-00682) - A273

Olga Bredikhina/Alabama Transportation Institute, Isil Koyuncu/Alabama Transportation Institute, Abhay Lidbe/Alabama Transportation Institute, Timothy Barnett/Alabama Transportation Institute

Kicking the Can Down the Road: A Summary and Status Update on Federal and State Surface Transportation Infrastructure Funding and Policy Options to Improve Its Sustainability in the Future (TRBAM-24-00901) - A280

Chris Zimmer/MITRE Corporation, Alexander McGlothlin/MITRE Corporation, Sabin Ahmed/MITRE Corporation, Daniel Eisert/MITRE Corporation

Exploring the Potential of a Crowdfunding Program to Achieve Equitable Electric Vehicle Charging Infrastructure (TRBAM-24-00942) - A231

Abdolmajid Erfani/University of Maryland, College Park, Qingbin Cui/University of Maryland, College Park, PATRICK DECORLA-SOUZA/University of Maryland, College Park

Distribution of Benefits and Tax Burdens from Transit Subsidies Among Income Classes and Residential Areas (TRBAM-24-01373) - A263

HyeMin Ju/Texas A&M University, College Station, SungSoo Kim/Texas A&M University, College Station

Household Relocation and Cost of Traveling: An Integrated CGE Modeling Framework for Strategic Transport Appraisal (TRBAM-24-01568) - A281

Jason Wang/University of New South Wales, Kensington, Vinayak DIXIT/University of New South Wales, Kensington, Taha Rashidi/University of New South Wales, Kensington

Implementation of Nationwide Road User Charging: Evaluating Income and Spatial Equity of Different Charging Schemes in a European Country (TRBAM-24-01639) - A282

Juan Gomez/Universidad Politécnica de Madrid, Keila González-Gómez/Universidad Politécnica de Madrid, Lucía Tapiador/Universidad Politécnica de Madrid, José Manuel Vassallo/Universidad Politécnica de Madrid

Revisiting Vehicle Operating Costs in Japan: Considering New Vehicle Technologies in Cost-Benefit Analysis for Road Projects (TRBAM-24-01656) - A283

Ryoma Gouto/Pacific Consultants Co., Ltd, Ayanori Sakashita/Pacific Consultants Co., Ltd, Lucas Alves/Pacific Consultants Co., Ltd, Blawal Hussain/Pacific Consultants Co., Ltd, Hironori Kato/Pacific Consultants Co., Ltd

Mid-Term Revenue Risk Assessment Model for Highway Public-Private Partnership Projects Based on Copula-NPVaR (TRBAM-24-01947) - A292

Yujie Huang/Shanghai Jiao Tong University, Zhipeng Zhang/Shanghai Jiao Tong University, Lei Dai/Shanghai Jiao Tong University, Hao Hu/Shanghai Jiao Tong University, Jie Xue/Shanghai Jiao Tong University

Pass-Through, Income, and Competition: The Case of Germany's Fuel Discount (TRBAM-24-02071) - A241

Manuel Frondel/RWI - Leibniz Institute for Economic Research: RWI - Leibniz-Institut für Wirtschaftsforschung eV, Patrick Thiel/RWI - Leibniz Institute for Economic Research: RWI - Leibniz-Institut für Wirtschaftsforschung eV, Colin Vance/RWI - Leibniz Institute for Economic Research: RWI - Leibniz-Institut für Wirtschaftsforschung eV

Economic and Distributional Analyses of Transportation Projects (TRBAM-24-02394) - A240

Chris Behr/HDR

Driving Sustainable and Community-Centric Growth Through Tokenization-Based Finance: A Blockchain Solution (TRBAM-24-04483) - A230

Yifeng Tian/JLL Public Institutions Group, Kristy David/JLL Public Institutions Group, Qingbin Cui/JLL Public Institutions Group

Income and Geographic Distribution of a Vehicle Miles Traveled Fee: A Case Study of California, Iowa, New York, and Texas (TRBAM-24-04692) - A253

Musfira Rahman/Texas A&M University, College Station, HyeMin Ju/Texas A&M University, College Station, Mark Burris/Texas A&M University, College Station

Can Americans Support Alternatives to the Gas Tax?: An Updated National Analysis of the Role of Information and Education on Policy Support (TRBAM-24-05087) - A252

Clare Nelson/University of Vermont, Gregory Rowangould/University of Vermont

Financing Smart Roads for Driving Automation (TRBAM-24-05222) - A293

Sina Bahrami/University of Michigan, Ann Arbor, Yafeng Yin/University of Michigan, Ann Arbor, Mehdi Nourinejad/University of Michigan, Ann Arbor

Evaluating the Impact of New York City's Congestion Surcharge Policy (TRBAM-24-05416) - A291

Daniel Vignon/New York University, Yanchao Li/New York University

Mileage Fees as a Gas Tax Replacement: An Assessment of Public Support and Mileage Fee Rate Preference from a National Tax Survey (TRBAM-24-05671) - A251

Clare Nelson/University of Vermont, Hilary Nixon/University of Vermont, Asha Agrawal/University of Vermont, Gregory Rowangould/University of Vermont

What Do Americans Think About Mileage Fees and Gas Taxes?: Results from Year 14 of a National Survey (TRBAM-24-06061) - A250

Asha Agrawal/Mineta Transportation Institute, Hilary Nixon/Mineta Transportation Institute, Adam Azevedo/Mineta Transportation Institute

MobilityCoins: Navigating the Complexities of Tradable Credit Schemes (TRBAM-24-06064) - A243

Philipp Servatius/Technical University of Munich, Allister Loder/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

2218



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Emerging Topics in Economics and Finance

Sabyasachee Mishra, University of Memphis, presiding

Bryan Gibson, Kentucky Transportation Cabinet, presiding

Sponsored By Standing Committee on Economics and Finance

This Poster Session highlights innovations in economic and financial analysis (such as benefit cost analysis, life cycle cost analysis, pricing studies, public private partnership evaluation, financial analysis, etc.). The objective is to share research findings and case studies that identify new methodologies, best practices, and promote the use of economic and financial analysis in the decision-making process. Selections are based on poster abstracts submitted to and selected by the TRB Economics and Finance Committee.

Enhance Mobility Innovation with Software-Based Solutions for Smart and Equitable Travel Demand Management (P24-20651) - A290

Dongyang Zhen/University of Maryland, Zahra Halimi/University of Maryland

Business Impact Assessment of Limited Access Roadway Investments in a Fully Built Environment: The Tampa Hillsborough Expressway Authority Selmon Expressway Western Extension (P24-20652) - A300

Robert Frey/Tampa-Hillsborough County Expressway, Sisinnio Concas/University of South Florida, Anna Quinones/Tampa Hillsborough Expressway Authority

Measuring the Social Value of the Seoul Public Bikesharing System (P24-20653) - A310

Ok Namkung/World Bank, Joonho Ko/Hanyang University, Jonghan Park/Hanyang University

Estimating Optimal Railway Infrastructure Investment Across Countries (P24-20654) - A311

Bismark Agbelie/Catholic University of America

How Will California's Electric Vehicle Policy Impact State-Generated Transportation Revenues? (P24-20655) - A303

Asha Agrawal/Mineta Transportation Institute, Humberto Tasaico/Retired, Hannah King/University of California, Los Angeles

Benefit-Cost Analysis: Intercity Rail Best Practices (P24-20656) - A312

Jordan Foster/KPMG LLP, Lucile Kellis/KPMG LLP

Safety, Liability, and Insurance Markets in the Age of Automated Driving (P24-20657) - A302

Daniel Vignon/New York University, Sina Bahrami/University of Michigan, Ann Arbor

On the Effects of Congestion Policy for Ridehailing Services in New York City (P24-20658) - A301

Yanchao Li/New York University, Daniel Vignon/New York University

Post-COVID Developments in Electric Vehicles and Connected and Autonomous Vehicles and Their influence on Congestion and Greenhouse Gas Emissions (P24-20659) - A313

Rimon Rafiah/Economikr, Ira Hirschman/EBP US, Steven Landau/EBP US

2219



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Performance of Geomaterials Supporting Transportation Infrastructure

Anand Puppala, Texas A&M University, College Station, presiding

Soheil Nazarian, University of Texas, El Paso, presiding

Sponsored By Section - Geology and Geotechnical Engineering, Section - Geology and Geotechnical Engineering, Subcommittee on Geotechnical Asset Management, Standing Committee on Engineering Geology, Subcommittee on Rockfall Management, Subcommittee on Advances in Landslides, Analysis and Control, Standing Committee on Soil and Rock Properties and Site Characterization, Subcommittee on Geophysics, Standing Committee on Geo-Environmental and Climatic Impacts on Geomaterials, Standing Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials, Standing Committee on Transportation Earthworks, Standing Committee on Geotechnical Instrumentation and Modeling, Standing Committee on Foundations of Bridges and Other Structures, Standing Committee on Geosynthetics, Standing Committee on Stabilization of Geomaterials and Recycled Materials, Section - Materials, Standing Committee on Asphalt Materials Selection and Mix Design, Subcommittee on Integration of Asphalt Mixture Characteristics wit

This event will showcase 10 research poster presentations from young members working in the field of geology and geotechnical engineering.

Effect of Moving Vehicle Load on Stiffness Characteristics of Unbound Granular Materials (P24-20765) - B710

Ceren Aydin/Michigan State University, Mustafa Hatipoglu/Istanbul Technical University, Bora Cetin/Michigan State University, Halil Ceylan/Iowa State University

Unlocking a Smoother Ride: Mitigating Pavement Damage with Engineered Water Repellency (P24-20766) - B711

Mohammad Wasif Naqvi/Michigan State University, Md Fyaz Sadiq/Michigan State University, Bora Cetin/Michigan State University, John Daniels/University of North Carolina, Charlotte

Insight into the Mechanical Strength of Chemically Stabilized Soil from Pore Solution Chemistry (P24-20767) - B712

Ashish Bastola/Oregon State University, Pavan Akula/Oregon State University

Intelligent Compaction During the Pavement Test Facility Reconstruction Project at the Turner-Fairbank Highway Research Center (P24-20768) - B713

Isaac Zuniga/University of Texas, El Paso

Laboratory Study on the Effect of Fungal Mycelium Treatment on Fine-Grain Soils (P24-20769) - B714

Emily Chen/Baton Rouge Magnet High School, Hai Lin/Louisiana State University

Evaluating the Efficacy of Chemical Stabilization to Rehabilitate Highway Embankment Slopes in Texas (P24-20770) - B715

Ayush Kumar/Texas A&M University, Nripojyoti Biswas/Texas A&M University, College Station, Anand Puppala/Texas A&M University, College Station

Analysis of Geosynthetic Encased Stone Columns for Saturated and Unsaturated Soils (P24-21062) - B716

Mohammed Shakeel Abid/Texas State University

Laboratory Investigation of Field Moisture Capacities of Silty Sands at Different Fine Contents (P24-21063) - B717

Mozaher Ul Kabir/University of Kansas, Md Wasif Zaman/University of Kansas

Transportation Infrastructure Insulation Using Geofoms (P24-21064) - B718

Clay Caldwell/Texas A&M University, Hiramani Chimaurya/Texas A&M University

Reinforcement Geosynthetic: A Solution for Climate Change Impacted Resource Roads (P24-21271) - B719

Papa Thiam/FPinnovations

2220



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

In Situ Testing

Robert Bachus, Geosyntec Consultants, Inc., presiding

Sponsored By Standing Committee on Soil and Rock Properties and Site Characterization

(continued)

Develop Regression Models to Evaluate the Undrained Shear Strength of Clay Soils from Cone Penetration Tests (TRBAM-24-02018) - B692

Md Imran Hossain/Louisiana Department of Transportation and Development, Murad Abu-Farsakh/Louisiana Department of Transportation and Development

Validation of a Compact Man-Portable Automatic Dynamic Cone Penetrometer (TRBAM-24-02408) - B693

Ernest Berney IV/U.S. Army Engineer Research and Development Center, Jami Rushing/U.S. Army Engineer Research and Development Center, Lulu Edwards/U.S. Army Engineer Research and Development Center

Evaluation of Lightweight Aggregate with the Dynamic Cone Penetrometer (TRBAM-24-00124) - B694

Gavin Gautreau/Louisiana Transportation Research Center (LTRC), Nicholas Ferguson/Louisiana Transportation Research Center (LTRC), Masoud Nobahar/Louisiana Transportation Research Center (LTRC)

2221



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Unsaturated Geomaterials Mechanics and Drainage

John Siekmeier, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Mechanics and Drainage of Saturated and Unsaturated Geomaterials, Section - Geology and Geotechnical Engineering

Effect of Strong Contraction on the Shear Behavior of Volcanic Soils (TRBAM-24-01077) - B704

Beatrice Magombana/Tennessee State University, Reiko Kuwano/Tennessee State University, Dorcas Machimu/Tennessee State University

Evaluating the Use of Machine Learning for Subgrade Moisture Prediction in Cold Regions (TRBAM-24-01815) - B707

Asif Ahmed/State University of New York (SUNY), Abolfazl Karimpour/State University of New York (SUNY)

Hydro-Mechanical Characteristics of Subgrade Soil Based on Centrifuge Testing and Multiphysics Analysis (TRBAM-24-01945) - B706

Ganggui Liu/Zhejiang University, Xue Luo/Zhejiang University, Yuqing Zhang/Zhejiang University

Evaluation and Modeling of the Resilient Modulus of Two Tropical Soils Considering Unsaturated Conditions (TRBAM-24-02949) - B705

Camila Kern/Federal University of Rio Grande do Sol, Gabriel Schreinert/Federal University of Rio Grande do Sol, William Fedrigo/Federal University of Rio Grande do Sol, Wai Gehling/Federal University of Rio Grande do Sol, Washington Núñez/Federal University of Rio Grande do Sol

Characterizing the Resilient Modulus of Swedish Subgrades for Pavement Design Purposes (TRBAM-24-03387) - B708

José Carvalho Everton/KTH Royal Institute of Technology, Sigurdur Erlingsson/KTH Royal Institute of Technology

Application of Supervised Machine Learning Algorithms to Predict Fredlund–Xing Coefficients from Soil-Water Characteristics Curve for Plastic Soils (TRBAM-24-03776) - B703

Prashanta Acharjee/University of Texas, Tyler, Mena Souliman/University of Texas, Tyler

Predictive Model for Determining Saturation Profiles Under Pavements During Flood Events (TRBAM-24-03822) - B702

Wei Sun/University of New Hampshire, Jo Sias/University of New Hampshire, Eshan Dave/University of New Hampshire

Permanent Deformation Prediction of Clay Subgrade Under Different Moisture and Stress Conditions Using Repeated Load Triaxial Testing (TRBAM-24-03948) - B701

Hailin Wang/Tongji University, Hailin Wang/Tongji University

Evaluation of the Impact of Climate Variability on the Soil-Water Characteristics Curve (TRBAM-24-06044) - B690

Fariha Rahman/Jackson State University, Md Fahimuzzaman Khan/Jackson State University, Audrika Nahian/Jackson State University, Sadik Khan/Jackson State University, Farshad Amini/Jackson State University

Data-Driven Prediction of Climate Change Impact on Soil Moisture Content in Yazoo Clay using Machine Learning (TRBAM-24-06301) - B691

Audrika Nahian/Jackson State University, Nur Shuman/Jackson State University, Fariha Rahman/Jackson State University, Mohammad Sadik Khan/Jackson State University, Md Fahimuzzaman Khan/Jackson State University

Heavy Rainfall and Moisture Susceptibility of Pavement Foundation: A Case Study Coupling Finite Element Method and MnROAD Moisture Monitoring Data (TRBAM-24-04629) - B700

Md Jibon/Iowa State University, Md Abdullah All Sourav/Iowa State University, Masrur Mahedi/Iowa State University, Sunghwan Kim/Iowa State University, Halil Ceylan/Iowa State University, Raul Velasquez/Iowa State University



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Harnessing Data for Maintenance Management Systems

Omidreza Shoghli, University of North Carolina, Charlotte, presiding

Sponsored By Standing Committee on Maintenance Management Systems, Standing Committee on Pavement Management Systems, Standing Committee on Bridge and Structures Management

This session contains an excellent set of posters that explore how machine learning helps assess road markings using LiDAR and how drones predict bridge conditions. See AI in action for spotting potholes in real-time. Learn about smart planning for street sprinklers and new ways to process road data. From using advanced tech to classify road damage to the latest methods for spotting pavement issues, these presentations cover a broad range of topics. All in all, it's about harnessing data using technology for maintenance management.

A Novel Hybrid Technique for Predicting Pavement Conditions and Dynamic Multi-Objective Decisions for Pavement Maintenance and Rehabilitation (TRBAM-24-00072) - B672

Hamed Naseri/Polytechnique Montréal: Polytechnique Montreal, Amirreza Aliakbari/Polytechnique Montréal: Polytechnique Montreal, Mahdie Asl Javadian/Polytechnique Montréal: Polytechnique Montreal, Alireza Aliakbari/Polytechnique Montréal: Polytechnique Montreal, E.O.D Waygood/Polytechnique Montréal: Polytechnique Montreal

Developing an Optical Sensing Method for Structure Deformation Measurement Considering Camera Motion (TRBAM-24-00076) - B673

xiangyan wu/Southeast University, Haoyuan Luo/Southeast University, Leyi Zhu/Southeast University, Bangyin Liu/Southeast University, Xiangling Chen/Southeast University, Xiaoming Huang/Southeast University

Port Authority of New York and New Jersey Enterprise Asset Condition Rating Development and Implementation (TRBAM-24-00395) - B678

Robert Kumapley/WSP, Larissa James/WSP, Lisbeth Concho/WSP

Enhancing Road Network Asset Management in Lao PDR Through Stochastic Deterioration Forecasting and Optimization (TRBAM-24-00400) - B677

Felix Obunguta/Osaka University, Souvikhane Hanpasith/Osaka University, Kotaro Sasai/Osaka University, Kiyoyuki Kaito/Osaka University

Research on Optimization of Maintenance Tasks Scheduling for Metro System Based on Resource Constraints (TRBAM-24-01032) - B697

Qin Luo/Shenzhen Technology University, Shan Huang/Shenzhen Technology University, Jingjing Chen/Shenzhen Technology University, Jianwei Song/Shenzhen Technology University, Cuifeng Zeng/Shenzhen Technology University, Wei Li/Shenzhen Technology University

Pavement Monitoring and Maintenance Decision Making Using Satellite Data: Assessing Its Value in Partially Observable Stochastic Environments (TRBAM-24-02346) - B679

Mahyar Shahri/University of Georgia, Sung-Hee Kim/University of Georgia

Proposing a DataDOSE Framework to State Departments of Transportation (TRBAM-24-02351) - B680

Hala Nassereddine/University of Kentucky, Bassam Ramadan/University of Kentucky, Makram Bou Hatoum/University of Kentucky, Francesca Maier/University of Kentucky, Alexa Mitchell/University of Kentucky

Research on Targeted Maintenance Decision Optimization of Long-Span Road Network (TRBAM-24-02852) - B681

Liping Cao/Harbin Institute of Technology, Ting Tan/Harbin Institute of Technology, Xiangchen Hou/Harbin Institute of Technology, Zejiao Dong/Harbin Institute of Technology

An Attention-Based Improved YOLOv8 Method for Pavement Distress Detection (TRBAM-24-03036) - B682

Zhen Wang/Virginia Polytechnic Institute, Montasir Abbas/Virginia Polytechnic Institute, Linbing Wang/Virginia Polytechnic Institute

Pavement Periodic Maintenance Using Machine Learning to Predict International Roughness Index and Remaining Service Life in Thailand (TRBAM-24-03175) - B683

Theerada Rungruangjarensuk/Department of Highways Thailand, Ponlathap Lertworawanich/Department of Highways Thailand

Multi-Object Detection for Daily Road Maintenance Inspection with Uncrewed Aerial Vehicle Based on Improved YOLOv8 (TRBAM-24-03523) - B684

Yuxuan Wu/Southeast University, Junqing Zhu/Southeast University, Tao Ma/Southeast University

(continued)

Hybrid Transfer Learning and Support Vector Machines Models for Asphalt Pavements Distress Classification (TRBAM-24-04308) - B685

Alex Apeageyi/University of East London, Toyosi Ademolake/University of East London, Joseph Anochie-Boateng/University of East London

Innovative Workflow of Falling Weight Deflectometer Data Processing, Analysis, and Visualization (TRBAM-24-04821) - B686

Wen Tang/Purdue University, Boonam Shin/Purdue University, Shreyam Kumar/Purdue University, Mohammad Jahanshahi/Purdue University, Tommy Nantung/Purdue University

Uncrewed Aircraft System–Based, Multi-Layered, Data-Collection Methods and Defect Detection Algorithms for Predictive Analytics and Bridge Asset Management (TRBAM-24-04968) - B687

Harsh Rathod/Niricson, Clara Owen/Niricson, Paul Thompson/Niricson, Eric Arscott/Niricson

Route Planning of Water Sprinklers on Urban Streets Considering Real-Time Demands (TRBAM-24-06012) - B688

Luna Liu/Southwest Jiaotong University, Hongtai Yang/Southwest Jiaotong University, Ke Han/Southwest Jiaotong University, Guocong Zhai/Southwest Jiaotong University

Modeling the Effects of Maintenance Funding Timing on Value for Money (TRBAM-24-06215) - B689

Eric Scheepbouwer/University of Canterbury, Nicola West/University of Canterbury, Jacobus Van der Walt/University of Canterbury

MACHINE LEARNING BASED CORRELATION BETWEEN LIDAR INTENSITY AND RETROREFLECTIVITY FOR ROAD MARKING CONDITION ASSESSMENT (TRBAM-24-06474) - B674

Dmitry Manasreh/University of Cincinnati, Munir Nazzal/University of Cincinnati, Ala Abbas/University of Cincinnati

AN AI-DRIVEN APPROACH FOR AUTOMATED REAL-TIME POTHOLE DETECTION, LOCALIZATION AND AREA ESTIMATION (TRBAM-24-06416) - B675

Younis Matouq/University of Cincinnati, Dmitry Manasreh/University of Cincinnati, Munir Nazzal/University of Cincinnati

Capital-Constrained Road Network Maintenance Scheduling Considering Traffic Dynamics (TRBAM-24-01861) - B696

Yifan Yue/Southeast University, Xinhua Mao/Southeast University, Jun Chen/Southeast University

2223



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Advanced Analytical Techniques Used to Address the Unique Transport Issues of Developing Countries

Samuel Zimmerman, World Bank, presiding

Sponsored By Standing Committee on Transportation in the Developing Countries, Subcommittee on Roadway System Management and Operations, Safety, and Resilience, Subcommittee on Sustainable and Equitable Access and Mobility for All

Effect of Built Environment Characteristics on the Relationship Between Shared E-Bikes and Public Transit (TRBAM-24-00634) - B570

Yu-Qian ZHANG/Southeast University, Yanjie Ji/Southeast University

Evaluation of Safety Based on an Extreme Value Approach at Unsignalized T Intersections in India (TRBAM-24-01794) - B572

Jino Therattil/Indian Institute of Technology, Guwahati, Prathamesh More/Indian Institute of Technology, Guwahati, Nipjyoti Bharadwaj/Indian Institute of Technology, Guwahati

Composite Accessibility Index: A Novel and Holistic Measure for Evaluating Transit Accessibility (TRBAM-24-01817) - B573

Rohit Rathod/Sardar Vallabhbhai National Institute of Technology, Surat, Gaurang Joshi/Sardar Vallabhbhai National Institute of Technology, Surat, Shriniwas Arkatkar/Sardar Vallabhbhai National Institute of Technology, Surat

Analysis of Heterogenous Motorcycle Risk Perception and Crash Exposure in Developing Country's Urban Driving Environment: Precursors and Policy Implications Using Structural Equation Modeling (TRBAM-24-02246) - B560

MD. MUSHTAQUE TAHMID/Bangladesh University of Engineering and Technology, Md Asif Raihan/Bangladesh University of Engineering and Technology, Sadia Salam/Bangladesh University of Engineering and Technology, Asif Mukhtadir/Bangladesh University of Engineering and Technology, Md. Shamsul Hoque/Bangladesh University of Engineering and Technology

Exploring the Spatial-Temporal Heterogeneity of Determinants on the Usage Efficiency of E-Bikesharing: A Case Study of Kunming, China (TRBAM-24-02320) - B550

Zhuangbin Shi/Kunming University of Science & Technology, Jiaxian Wang/Kunming University of Science & Technology, Yang Liu/Kunming University of Science & Technology

(continued)

Battery-Swapping Services in Electric Micro-Mobility: Assessing User Preferences and Willingness to Pay (TRBAM-24-03238) - B562

Chenchen Kuai/Southeast University, Fan Zhang/Southeast University, Huitao Lv/Southeast University

Optimization of Highway Service Areas' Development Directions: A Case Study of Guizhou Province (TRBAM-24-03506) - B553

Mingwei He/Kunming University of Science and Technology, Kaibiao Song/Kunming University of Science and Technology, Qingwen Zhao/Kunming University of Science and Technology, Jie Liu/Kunming University of Science and Technology

Quantifying Drivers' Dilemma at Unsignalized Intersections in Developing Economies: A Case Study from India (TRBAM-24-04157) - B574

Aninda Bijoy Paul/Sardar Vallabhbhai National Institute of Technology, Vishal Patel/Sardar Vallabhbhai National Institute of Technology, Shriniwas Arkatkar/Sardar Vallabhbhai National Institute of Technology

Examining Driver Injury Severity in Motor Vehicle Crashes: A Copula-Based Approach Considering Temporal Heterogeneity in a Developing Country Context (TRBAM-24-04512) - B540

Shahriar Pervaz/University of Central Florida, Tanmoy Bhowmik/University of Central Florida, Naveen Eluru/University of Central Florida

Analysis of Injury Severity Levels and Contributory Factors in Traffic Crashes at Signalized Intersections Under Mixed Traffic Conditions in a Developing Country (TRBAM-24-04704) - B552

John Kodi/HNTB Corporation, Evans Msaki/HNTB Corporation, Angela Kitale/HNTB Corporation, Henrick Haule/HNTB Corporation, MD Sultan Ali/HNTB Corporation

Integration of Ridesourcing and Metro Transit: A Spatio-Temporal Analysis in Shanghai Considering Heterogeneity (TRBAM-24-05361) - B551

Xinghua Liu/Tongji University, Ye Li/Tongji University, Jing Fan/Tongji University, Kaidi Yang/Tongji University, Xuan Shao/Tongji University, Ziliang Lai/Tongji University, Qiumeng Li/Tongji University

Investigating the Determinants of Commuting Efficiency in Young Families of Childbearing Age Considering Household Activity Constraints: A Case Study in Guiyang, China (TRBAM-24-05444) - B554

Yang Liu/Kunming University of Science and Technology, Feng Chen/Kunming University of Science and Technology, Baohong He/Kunming University of Science and Technology, Mingwei He/Kunming University of Science and Technology, Zhuangbin Shi/Kunming University of Science and Technology

Estimation of Potential User's Willingness to Pay for Electric Two-Wheelers in Pune, India (TRBAM-24-05964) - B541

Pravin Telang/Indian Institute of Technology, Bombay, Perumal Vedagiri/Indian Institute of Technology, Bombay

Investigating the Effects of Underreporting on Traffic Accident Severity in Cambodia (TRBAM-24-05974) - B563

Chamnab Sreang/Hiroshima University, Varun Varghese/Hiroshima University, Makoto Chikaraishi/Hiroshima University

Managing Transit-Oriented Development: A Comparative Analysis of Expert Groups and Multi-Criteria Decision-Making Methods (TRBAM-24-06413) - B564

Reza Abdullah/Hiroshima University, Blessy Xavier/Hiroshima University, Hyewon Namgung/Hiroshima University, Varun Varghese/Hiroshima University, Akimasa Fujiwara/Hiroshima University

2224



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Innovation in Accessible Transportation and Mobility

Chengbo Ai, University of Massachusetts, Amherst, presiding

Sponsored By Standing Committee on Accessible Transportation and Mobility

Poster session from the Accessible Transportation and Mobility committee (AME50) featuring research papers and abstracts on state-of-the-art strategies, best practices, international examples, and innovative approaches to improving accessibility and mobility for persons with disabilities. Topics of focus include progress in developing accessible infrastructure and services, innovations in accessible program and service development, and innovations in accessible public policy and education.

E-Bikes Toward Inclusive Mobility: A Literature Review of Perceptions, Concerns, and Barriers (TRBAM-24-00558) - B600

Ipek Sener/Texas A&M Transportation Institute, Kyuhyun Lee/Texas A&M Transportation Institute

First- and Last-Mile Travel Experiences of Disabled Transit Riders (TRBAM-24-01252) - B601

Kaylyn Levine/East Carolina University

(continued)

Understanding Spatio-Temporal Patterns of Walking Behavior of Older People in Shenzhen, China, via Mobile Phone Big Data (TRBAM-24-01570) - B602

Xuan HE/Chinese University of Hong Kong, Sylvia Y. He/Chinese University of Hong Kong

Exploring the Spatial Variations of Walking Activity Among Older Adults in a Mountainous City: A Case Study of Guiyang, China (TRBAM-24-02284) - B609

Zhuangbin Shi/Kunming University of Science and Technology, Canyu Zhou/Kunming University of Science and Technology, Mingwei He/Kunming University of Science and Technology, Yang Liu/Kunming University of Science and Technology

Approaches to the Study of Paratransit in the United States and Canada: Modeling, Existing, or Alternative (TRBAM-24-02324) - B603

Theodore Collins/McMaster University, Léa Ravensbergen/McMaster University, Mischa Young/McMaster University

Teleactivities and Mobility Disability: A Qualitative Study (TRBAM-24-03056) - B604

Jamie Kwon/University of New Hampshire

Community Public Mobility Using On-Demand, Low-Speed Electric Vehicles: A Case Study in Downtown St. Louis, Missouri (TRBAM-24-03831) - B605

Johnny Esteban/National Renewable Energy Laboratory (NREL), Rick Grahn/National Renewable Energy Laboratory (NREL), Bonnie Powell/National Renewable Energy Laboratory (NREL), Stanley Young/National Renewable Energy Laboratory (NREL)

Exclusion from Activities and Transportation Modes by Disability and Income: Results from a Survey in California (TRBAM-24-04166) - B606

Justin Flynn/University of California, Davis, Giovanni Circella/University of California, Davis, Prashanth Venkataram/University of California, Davis

Investigating Heterogeneity in Willingness of Elderly to Participate in Social Activities by Increasing Public Transport Fare Using a Model-Based Recursive Partitioning (TRBAM-24-04249) - B607

Juhyoun Youm/Yonsei University, Jinhee Kim/Yonsei University, Jaewoong Yun/Yonsei University, Jin-Hyuk Chung/Yonsei University

Examining the Influence of Personal Time-Based Accessibility on the Frequency of Public Transit Use Among Older Adults Across Canada (TRBAM-24-04409) - B608

Meredith Alousi-Jones/McGill University, Ahmed El-Geneidy/McGill University

Estimating Uncertainty and Misery (Index) of the Paratransit Experience (TRBAM-24-04446) - B610

Aditi Misra/University of Colorado, Denver, Wesley Marshall/University of Colorado, Denver, Lucy O'Sullivan/University of Colorado, Denver, Manish Shirgaokar/University of Colorado, Denver

Investigating Unfulfilled Travel Needs for People with Travel-Limiting Conditions: Using the 2017 National Household Travel Survey Data (TRBAM-24-04962) - B611

Siyu Zhang/Florida International University, Md Al Adib Sarker/Florida International University, Ibukun Titiloye/Florida International University, Xia Jin/Florida International University

Exploring the Trip Characteristics of Regular Microtransit Users: A Case Study from Wilson, North Carolina (TRBAM-24-05130) - B612

Subid Ghimire/North Carolina State University, Eleni Bardaka/North Carolina State University

Understanding the Perceptions of College Students on the Operation of an Automated Shuttle for Persons with Disabilities on Campus Walkways (TRBAM-24-06093) - B613

Sia Lyimo/Progressive AE, Valerian Kwizile/Progressive AE, Boniphace Kutela/Progressive AE, Zachary Asher/Progressive AE

Travel as Dependents: Introducing a New Category Under Travel Mode Choice (TRBAM-24-05806) - B614

Seema Singh/Cambridge Systematics

Analyzing the Shift in Paratransit Usage Patterns During the COVID-19 Pandemic: Exploring Contributing Factors and Implications (TRBAM-24-06257) - B615

Troyee Saha/University of Texas, Arlington, Kate Hyun/University of Texas, Arlington

Measuring Accessibility for Older Adults Based on an Adjusted Two-Step Floating Catchment Area Method (TRBAM-24-04299) - B616

Zihao Wen/University of Utah, Xiaoyue Liu/University of Utah, Andy Hong/University of Utah

2225



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

6-Minute Showcase: Sustainability, Resilience, and Society

Brittney Gick, Texas A&M Transportation Institute, presiding

Sponsored By Section - Transportation Systems Resilience, Subcommittee on Young Members-Sustainability and Resilience

The Young Member Council - Sustainability and Resilience (YMC - S&R) is sponsoring a forum at the Transportation Research Board (TRB) Annual Meeting in January that will feature 6-minute presentations by students and young professionals (35 and under) on their sustainability, resilience, or society-related innovative research or effective practice. Prior to this Poster Session is a Lectern Session where students and young professionals presented within 6-minutes and were given feedback from three experts from each of the three fields. This Poster Session is an opportunity to speak one-on-one about the work with each of the student and young professional presenters from the 6-Minute Showcase Lectern Session.

Analyze Crashes During Extreme Weather (P24-20283) - B582

Ruijie Bian/Louisiana Transportation Research Center (LTRC)

When the Stakes Are High: Measuring Feelings of Safety in Wildfire Evacuations (P24-20273) - B583

Sarah Grajdura/University of Vermont

Strengthening Public Transit Equity in Evacuation Planning Through a Community-Centered Approach (P24-20275) - B584

Veronica Wambura/University of Alberta

Fostering the Transition to Electric Buses: An In-Depth Analysis of Institutional Enablers for Sustainable Public Mobility (P24-20276) - B592

Ann Mary Varghese/Indian Institute of Technology, Kharagpur

Inclusive Transportation System and Understanding Mode Choice Behavior of People with Disabilities: A Case Study in Utah (P24-20277) - B593

Megh Bahadur KC/Utah State University

Charging Infrastructure Deployment Suitability in Illinois and the Transition from Gas Stations (P24-20373) - B594

Jiewen Luo/University of Massachusetts, Amherst

2226



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Current Issues in Aviation

Ryan Dittoe, Mead & Hunt, Inc., presiding

Sponsored By Aviation Group, Standing Committee on Aviation System Planning, Standing Committee on Aviation Economics and Forecasting, Standing Committee on Airport Terminals and Ground Access, Standing Committee on Aircraft/Airport Compatibility, Standing Committee on New Users of Shared Airspace

Improving Speech Intelligibility from Public Address Systems in Transportation Terminals (TRBAM-24-02846) - B632

Deborah Jue/Wilson Ihrig, Gary Glickman/Wilson Ihrig, Patrick Murphy/Wilson Ihrig

Implementation of Progressive Design-Build in Airport Capital Construction Projects (TRBAM-24-04314) - B622

Phuong Nguyen/South Dakota State University, Daniel Tran/South Dakota State University, Sid Scott/South Dakota State University, Linda Konrath/South Dakota State University

Modeling Airport Level Domestic Air Passenger Flows (TRBAM-24-05122) - B621

Sudipta Dey Tirtha/University of Central Florida, Naveen Eluru/University of Central Florida

The Effect of the Pandemic on the Passenger Experience in Airport Terminals: A Focus on the Current Scenario and Concerns for the Future (TRBAM-24-05751) - B623

Aromal Thampan/Indian Institute of Technology, Roorkee, Elangovan Rajasekar/Indian Institute of Technology, Roorkee, Bhola Gurjar/Indian Institute of Technology, Roorkee

(continued)

Optimizing Departure Lounge Design for Different Passenger Classes: A Deterministic Queuing Theory Approach (TRBAM-24-05769) - B624

Mohammad Amin Ashena/University of Calgary, Schulich, Lina Kattan/University of Calgary, Schulich, Adam Weiss/University of Calgary, Schulich

“How Should I Get a Ride to the Airport?”: Ground Access to Northern California Airports (TRBAM-24-05933) - B625

Keita Makino/University of California, Davis, Junia Compostella/University of California, Davis, Alimurtaza Kothawala/University of California, Davis, Yongsung Lee/University of California, Davis, Giovanni Circella/University of California, Davis

The Influence of Airline Business Models on Hydrogen Aircraft Uptake in Europe (TRBAM-24-00831) - B665

Yagmur Gök/University College London, Khan Doyme/University College London, Lynnette Dray/University College London, Andreas Schäfer/University College London

Flight Passes Do Stimulate Consumers' Spending: A Case study of China Eastern Airlines' “Wild Your Weekends” (TRBAM-24-01514) - B667

Zhi Dou/Purdue University, Yi Gao/Purdue University

Airline's Fleet Sizing and Pricing Strategies with Convertible Aircraft Under Demand Uncertainty (TRBAM-24-01893) - B668

Zhenwei Gong/University of Hong Kong, Fangni Zhang/University of Hong Kong

Assessing Air Cargo Carrier Behavior During the 1999–2006 International Air Cargo Cartel (TRBAM-24-02680) - B669

James Nolan/University of Saskatchewan, Zoe Laulederkind/University of Saskatchewan

The Integration Level Improvement Efforts of Air–High-Speed Rail Cooperation and Airports: Traffic, Profit, and Welfare Implications (TRBAM-24-02966) - B639

Yingzhi Wang/Beijing Jiaotong University, Xiushan Jiang/Beijing Jiaotong University, Jihui Ma/Beijing Jiaotong University

Impact of Air Connectivity on Bilateral Service Export and Import Trade: The Case of China (TRBAM-24-03577) - B638

Tae Oum/Hong Kong Polytechnic University, Xiangru Wu/Hong Kong Polytechnic University, Kun Wang/Hong Kong Polytechnic University

International Travel Patterns: Exploring Destination Preferences and Airfare Trends to and from the United States (TRBAM-24-04472) - B637

Priyanka Paithankar/University of Texas, Austin, Fatemeh Fakhroosavi/University of Texas, Austin, Kara Kockelman/University of Texas, Austin, Kenneth Perrine/University of Texas, Austin

Investigation of Airline Demand Recovery Process After the Pandemic (TRBAM-24-05046) - B620

Sudipta Dey Tirtha/University of Central Florida, Naveen Eluru/University of Central Florida

Dashcam-Enabled Airport Runway Pavement Distress Detection Using Deep Learning Techniques (TRBAM-24-03027) - B651

Arman Malekloo/University of Utah, David Sacharny/University of Utah, Xiaoyue Liu/University of Utah

Designing Highway Asphalt Concrete Mixtures for Non-Primary Airports (TRBAM-24-03051) - B636

ABDULGAFAR SULAIMAN/University of Illinois, Urbana-Champaign, Uthman Mohamed Ali/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

A Comprehensive Evaluation of Interface Shear Strength and Failure Envelope of Airfield Asphalt Mixtures (TRBAM-24-05632) - B646

Biswajit Kumar Bairgi/Auburn University, Hao Wang/Auburn University, Nam Tran/Auburn University, Fan Yin/Auburn University

Effects of Jet Ablation and Fuel Corrosion on Asphalt Aggregate Interfacial Properties and Their Molecular Mechanisms (TRBAM-24-00493) - B647

Lijun Sun/Southeast University, Xingyu Gu/Southeast University, Dongliang Hu/Southeast University, Zhou Zhou/Southeast University, Guoliang Wang/Southeast University

Triple Bottom Line Comparison of Difference Designs Options for a Regional Airport Pavement Rehabilitation in Australia (TRBAM-24-00555) - B648

Greg White/University of the Sunshine Coast

Early Shrinkage Behavior and Mechanism of Cement Mortar for Rapid Repair of Airport Pavement (TRBAM-24-01522) - B649

Jie Yuan/Tongji University, Heng Wang/Tongji University, Jiangpeng Lv/Tongji University, Jiake Zhang/Tongji University

Examining the Impacts of Urban Air Mobility on Small and Medium Urban Areas: Two Scenarios of Long-Distance Commuting and Emergency Transportation Accessibility (TRBAM-24-01614) - B659

Chenxuan Yang/University of Alabama, Jun Liu/University of Alabama, Sophie Menner/University of Alabama, Xinwu Qian/University of Alabama, Steven Jones/University of Alabama

(continued)

Assessment of the Economic Impact of Urban Air Mobility Siting Through Enhancements in Travel Time Efficiency and Accessibility (TRBAM-24-01844) - B658

Tao Guo/Technische Universitat Munchen, Hao Wu/Technische Universitat Munchen, Constantinos Antoniou/Technische Universitat Munchen

Simulation-Based Optimization for Vertiport Location Selection: A Surrogate Model with Machine Learning Method (TRBAM-24-02772) - B643

Xuan Jiang/Lawrence Berkeley National Laboratory, Shangqing Cao/Lawrence Berkeley National Laboratory, Baichuan Mo/Lawrence Berkeley National Laboratory, Junzhe Cao/Lawrence Berkeley National Laboratory, Hao Yang/Lawrence Berkeley National Laboratory, Yuhan Tang/Lawrence Berkeley National Laboratory, Mark Hansen/Lawrence Berkeley National Laboratory, Raja Sengupta/Lawrence Berkeley National Laboratory, Jinhua Zhao/Lawrence Berkeley National Laboratory

Dynamic Traffic Assignment with Multi-Dimensional Air Traffic Flow Models: A Solution for Urban Air Mobility Traffic Flow Management (TRBAM-24-03241) - B657

Hani Mahmassani/Northwestern University, Vasileios Volakakis/Northwestern University, Christopher Cummings/Northwestern University

Simulation-Based Urban Air Mobility Network Performance Evaluation (TRBAM-24-03467) - B644

Emin Burak Onat/University of California, Berkeley, Banavar Sridhar/University of California, Berkeley, Mark Hansen/University of California, Berkeley, Raja Sengupta/University of California, Berkeley, Vishwanath Bulusu/University of California, Berkeley, Anjan Chakrabarty/University of California, Berkeley

Integrating Flight and Charging Schedules in Urban Air Mobility (TRBAM-24-03651) - B645

Shangqing Cao/University of California, Berkeley, Xuan Jiang/University of California, Berkeley, Vishwanath Bulusu/University of California, Berkeley, Anjan Chakrabarty/University of California, Berkeley, Mark Hansen/University of California, Berkeley, Emin Burak Onat/University of California, Berkeley, Raja Sengupta/University of California, Berkeley, Bo Zou/University of California, Berkeley

Urban Air Mobility: Airport Shuttles or City Taxis (TRBAM-24-03892) - B656

Pierluigi Coppola/Politecnico di Milano, Francesco De Fabiis/Politecnico di Milano, Fulvio Silvestri/Politecnico di Milano

Integration of Flying Vehicle Landings and Takeoffs in Surface Traffic Through a Reservation-Based Connected Vehicle Traffic Control System (TRBAM-24-03900) - B640

Slavica Gavric/University of Pittsburgh, Aleksandar Stevanovic/University of Pittsburgh

High-Efficiency, Low-AR Aerial Vehicles in Urban Transit (TRBAM-24-04060) - B655

Galen Suppes/HS-Drone, LLC, Adam Suppes/HS-Drone, LLC

Exploring Energy Consumption for Low-Altitude Air City Transport Systems: A Traffic Flow and Control Perspective (TRBAM-24-04695) - B654

Yazan Safadi/Technion - Israel Institute of Technology, Assaf Granot/Technion - Israel Institute of Technology, Jack Haddad/Technion - Israel Institute of Technology

Understanding Determinants of Willingness to Pay for Airport Shuttle Service of Urban Air Mobility (TRBAM-24-05929) - B631

Suji Kim/Incheon International Airport Corporation, Incheon, Republic of Korea, Jiho Yeo/Incheon International Airport Corporation, Incheon, Republic of Korea, Kitae Jang/Incheon International Airport Corporation, Incheon, Republic of Korea, Yeongmin Kwon/Incheon International Airport Corporation, Incheon, Republic of Korea

Droning on to Delivery: Examining the Energy Impacts of Using Drones for Moving Goods (TRBAM-24-06188) - B653

Victor Walker/Idaho National Laboratory, Tanveer Bhuiyan/Idaho National Laboratory, Inigo Timermans/Idaho National Laboratory, Rohit Mendadhala/Idaho National Laboratory

Research on Key Node Identification and Invulnerability of Air and CRH Express Multimodal Network in the Yangtze River Delta (TRBAM-24-01176) - B652

Dongxu Xu/Tongji University, Rong Zhang/Tongji University

Evaluating the Impact of Air-Rail Integrated Service on Passengers' Airport Choice by Enhancing Airport Accessibility (TRBAM-24-06138) - B662

Ke Ma/Southeast University, Min Yang/Southeast University, Chaoran Li/Southeast University, Yucheng Wang/Southeast University

Optimization of Departure Flight Sequence Under Large-Scale Delay (TRBAM-24-01034) - B650

Bingjie Liang/Beijing Jiaotong University, Wenqi Lu/Beijing Jiaotong University, Ziwei Yi/Beijing Jiaotong University, Bin Ran/Beijing Jiaotong University

Delay in the Air or Detour on the Ground?: A Case Study in Guangzhou Baiyun International Airport (TRBAM-24-01592) - B663

Zhuoming Du/Nanjing University of Aeronautics and Astronautics, Junfeng Zhang/Nanjing University of Aeronautics and Astronautics, Zhao Ma/Nanjing University of Aeronautics and Astronautics, Jiaxin Xu/Nanjing University of Aeronautics and Astronautics

A New Trajectory Conflict Resolution Strategy Based on Space-Time Prisms (TRBAM-24-01704) - B641

CHEN JINHUI/Nanjing University of Aeronautics and Astronautics, Yong Tian/Nanjing University of Aeronautics and Astronautics, Mengyuan Sun/Nanjing University of Aeronautics and Astronautics, Zhixiong Li/Nanjing University of Aeronautics and Astronautics, Jiangchen Li/Nanjing University of Aeronautics and Astronautics

Time-Delayed, Aircraft-Following Modeling and Stability Analysis Considering Both Air-to-Air Communication Performance and Attention Distribution in a Connected Flow Corridor Environment (TRBAM-24-01979) - B642

xiao huang/Nanjing University of Aeronautics and Astronautics, Yong Tian/Nanjing University of Aeronautics and Astronautics, Mengyuan Sun/Nanjing University of Aeronautics and Astronautics, Kexin Niu/Nanjing University of Aeronautics and Astronautics, Zhixiong Li/Nanjing University of Aeronautics and Astronautics, Jiangchen Li/Nanjing University of Aeronautics and Astronautics

Vehicle-Aircraft Conflict Detection on the Airport Surface: An Improved Velocity Obstacle Method (TRBAM-24-02197) - B630

Feixiang Zhou/Southeast University School of Transportation, Xiaomeng Shi/Southeast University School of Transportation, Jie Bao/Southeast University School of Transportation, Zhirui Ye/Southeast University School of Transportation

Taxiing Route Planning for Aircraft on Airport Surface Considering Conflicts with Ground Service Vehicles (TRBAM-24-06424) - B664

Yu Shen/Tongji University, Peng Zhou/Tongji University, Yujing Zheng/Tongji University, Yuefeng Zheng/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

2227



Monday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Young Professional Research in Aviation

Ryan Dittoe, Mead & Hunt, Inc., presiding

Sponsored By Aviation Group, Subcommittee on Young Members-Aviation, Standing Committee on Aircraft/Airport Compatibility

ACRP Graduate Research Award: Large-Scale Thermoelectric Sensing Technology for Runway Ice Detection (TRBAM-24-02470) - B633

Mark Jackson/University of Cincinnati

Diversity, Equity, and Inclusion: Trends in the Representation of Women Professionals in the Aviation Industry (P24-20321) - B635

Caroline Marete/Purdue University, Cheng Wang/Minnesota State University, Mankato

Integrating Uncrewed Aircraft Systems Technology for Enhanced Airport Sustainability (P24-20322) - B634

Caroline Marete/Purdue University, Cheng Wang/Minnesota State University, Mankato

2228



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Ballroom A

Thomas B. Deen Distinguished Lecture

Victoria Sheehan, Transportation Research Board, presiding

Sponsored By Technical Activities Council

The lectureship recognizes the career contributions and achievements of an individual in one of the areas covered by TRB's Technical Activities Division. Originally known as the Transportation Research Board Distinguished Lectureship, the award was renamed in 2002 in honor of the eighth TRB Executive Director, Thomas B. Deen, who served with distinction from 1980 to 1994. Honorees are invited to present overviews of their technical area of expertise, including evolution, present status, and prospects for the future. TRB also publishes each lecture in a volume of the Transportation Research Record: Journal of the Transportation Research Board.

Welcome and Introduction (P24-20087)

Victoria Sheehan/Transportation Research Board

Technical Activities Council Paper Awards for 2023 (P24-20088)

Avery Grimes/Patriot Rail Company

Introduction of the Deen Lecturer (P24-20089)

Diane Gutierrez-Scaccetti/New Jersey Department of Transportation

Shifting Gears: Reflections on the Role of Researchers in Shaping the Ideas That Shape Transportation (P24-20091)

Susan Handy/University of California, Davis

Closing (P24-20090)

Victoria Sheehan/Transportation Research Board

2229

Monday, 06:00 p.m. - 07:30 p.m., Convention Center, 150B**Artificial Intelligence for Behavior-Based Safety Data Modeling**

Yinhai Wang, University of Washington, presiding

Sponsored By Standing Committee on Artificial Intelligence and Advanced Computing Applications

Over 90% of all highway traffic crashes result from driver errors. With the emergence of connected and autonomous vehicles, there has been an unprecedented generation of behavior-based safety data. This data plays a pivotal role in comprehending the safety performance of both human drivers and future autonomous vehicles, as well as in the development of advanced driver assistance systems (ADAS). Behavior-based safety datasets are often characterized by high dimensionality, nonlinearity, and intricate structures. AI models are exceptionally well-suited for the modeling of such datasets, offering immense potential to extract valuable insights. The session will showcase four cutting-edge studies on behavior-based safety data modeling.

Data-Driven, Semi-Supervised Machine Learning with Surrogate Safety Measures for Abnormal Driving Behavior Detection (TRBAM-24-06080)

Lanxin Lanxin Zhang/Delft University of Technology, Yongqi DONG/Delft University of Technology, Haneen Farah/Delft University of Technology, Arkady Zgonnikov/Delft University of Technology, Bart van Arem/Delft University of Technology

Risk Level Analysis of Lane-Changing Behaviors Using Time Series Data Modeling with Long Short-Term Memory (TRBAM-24-02562)

Yu Wu/McMaster University, Hao Yang/McMaster University, Seyhan Ucar/McMaster University, Yashar Zeinyali Farid/McMaster University

Transformer Diffusor for Controllable Human-Like Generation of Vehicle Lane-Changing Trajectories (TRBAM-24-02590)

Jiqian Dong/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison, Samuel Labi/University of Wisconsin, Madison

Detecting Mild Cognitive Impairment and Dementia in Older Adults Using Naturalistic Driving Data and Interaction-Based Classification from Influence Score (TRBAM-24-05757)

Zhaobin Mo/Columbia University, Xuan Di/Columbia University, Yiqiao Yin/Columbia University, Yongjie Fu/Columbia University, Shaw-Hwa Lo/Columbia University, Carolyn DiGuseppi/Columbia University, David Eby/Columbia University, Linda Hill/Columbia University, Thelma Mielenz/Columbia University, David Strogatz/Columbia University, Minjae Kim/Columbia University, Guohua Li/Columbia University

2230

Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A**Medley of Driver Awareness, Perception, Policy, and Practice or Vehicle User Training, Practice, and Policy**

Daniel Cooke, Washington State Department of Licensing, presiding

Sponsored By Standing Committee on Vehicle User Education, Training, and Licensing

This poster session will be a broad variety of training, technology and driving safety posters that encompass a wide variety of research methods both unique and novel as well as tried and true.

Modeling Disaggregated Time Series Count Data to Explore the Potential Effect of Legislative Changes in Learner License Components on 15-Year-Old Driver Crashes in Louisiana (TRBAM-24-00056) - B524

Md Mahmud Hossain/Auburn University, Huaguo Zhou/Auburn University, Xiaoduan Sun/Auburn University

Interactive PowerPoint Training to Improve Safety Driver Awareness While Operating a Transit Vehicle Equipped with Driving Automation Features (TRBAM-24-02763) - B530

Savana King/OST-R/Volpe Center, Leila Cesic/OST-R/Volpe Center, Alyssa Brodeur/OST-R/Volpe Center, Mirabel Mallett/OST-R/Volpe Center, Jared Young/OST-R/Volpe Center, Scott Gabree/OST-R/Volpe Center, Donald Fisher/OST-R/Volpe Center

How to Improve Driver's Hazard Perception Ability: An Immersive Training Method Incorporating Virtual Reality Technology and a Driving Simulator (TRBAM-24-03655) - B531

Yang Ding/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Zhenlong Li/Beijing University of Technology, Chenxi He/Beijing University of Technology, Pengwei Yan/Beijing University of Technology, Pengcheng Yu/Beijing University of Technology

Using a Variance Score Across Six Driving Environments as a New Measure of Driving Diversity in Practice Driving (TRBAM-24-05017) - B533

Theresa Chirles/Johns Hopkins University, Ziling Shen/Johns Hopkins University, Chia-Hsiu Chang/Johns Hopkins University, Siyao Zhu/Johns Hopkins University, Rebecca Weast/Johns Hopkins University, Gayane Yenokyan/Johns Hopkins University, Johnathon Ehsani/Johns Hopkins University

A Conceptual Model of the Advanced Driver Assistance System Ecosystem: Gaps in the Literature and Research Needs (TRBAM-24-05333) - B534

Tara Goddard/Texas A&M University, Rebecca Sanders/Texas A&M University, Kelly Brasseaux/Texas A&M University, Quan Sun/Texas A&M University

Driving Behavior Analysis of Elderly Drivers on Intersection Entrance Roads Based on Driving Stability Using Different Traffic Control Methods (TRBAM-24-03285) - B532

Bingshuo Chen/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Hongzhen Zhu/Beijing University of Technology, Yang Li/Beijing University of Technology, Xiaoming Liu/Beijing University of Technology

2231



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Intelligent Transportation Systems

Jan-Mou Li, Metropolitan Washington Council of Governments, presiding

Sponsored By Standing Committee on Intelligent Transportation Systems

Decentralized and Coordinated Perimeter Control in Urban Road Networks: An Integrated Cell Transmission Model and Multi-Agent Deep Reinforcement Learning Approach (TRBAM-24-00403) - B640

Xinghua Li/Tongji University, Xinyuan Zhang/Tongji University, Yuntao Guo/Tongji University, Xinwu Qian/Tongji University, Srinivas Peeta/Tongji University

A Joint Dynamic Bus Platooning Formation and Trajectory Planning Optimization on a Transit Corridor (TRBAM-24-01821) - B642

Xin Li/University of Utah, Bangjun Yuan/University of Utah, Yizhe Yuan/University of Utah, Yun Yuan/University of Utah

Long-Distance Trajectory Connection and Construction from Aerial Videos (TRBAM-24-03045) - B634

Yi HE/Wuhan University of Technology, Bo Cao/Wuhan University of Technology, Ye Li/Wuhan University of Technology, Helai Huang/Wuhan University of Technology, Ching-Yao Chan/Wuhan University of Technology

Vehicle-to-Vehicle Communication Based Emergency Visual Alert System for Multiple Intersections (TRBAM-24-03121) - B643

Rei Tamaru/University of Wisconsin, Madison, Yang Cheng/University of Wisconsin, Madison, Cesar Andriola/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison, Bin Ran/University of Wisconsin, Madison

Dynamic Queue Length Estimation Based on Urban Drone Observations Using Machine Learning Approaches (TRBAM-24-03515) - B644

Alexander Kutsch/Technical University of Munich, Lisa Kessler/Technical University of Munich, Natalie Steinmetz/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

A Feed-Forward Traffic Signal Control Method Under Connected Vehicle Environment: A Human-Centric Perspective (TRBAM-24-04187) - B667

Chongqi He/Southeast University, China, Dawei Li/Southeast University, China, Qi Cao/Southeast University, China, Yuchen Song/Southeast University, China, Dongjie Liu/Southeast University, China, Tong Zhang/Southeast University, China

(continued)

Traffic Energy Consumption Oriented Optimal Trajectory Control for a Connected and Automated Vehicle Under Mixed Traffic Condition (TRBAM-24-04708) - B743

Hanyi Yang/University of Hawaii, Rong Zou/University of Hawaii, Guohui Zhang/University of Hawaii, Yiwei Wang/University of Hawaii

The Impact of Cooperative Platooning Utilization in Mixed Traffic (TRBAM-24-04942) - B650

Zeyu Mu/University of Virginia, Sergei S. Avedisov/University of Virginia, Ahmadreza Moradipari/University of Virginia, B. Brian Park/University of Virginia

Toward the Next Generation of Pedestrian and Connected Vehicle Research: A Digital Twin Co-Simulation Framework (TRBAM-24-04948) - B645

Zijin Wang/University of Central Florida, Ou Zheng/University of Central Florida, Liangding Li/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Carolina Cruz-Neira/University of Central Florida, Zubayer Islam/University of Central Florida

Empirical Models of Multiple Real Low-Cost 5.9GHZ Wi-Fi Interferers on IEEE 802.11P (TRBAM-24-05475) - B651

Billy Kihei/Kennesaw State University, Mfon Okpok/Kennesaw State University, Jason Greaves-Taylor/Kennesaw State University, Chase Barclay/Kennesaw State University

Single Field of View Calibration Through Estimating Three Mutually Orthogonal Vanishing Points in Road Scenes (TRBAM-24-05507) - B681

Sourav Dutta/West Virginia University, Linjun Lu/West Virginia University, Fei Dai/West Virginia University

Improved Infrastructure-Assisted Cooperative Ego-Vehicle Tracking via Augmentation of Asynchronous Kinematic Measurements (TRBAM-24-06195) - B684

Saswat Priyadarshi Nayak/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Matthew Barth/University of California, Riverside, Yongkang Liu/University of California, Riverside, Emrah Sisbot/University of California, Riverside, Kentaro Oguchi/University of California, Riverside

A Micro-simulation Study of Connected Vehicle Data-Aided Ramp Metering Facing Cyber Disruptions (TRBAM-24-06490) - B690

Yu Tang/New York University, Jingqin Gao/New York University, Kaan Ozbay/New York University, Li Jin/New York University

Potential of BLE Beacons for Enabling Smart Infrastructure on Urban Roads (TRBAM-24-06509) - B700

Dmitry Manasreh/University of Cincinnati, Safaa Swaleh/University of Cincinnati, Munir Nazzal/University of Cincinnati

A Systematic Approach to Evaluate the State of Illinois' Preparedness for Smart Mobility (TRBAM-24-05057) - B729

Angeli Jayme/University of Illinois, Urbana-Champaign, Berkan Usta/University of Illinois, Urbana-Champaign, Nadim Hamad/University of Illinois, Urbana-Champaign, Divyakant Tahlyan/University of Illinois, Urbana-Champaign, Breton Johnson/University of Illinois, Urbana-Champaign, Hani Mahmassani/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign, Jerry Quandt/University of Illinois, Urbana-Champaign

A Framework to Assess the Readiness of Intelligent Mobility Technologies: Data Needs and Results of a Readiness Survey (TRBAM-24-03600) - B656

A. Latif Patwary/University of Tennessee, Asad Khattak/University of Tennessee, Sheikh Usman/University of Tennessee, Iman Mahdinia/University of Tennessee

Emergency Vehicles Trajectory Planning on Urban Roads Within Connected and Autonomous Vehicles Environment (TRBAM-24-01277) - B641

Yang Liu/Chongqing Jiaotong University, Ke Long/Chongqing Jiaotong University, Wei Wu/Chongqing Jiaotong University, Yi Fei/Chongqing Jiaotong University, Bing Zeng/Chongqing Jiaotong University

A Connected C-V2X Energy-Efficient Dynamic Vehicle Routing: System Development and Evaluation (TRBAM-24-02190) - B682

Mohamed Farag/Virginia Polytechnic Institute, Hesham Rakha/Virginia Polytechnic Institute

Long-Term Evolution for Infrastructure-Based Vulnerable Road Users Safety: A Field Demonstration (TRBAM-24-05720) - B680

Seyedmehdi Khaleghian/University of Tennessee, Chattanooga, Austin Harris/University of Tennessee, Chattanooga, Mohamed fadul/University of Tennessee, Chattanooga, Donald Reising/University of Tennessee, Chattanooga, Mina Sartipi/University of Tennessee, Chattanooga



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Traffic Signal Systems

Xianfeng Yang, University of Maryland, College Park, presiding

Sponsored By Standing Committee on Traffic Signal Systems

A Data-Driven Intersection Geometry Mapping Technique to Enhance the Scalability of Trajectory-Based Traffic Signal Performance Measures (TRBAM-24-00070) - B683

Enrique Saldivar-Carranza/Purdue University, Darcy Bullock/Purdue University

A Novel Max-Pressure Signal Control Considering Signal Coordination to Smooth Traffic in Urban Networks (TRBAM-24-00078) - B721

Te Xu/University of Minnesota, Twin Cities, Simanta Barman/University of Minnesota, Twin Cities, Michael Levin/University of Minnesota, Twin Cities

Joint Optimization of Traffic Signal Control and Vehicle Routing in Signalized Road Networks Using Multi-Agent Deep Reinforcement Learning (TRBAM-24-00108) - B639

Xianyue Peng/Southeast University, Jiulonghu, Hao Wang/Southeast University, Jiulonghu, Gengyue Han/Southeast University, Jiulonghu, Hang Gao/Southeast University, Jiulonghu, Michael Zhang/Southeast University, Jiulonghu

Predicting Directional Traffic Volume at Intersections with Automated Traffic Signal Performance Measures Data Using Long Short-Term Memory (TRBAM-24-00183) - B726

Bangyu Wang/Brigham Young University, Nancy Fulda/Brigham Young University, Shawn Huang/Brigham Young University, Grant Schultz/Brigham Young University, Gregory Macfarlane/Brigham Young University, Joseph Arnesen/Brigham Young University, Adnan Khayyat/Brigham Young University

A Max Pressure Algorithm for Traffic Signals Considering Pedestrian Queues (TRBAM-24-00571) - B720

Hao Liu/Pennsylvania State University, Vikash Gayah/Pennsylvania State University, Michael Levin/Pennsylvania State University

CycLight: Learning Traffic Signal Cooperation with a Cycle-Based Strategy (TRBAM-24-00633) - B649

Gengyue Han/Southeast University, Xiaohan Liu/Southeast University, Xianyue Peng/Southeast University, Hao Wang/Southeast University, Yu Han/Southeast University

A Cooperative Perception-Based Adaptive Signal Control Under Early Deployment of Connected and Automated Vehicles (TRBAM-24-00689) - B716

Wangzhi Li/Purdue University, Yiheng Feng/Purdue University

Traffic Parameters Estimation with Partial Vehicle Trajectories by the Iterative Partial Backpropagation Maximum Likelihood Estimation Framework (TRBAM-24-00731) - B780

Kejun DU/Hong Kong University of Science and Technology, Shuling Wang/Hong Kong University of Science and Technology, Hong Lo/Hong Kong University of Science and Technology

Addressing General Transit Feed Specification Real-Time Data Latency to Improve Transit Signal Priority (TRBAM-24-00872) - B727

Joseph Zhou/Miovision Technologies, Inc., Jay Jackson/Miovision Technologies, Inc., Pam Stravitz/Miovision Technologies, Inc., Gregory Barlow/Miovision Technologies, Inc., Peter Koonce/Miovision Technologies, Inc.

Leveraging Waze Data for Improved Incident Detection: Insights from Data and Traffic Management Center Operators (TRBAM-24-00888) - B717

Minh Le/Texas A&M Transportation Institute, Roberto Macias/Texas A&M Transportation Institute, Dayong Wu/Texas A&M Transportation Institute, Jason Crawford/Texas A&M Transportation Institute, Brandi Bush/Texas A&M Transportation Institute

Cycle-by-Cycle Estimation of Queue Length at Signalized Intersections Using Spatially Sparse Connected Vehicle Trajectories (TRBAM-24-00934) - B781

Junyu Zhu/Tongji University, Jiading, Wanjing Ma/Tongji University, Jiading, Chunhui Yu/Tongji University, Jiading, Yan Zhao/Tongji University, Jiading, Zhihua Zhong/Tongji University, Jiading

Automatic Design of Actuated Traffic Signal Control Plans with Transit Signal Priority Using Grammatical Evolution (TRBAM-24-00983) - B718

Mahmud Keblawi/Technion - Israel Institute of Technology, Tomer Toledo/Technion - Israel Institute of Technology

An Optimization Model for Tram Scheduling and Multi-Path Traffic Signal Coordination Control (TRBAM-24-00999) - B648

Ning Xie/Southeast University, Hao Wang/Southeast University, Changyin Dong/Southeast University

A Partition-Enabled, Multi-Path Signal Optimization Under Arterial Progression for Transit Priority (TRBAM-24-01033) - B657

Weihan Chen/Southeast University School of Transportation, Zhe Zhang/Southeast University School of Transportation, Qi Cao/Southeast University School of Transportation, Changjian Wu/Southeast University School of Transportation, Tianyang Cui/Southeast University School of Transportation, Gang Ren/Southeast University School of Transportation

Optimal Signal Design for Multi-Class and Lane-Free Traffic Conditions (TRBAM-24-01168) - B728

Lelitha Vanajakshi/Indian Institute of Technology, Madras

Joint Optimization and Decentralized Computation of Cooperative Vehicle Trajectories and Traffic Signals at Intersections (TRBAM-24-01257) - B731

Meiqi Liu/Dalian Maritime University, Xinwei Wang/Dalian Maritime University, Meng Wang/Dalian Maritime University

A Multipath Artery Progression Model Considering Speed Fluctuation (TRBAM-24-01269) - B658

Zhe Zhang/Southeast University School of Transportation, Qi Cao/Southeast University School of Transportation, Weihan Chen/Southeast University School of Transportation, Gang Ren/Southeast University School of Transportation, Tongyu Hu/Southeast University School of Transportation, Wentao Wu/Southeast University School of Transportation

Developing a Shockwave-Based Queue Estimation Model to Quantify the Disruption Created by Emergency Vehicle Preemption in Perpendicular Approaches (TRBAM-24-01314) - B736

Mohamadreza Haghani/University of Louisville, Robert Kluger/University of Louisville

Applying Automated Pedestrian Detection Technologies to Improve Pedestrian Safety (TRBAM-24-01345) - B737

Pei-Sung Lin/University of South Florida, Achilleas Kourtellis/University of South Florida, Mohsen Momenitabar/University of South Florida

Enhancing Robustness of Deep Reinforcement Learning-Based Adaptive Traffic Signal Controllers in Mixed Traffic Environments Through Data Fusion and Multi-Discrete Actions (TRBAM-24-01388) - B747

Tianjia Yang/University of North Carolina, Charlotte, Wei Fan/University of North Carolina, Charlotte

A Computationally Efficient Approach for Signal-Vehicle Integrated Control Considering Mandatory Lane Changing (TRBAM-24-01408) - B738

Qingquan Liu/Tsinghua University, Ke Zhang/Tsinghua University, Meng Li/Tsinghua University, Xi Lin/Tsinghua University, Shen Li/Tsinghua University

Arterial Signal Timing Based on Probe Vehicle Trajectories Under Cyclic Stochastic Demand (TRBAM-24-01585) - B782

Xinpeng Li/Tongji University, Chunhui Yu/Tongji University, Wanjing Ma/Tongji University

Harnessing Digital Twin Technology for Adaptive Traffic Signal Control: Improving Signalized Intersection Performance and User Satisfaction (TRBAM-24-01610) - B748

Sagar Dasgupta/University of Alabama, Mizanur Rahman/University of Alabama, Steven Jones/University of Alabama

Decentralized Signal Predictive Control with Real-Time Trajectory Data (TRBAM-24-01665) - B739

Shichao Lin/Tsinghua University, Dakai Yang/Tsinghua University, Sheng Ruan/Tsinghua University, Ruimin Li/Tsinghua University

Multimodal Intersection Control Considering Human Error from Connected Buses (TRBAM-24-01762) - B773

Shiqi Ou/Tongji University, Andreas Hegyi/Tongji University, Zicheng Su/Tongji University, Wanjing Ma/Tongji University, Bart van Arem/Tongji University

Design of Isolated Intersection Signal Control Optimization Algorithm Based on Vehicle Trajectory Data (TRBAM-24-01799) - B647

Zhaoliang Li/Southeast University, Changyin Dong/Southeast University, Hao Wang/Southeast University

Optimization of Traffic Signal Coordination Offset Considering Straight-Ahead Waiting Area (TRBAM-24-01984) - B749

Hongbin Xu/Kunming University, Yuguang Chen/Kunming University, Jincheng Guo/Kunming University, Jintao Huang/Kunming University, Bin Yang/Kunming University

Markov Process Based Particle Filter for Vehicle Trajectory Reconstruction at Signalized Intersections (TRBAM-24-02031) - B784

CHENG JIN/Tongji University, Zicheng Su/Tongji University, Ling Wang/Tongji University, Xiaodong Zhu/Tongji University, Wanjing Ma/Tongji University

Combination of Deep Reinforcement Learning and Random Forest State Prediction for Traffic Signal Control in a Connected Vehicle Environment (TRBAM-24-02308) - B710

Lin Lyu/Pennsylvania State University, S. Ilgin Guler/Pennsylvania State University, Vikash Gayah/Pennsylvania State University

An Empirical Analysis of Fisheye Camera Intersection Traffic Detector Performance: Assessing the Potential Impacts of Camera Position and Lighting Conditions (TRBAM-24-02359) - B757

Edward Smaglik/Northern Arizona University, Anthony Eschen/Northern Arizona University, Aneesh Khadka/Northern Arizona University, Brendan Russo/Northern Arizona University

(continued)

Traffic Signal Systems Solutions Toolbox: A Case Study from Pennsylvania (TRBAM-24-02401) - B663

Nemanja Dobrota/Kittelton & Associates, Inc., Burak Cesme/Kittelton & Associates, Inc., Stephen Gault/Kittelton & Associates, Inc., Shannon Warchol/Kittelton & Associates, Inc., Rafiur Rahman/Kittelton & Associates, Inc., Nagui Roupail/Kittelton & Associates, Inc.

Exploring the Impact of Traffic Signal Control and Connected and Automated Vehicles on Intersections Safety: A Deep Reinforcement Learning Approach (TRBAM-24-02592) - B767

Amir Hossein Karbasi/McMaster University, Hao Yang/McMaster University, Saiedeh Razavi/McMaster University

Cycle Length Optimization of Isolated Signalized Intersection with Mixed Traffic Condition (TRBAM-24-02620) - B774

Haowen Su/Tongji University, Jing Zhao/Tongji University, Wanjing Ma/Tongji University

Improved Right-Turn-on-Red Volume Estimation Models for Analysis of Signalized Intersection Capacity (TRBAM-24-02664) - B662

A. M. Tahsin Emtenan/CATT Laboratory, Christopher Day/CATT Laboratory, Anuj Sharma/CATT Laboratory, John Shaw/CATT Laboratory, Pat Hawley/CATT Laboratory, Mark Shields/CATT Laboratory, Arya Haghghat/CATT Laboratory

Research on the Coordinated Control Method of Anti-Overflow at Closely-Spaced Intersections Under Oversaturated Conditions (TRBAM-24-02811) - B758

Feng Sun/Shandong University of Technology, Benxing Liu/Shandong University of Technology, Dalong Li/Shandong University of Technology, Fangtong Jiao/Shandong University of Technology, Xiaoqing Wang/Shandong University of Technology, Pengsheng Zhao/Shandong University of Technology

Leveraging Existing Traffic Detections for Network-Level Control Delay and Arrival-on-Green Estimation at Signalized Intersections (TRBAM-24-03176) - B665

Xiaofeng Li/University of Hawai'i at Mānoa Shidler College of Business, Peipei Xu/University of Hawai'i at Mānoa Shidler College of Business, Yao-Jan Wu/University of Hawai'i at Mānoa Shidler College of Business, Hyunsoo Noh/University of Hawai'i at Mānoa Shidler College of Business, Ryan Hatch/University of Hawai'i at Mānoa Shidler College of Business

Quality Assurance for Network-Level Traffic Signal Performance Measurement Derived from Connected Vehicle Data (TRBAM-24-03193) - B655

Xiaofeng Li/University of Hawai'i at Mānoa Shidler College of Business, Peipei Xu/University of Hawai'i at Mānoa Shidler College of Business, Yao-Jan Wu/University of Hawai'i at Mānoa Shidler College of Business, Ryan Hatch/University of Hawai'i at Mānoa Shidler College of Business, Hyunsoo Noh/University of Hawai'i at Mānoa Shidler College of Business

Signal Optimization at an Isolated Intersection Under Cyclic Vehicle Arrivals Using Spatially Sparse Trajectory Data (TRBAM-24-03274) - B770

Lijuan Wan/Hong Kong University of Science and Technology, Wanjing Ma/Hong Kong University of Science and Technology, Hong Lo/Hong Kong University of Science and Technology, Chunhui Yu/Hong Kong University of Science and Technology

Platoon-Aware and One-Stage Estimation of Cyclic Arrival Rates Using License Plate Recognition Data (TRBAM-24-03360) - B768

Chengchuan An/Southeast University, Yang He/Southeast University, Jiawei Lu/Southeast University, Jingxin Xia/Southeast University, Zhendong Oian/Southeast University

Joint Optimization of Phase Sequence and Timing for Deep Reinforcement Learning-Based Traffic Signal Control (TRBAM-24-03385) - B750

Xinben Jia/Southwest Jiaotong University, Ang Ji/Southwest Jiaotong University, Jiayi Huang/Southwest Jiaotong University, Zhanbo Sun/Southwest Jiaotong University

Cycle-Based Adaptive Network Traffic Light Control Using Closed-Loop Online Updating Strategy (TRBAM-24-03424) - B724

Jiarong Yao/Nanyang Technological University, Chaopeng Tan/Nanyang Technological University

Evaluation of the Severity of Deadlock at a Signalized Intersection with Auxiliary Lanes Using Trajectory Data (TRBAM-24-03428) - B772

Shu Chen/Tongji University, Chunhui Yu/Tongji University, Yuehai Hu/Tongji University, Siyuan Yang/Tongji University, Yongli Ren/Tongji University, Wanjing Ma/Tongji University

Enhancing Multi-Intersection Traffic Signal Control Operation Through Deep Reinforcement Learning (TRBAM-24-03581) - B759

Kazi Redwan Shabab/University of Western Ontario, Syed Mostaqim Ali/University of Western Ontario, Mohamed Zaki/University of Western Ontario

Trajectory Based Delay Estimation Under Mixed Traffic Conditions at Signalized Intersection Using Uncrewed Aerial Vehicle Data (TRBAM-24-03687) - B769

Rajesh Chouhan/Sardar Vallabhbhai National Institute of Technology, Surat, Abhi Shah/Sardar Vallabhbhai National Institute of Technology, Surat, Ashish Dhmaniya/Sardar Vallabhbhai National Institute of Technology, Surat, Constantinos Antoniou/Sardar Vallabhbhai National Institute of Technology, Surat, Jia Hu/Sardar Vallabhbhai National Institute of Technology, Surat

A Neural Network Based Modeling for the Multiple Intersections Signal Control System Along Honolulu Nimitz Highway via Learning Error Distribution Shaping (TRBAM-24-03778) - B733

Hong Wang/Oak Ridge National Laboratory, Wan Li/Oak Ridge National Laboratory, Arun Bala Subramaniyan/Oak Ridge National Laboratory, Yiwei Wang/Oak Ridge National Laboratory, Guohui Zhang/Oak Ridge National Laboratory

Integration of Progression Maximization and Delay Minimization Controls for Commuting Arterials

Accommodating Highly Unbalanced Directional Traffic Flows (TRBAM-24-03814) - B775

Yi-Ting Lin/University of Maryland, College Park, Yao Cheng/University of Maryland, College Park, Gang-Len Chang/University of Maryland, College Park

Development and Assessment of Trajectory-Based Arterial Through Arrivals on Red for Arterial Signal

Coordination Performance Evaluation (TRBAM-24-03842) - B685

Jianyuan Xu/University of Nevada, Reno, Zong Tian/University of Nevada, Reno, Aobo Wang/University of Nevada, Reno, Luis Valenzuela/University of Nevada, Reno

Evaluating Safety Performance of Left-Turn Signal Phasing Treatments at the Roadway Level: A Case Study in Utah (TRBAM-24-03858) - B785

Yaobang Gong/University of Maryland, College Park, Kaitai Yang/University of Maryland, College Park, Xianfeng Yang/University of Maryland, College Park

Centralized Real-Time Traffic Signal Control for an Urban Traffic Network Using a Two-Dimensional Genetic Algorithm (TRBAM-24-03896) - B755

Meenu Francis/Indian Institute of Technology, Bhargab Maitra/Indian Institute of Technology

A Faster-Than-Real-Time Method for Signal Timing and Trajectory Optimization in Mixed Autonomy Traffic Streams with White Phase (TRBAM-24-03961) - B752

Ramin Niroumand/North Carolina State University, Leila Hajibabai/North Carolina State University, Ali Hajbabaie/North Carolina State University

Queue Length Estimation and Optimal Vehicle Trajectory Planning Considering Queue Effects at Actuated Traffic Signal Controlled Intersections (TRBAM-24-04040) - B672

Amr Shafik/Virginia Polytechnic Institute, Hesham Rakha/Virginia Polytechnic Institute

Enhancing Traffic Signal Timing Design via the Automated Traffic Signal Performance Measures in the Loop Simulation: A Digital Twin Approach (TRBAM-24-04128) - B740

Swastik Khadka/University of Texas, Arlington, Peirong (Slade) Wang/University of Texas, Arlington, Pengfei (Taylor) Li/University of Texas, Arlington, Stephen Mattingly/University of Texas, Arlington

Automated Intersection Congestion Ranking for Signalized Intersections Using Traffic Signal Events (TRBAM-24-04305) - B730

Peirong (Slade) Wang/University of Texas, Arlington, Swastik Khadka/University of Texas, Arlington, Pengfei (Taylor) Li/University of Texas, Arlington, Qingyan (Ken) Yang/University of Texas, Arlington

A Microsimulation Approach to Investigate Impact of Incorrect Automated Pedestrian Detection on Operations of Signalized Intersections (TRBAM-24-04326) - B687

Slavica Gavric/University of Pittsburgh, Ismet Goksd Erdagi/University of Pittsburgh, Daniel Rodriguez/University of Pittsburgh, Aleksandar Stevanovic/University of Pittsburgh

Comparison of Estimated Cycle Split Failures from High-Resolution Controller Event and Connected Vehicle Trajectory Data (TRBAM-24-04389) - B673

Saumabha Gayen/Purdue University, Enrique Saldivar-Carranza/Purdue University, Darcy Bullock/Purdue University

Impact of Adaptive Traffic Control Implementation Methods on Operations of a Coordinated Network (TRBAM-24-04395) - B677

Ismet Goksd Erdagi/University of Pittsburgh, Slavica Gavric/University of Pittsburgh, Aleksandar Stevanovic/University of Pittsburgh

Toward the Implementation of MP on Traffic Signal Hardware (TRBAM-24-04640) - B711

Raphael Stern/University of Minnesota, Amirhossein Kiani/University of Minnesota, Michael Levin/University of Minnesota

Exploring Current Capabilities of Large Language Models for Use as Signal Timing Virtual Assistants (TRBAM-24-04700) - B652

Souradeep Chattopadhyay/Iowa State University, Hsin-Jung Yang/Iowa State University, Ibne Shihab/Iowa State University, Christopher Day/Iowa State University, David Hurwitz/Iowa State University, Soumik Sarkar/Iowa State University, Anuj Sharma/Iowa State University

(continued)

Predicting the Future Signalization of Traffic-Actuated Signals Using Extreme Gradient Boosting (TRBAM-24-04803) - B762

Kevin Heckmann/University of Kassel, Jannik Budde/University of Kassel, Lena Schneegans/University of Kassel, Robert Hoyer/University of Kassel

Evaluating Changes in Free-Flow Travel Time Between Intersections During Winter Conditions and the Resulting Impact on Signal Coordination Using Vehicle Trajectory Data (TRBAM-24-04956) - B734

Zachary Jerome/University of Michigan, Xingmin Wang/University of Michigan, Zihao Wang/University of Michigan, Danielle Deneau/University of Michigan, Rachel Jones/University of Michigan, Gary Piotrowicz/University of Michigan, Henry Liu/University of Michigan

A Digital Twin-Based Adaptive Traffic Signal Control Framework Under Limited Synchronization Conditions (TRBAM-24-05026) - B722

Hong Zhu/Tongji University, Fengmei Sun/Tongji University, Hao Wu/Tongji University, Zhixian Tang/Tongji University, Keshuang Tang/Tongji University, Chengen Que/Tongji University

Oversaturated Intersections: A Real-World Assessment of Polynomial Fluid Queue Models (TRBAM-24-05249) - B744

Alisa Doll/Arizona State University, Mohammad Abbasi/Arizona State University, Ming Zhao/Arizona State University, Xuesong Zhou/Arizona State University

Is the Surrogate Model Competent for Adaptive Traffic Signal Control Optimization?: A Mixture Density Network Based Surrogate Model for Delay Prediction (TRBAM-24-05588) - B713

Jialong Feng/Tongji University, Zhixian Tang/Tongji University, Hong Zhu/Tongji University, Keshuang Tang/Tongji University, Chaopeng Tan/Tongji University

The Integration of Real-Time Vehicle Trajectories into Actuated Traffic Signals to Improve Local Intersection and Arterial Control (TRBAM-24-05625) - B653

Andalib Shams/Iowa State University, Nemanja Dobrota/Iowa State University, Burak Cesme/Iowa State University, Christopher Day/Iowa State University

Empirical Analysis of Dilemma Zone Using High-Resolution, Event-Based Data (TRBAM-24-05811) - B664

Pramesh Pudasaini/University of Arizona, Henrick Haule/University of Arizona, Yao-Jan Wu/University of Arizona

Data-Driven Approach for Drivers' Decision Prediction in Type-II Dilemma at Signalized Intersection (TRBAM-24-05837) - B735

Ritvik Chauhan/Sardar Vallabhbhai National Institute of Technology, Satish Chandra/Sardar Vallabhbhai National Institute of Technology

A Bus Lane Sharing Strategy to Re-Cluster Vehicles with Various Turning Intentions at Signalized Intersections (TRBAM-24-06028) - B732

Zhen Zhang/Tongji University, Jintao Lai/Tongji University, Zhexi Lian/Tongji University, Xiaoguang Yang/Tongji University

Decision-Making Framework for Feasibility in Deploying Emerging Adaptive Traffic Control Systems (TRBAM-24-06181) - B654

Xi Zhang/The University of Arizona, Xiaofeng Li/The University of Arizona, Yao-Jan Wu/The University of Arizona

Enhancing actuated signal control policies with optimal speed advisory considering real-time queue lengths (TRBAM-24-06268) - B745

Dohyeon Kim/University of Seoul, Jihye Byun/University of Seoul, Ziyuan Pu/University of Seoul, Seunghyeon Lee/University of Seoul

Privacy-preserving collaborative optimization of traffic signals based on cross-company connected vehicle data (TRBAM-24-06307) - B714

Chaopeng Tan/National University of Singapore, Kaidi Yang/National University of Singapore

Revisiting the Determination of Cycle Length and Phase Splits in The Context of Coordinated Actuated Control (TRBAM-24-06411) - B675

Aobo Wang/University of Nevada, Reno, Jianyuan Xu/University of Nevada, Reno, Suoyao Feng/University of Nevada, Reno, Zong Tian/University of Nevada, Reno

2233



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Traffic Flow Theory, Part 1: Connected and Autonomous Vehicles (Part 2, Session 2234; Part 3, Session 4068; Part 4, Session 4069)

Raphael Stern, University of Minnesota, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

(continued)

Impact of Adaptive Cruise Control on Highway Traffic Breakdown and Ramp Metering (TRBAM-24-03087) - B703

Hwapyeong Yu/Korea Advanced Institute of Science and Technology (KAIST), Hwasoo Yeo/Korea Advanced Institute of Science and Technology (KAIST)

Influence of Connected and Autonomous Vehicles Platoon Characteristics on Fundamental Diagram and Stability Under Mixed Traffic Flow (TRBAM-24-00353) - B688

Yangsheng Jiang/Southwest Jiaotong University, Fangyi Zhu/Southwest Jiaotong University, Qiufan Gu/Southwest Jiaotong University, Yunxia Wu/Southwest Jiaotong University, Zhihong Yao/Southwest Jiaotong University

A New Control Strategy of Connected and Automated Vehicles Platoon for Mitigating Traffic Oscillation in a Two-Lane Highway (TRBAM-24-02097) - B678

Yangsheng Jiang/Southwest Jiaotong University, Hongwei Cong/Southwest Jiaotong University, Yi Wang/Southwest Jiaotong University, Hongwu Li/Southwest Jiaotong University, Zhihong Yao/Southwest Jiaotong University

An Approach for Optimizing Acceleration in Connected and Automated Vehicles (TRBAM-24-04751) - B705

Filippos Tzortoglou/Cornell University, Dionysios Theodosis/Cornell University, Andreas Malikopoulos/Cornell University

A Map-Free, Efficient Trajectory Prediction Model for Autonomous Driving (TRBAM-24-03619) - B699

Haicheng Liao/University of Macau, Ruru Tang/University of Macau, Xuelin Li/University of Macau, Zhenning Li/University of Macau, Xuesong Wang/University of Macau, Wenyu Li/University of Macau, Kai Zhang/University of Macau, Chengzhong Xu/University of Macau

Difference in Commercial Adaptive Cruise Control Car-Following Behavior and How to Overcome Calibration Challenges (TRBAM-24-05668) - B695

Garyoung Lee/Georgia Institute of Technology, Jorge A. Laval/Georgia Institute of Technology, Tu Xu/Georgia Institute of Technology, Danjue Chen/Georgia Institute of Technology

Connected and Automated Vehicle Gap Setting Control Strategy for Freeway Lane-Drop Bottlenecks (TRBAM-24-03270) - B693

Sungyong Chung/Seoul National University, Dongju Ka/Seoul National University, Yongju Kim/Seoul National University, Chungwon Lee/Seoul National University

A General Hierarchical Control System to Model Adaptive Cruise Control Systems: An Empirical Study (TRBAM-24-02524) - B636

Ruan Tiancheng/Southeast University, Yujia Chen/Southeast University, Hao Wang/Southeast University, Xiaopeng Li/Southeast University

Human-Machine Interaction in Automated Vehicles: Reducing Voluntary Driver Intervention (TRBAM-24-01105) - B701

Xinzhi Zhong/University of Wisconsin, Madison, Yang Zhou/University of Wisconsin, Madison, Varshini Kamaraj/University of Wisconsin, Madison, Zhenhao Zhou/University of Wisconsin, Madison, Wissam Kontar/University of Wisconsin, Madison, Mariliani Hernández/University of Wisconsin, Madison, Dan Negrut/University of Wisconsin, Madison, John Lee/University of Wisconsin, Madison, Soyoung Ahn/University of Wisconsin, Madison

A Two-stage Stochastic Programming Model for Connected Vehicle-Based Real-time Traffic Signal Control (TRBAM-24-06290) - B723

Chaopeng Tan/National University of Singapore, Kaidi Yang/National University of Singapore

Connected Automated Vehicles as Regulators of Mixed Traffic: Optimal Speed and Density in Signal-Free Networks (TRBAM-24-02910) - B692

Mahyar Amirgholy/Kennesaw State University, Mehdi Nourinejad/Kennesaw State University

Impacts of Automated Vehicles on Human Drivers Following Them: A Focus on Distance and Time Headway (TRBAM-24-04241) - B689

Yiru Jiao/Delft University of Technology: Technische Universiteit Delft, Simeon Calvert/Delft University of Technology: Technische Universiteit Delft, Hans van Lint/Delft University of Technology: Technische Universiteit Delft

Lane-Adaptive Variable Speed Limit Control Strategy for Mitigating Merge Bottlenecks: A Deep Reinforcement Learning Approach (TRBAM-24-04703) - B646

Zhe Han/Southeast University, Yu Han/Southeast University, Xinge Wei/Southeast University, Fan Ding/Southeast University, Jiankun Peng/Southeast University

An Optimal Control Strategy of Connected and Automated Vehicle Behaviors for Eliminating Multiple Consecutive Oscillations (TRBAM-24-05932) - B659

Shunchao Wang/Southeast University, Bingtong Wang/Southeast University, Jingcai Yu/Southeast University, Jingfeng Ma/Southeast University, Zhibin Li/Southeast University

A Cooperative Jam-Absorption Driving Strategy for Eliminating Multiple Oscillations at Fixed Bottlenecks in a Connected and Automated Environment (TRBAM-24-06475) - B669

Shunchao Wang/Southeast University, Bingtong Wang/Southeast University, Jingfeng Ma/Southeast University, Jingcai Yu/Southeast University, Zhibin Li/Southeast University

(continued)

Investigating Traffic Flow Stability: The Role of Connected and Autonomous Vehicle Market Penetration, Spatial Distribution, and V2X Communication (TRBAM-24-01131) - B691

Haozhan Ma/Southeast University, Linheng Li/Southeast University, Xu Qu/Southeast University, Bin Ran/Southeast University, Haozhan Ma/Southeast University

A Platoon Stability Control Approach in Mixed Autonomy Traffic Environment (TRBAM-24-02611) - B709

Ruru Tang/University of Macau, Zhenning Li/University of Macau

Traffic Accident Risk Assessment for Different Car-Following Modes of Human-Driven and Connected and Automated Vehicles on Freeways (TRBAM-24-03576) - B742

Mengya Zhang/Tongji University, Mengya Zhang/Tongji University, Xiaoguang Yang/Tongji University, Matsunaka Ryoji/Tongji University, Nishigaki Tomoki/Tongji University

Adaptive Cooperative Traffic Control of a Multi-region Urban Network with a Ring Expressway (TRBAM-24-06442) - B686

Can Chen/Hong Kong Polytechnic University, Yunping Huang/Hong Kong Polytechnic University, Renxin Zhong/Hong Kong Polytechnic University, Shu-Chien Hsu/Hong Kong Polytechnic University

Longitudinal Control Strategies Based on Safety Potential Field for Autonomous Vehicles Considering Road Accident Risk (TRBAM-24-02176) - B702

Yichang Shao/Southeast University, Yuhan Zhang/Southeast University, Wei Ye/Southeast University, Yueru Xu/Southeast University, Xiaomeng Shi/Southeast University, Zhirui Ye/Southeast University

Cooperative Adaptive Cruise Platoon Controller Design Considering Switching Control and Stability (TRBAM-24-02526) - B637

Ruan Tiancheng/Southeast University, Chen Wang/Southeast University, Hao Wang/Southeast University, Xiaopeng Li/Southeast University

Investigating the Impact of Automated Vehicles' Takeover Behavior on the Stability of Heterogeneous Traffic Flow (TRBAM-24-03848) - B704

Changshuai Wang/Southeast University, Weilin Ren/Southeast University, Chengcheng Xu/Southeast University, Hao Tong/Southeast University, Chang Peng/Southeast University

Modeling Commercial Adaptive Cruise Control on Multi-Lane Facilities by Incorporating Receiving Lane-Change Car Following (TRBAM-24-04607) - B694

Mingyuan Yang/University of California, Berkeley, Mohamed Badhrudeen Mohamed Rawoof/University of California, Berkeley, X. David Kan/University of California, Berkeley, Kemal Ulas Yagantekin/University of California, Berkeley, Xiao-Yun Lu/University of California, Berkeley

2234



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Traffic Flow Theory, Part 2: Microscopic Traffic Models and Trajectory Analysis (Part 1, Session 2233; Part 3, Session 4068; Part 4, Session 4069)

Alexandra Kondyli, University of Kansas, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

Analyzing Stability in a Platoon of Vehicles with Reaction Time Delay: Implications for Transportation Systems (TRBAM-24-00514) - B696

Shimaossadat Mousavi/Swiss Federal Institute of Technology (ETH Zurich), Somayeh Bahrami/Swiss Federal Institute of Technology (ETH Zurich), Anastasios Kouvelas/Swiss Federal Institute of Technology (ETH Zurich)

A Simple Trajectory Reconstruction Method Based on Polynomial Curve Fitting (TRBAM-24-05479) - B668

Yue Deng/Southeast University, Qi Cao/Southeast University, Gang Ren/Southeast University, Hua Song/Southeast University, Jingfeng Ma/Southeast University

Developing Speed Adjustment Information Devices to Promote Smooth Merging Behavior at Merging Sections on Expressways (TRBAM-24-02986) - B698

Toru Hagiwara/Hokkaido University, Sho Takahashi/Hokkaido University, Chinami Fukui/Hokkaido University

Rational Artificial Intelligence Car-Following Model Enhanced by Reality (TRBAM-24-04093) - B712

Tianyi Li/University of Minnesota, Alexander Halatsis/University of Minnesota, Raphael Stern/University of Minnesota

Bi-Scale, Car-Following Model Calibration for Corridor Based on Trajectory (TRBAM-24-03863) - B753

Keke Long/University of Wisconsin, Madison, Xiaopeng (Shaw) Li/University of Wisconsin, Madison, Zhiwei Chen/University of Wisconsin, Madison, Zhaohui Liang/University of Wisconsin, Madison, Chengyuan Ma/University of Wisconsin, Madison

(continued)

Modeling and Stability Analyses of the General Connected Automated Vehicle Platoon with Multiple Time Delays (TRBAM-24-02866) - B638

Tiancheng Ruan/Southeast University, Ruan Tiancheng/Southeast University, Hao Wang/Southeast University, Xiaopeng Li/Southeast University

Investigating Conflicts, Lane Changes, and Platoons in Relation to Local Densities Along a Congested Freeway Weaving Section (TRBAM-24-03331) - B719

Sharika Hegde/Northwestern University, Hani Mahmassani/Northwestern University, Yanlin Zhang/Northwestern University, Alireza Talebpour/Northwestern University, Samer Hamdar/Northwestern University

Driving Pattern Interpretation Based on Action Phases Clustering (TRBAM-24-03282) - B679

Xue Yao/Delft University of Technology, Simeon Calvert/Delft University of Technology, Serge Hoogendoorn/Delft University of Technology

Incorporating Human Factors in Car-Following Models: A Model Credibility Assessment Framework (TRBAM-24-04370) - B765

Vincenzo Punzo/University of Naples Federico II, Davide Iannelli/University of Naples Federico II, Andrea Saltelli/University of Naples Federico II, Marcello Montanino/University of Naples Federico II

Enhancing Car-Following Model for Adaptive Cruise Control Vehicles Using Improved Intelligent Driver Model (TRBAM-24-00319) - B706

Jun Bai/Central South University, Jaeyoung Lee/Central South University, Suyi Mao/Central South University

A Deep Reinforcement Learning-Based Approach for Autonomous Lane-Changing Velocity Control in Mixed Flow of Vehicle Group Level (TRBAM-24-01120) - B635

Zhe Wang/Central South University, Helai Huang/Central South University, Mohamed Abdel-Aty/Central South University, Jinjun Tang/Central South University

A Maneuver Indicator and Ensemble Learning-Based Risky Driver Recognition Approach for Highway Merging Areas (TRBAM-24-01306) - B707

XINGLIANG LIU/Chongqing Jiaotong University, Shuang Deng/Chongqing Jiaotong University, Tangzhi Liu/Chongqing Jiaotong University, Tong Liu/Chongqing Jiaotong University, Song Wang/Chongqing Jiaotong University

Enhancing Lane-Changing Trajectory Prediction on Highways: A Heuristic Attention-Based Encoder-Decoder Model (TRBAM-24-01808) - B697

Xue Xiao/Tongji University, Bo Peng/Tongji University, Yingda Chen/Tongji University, Xinyi Gu/Tongji University, Keping Li/Tongji University

An Empirical Analysis of Discretionary Lane Changes on Freeways (TRBAM-24-02983) - B760

Ang Ji/Southwest Jiaotong University, Yu Zhao/Southwest Jiaotong University, Ruiqi Wang/Southwest Jiaotong University, Zhanbo Sun/Southwest Jiaotong University

Lane-Changing Intention Prediction Induced by Oppressing Sensation When the Leading Vehicle Is a Truck (TRBAM-24-03074) - B725

Youyi Tang/Changsha University of Science and Technology, Lu Xing/Changsha University of Science and Technology, Xin PEI/Changsha University of Science and Technology, Danya Yao/Changsha University of Science and Technology, Wang Xiang/Changsha University of Science and Technology

Modified Deep Deterministic Policy Gradient Car-Following Model with a Real-World Human Driving Experience with the CARLA Simulator (TRBAM-24-03704) - B763

Dianzhao Li/Technische Universität Dresden, Ostap Okhrin/Technische Universität Dresden

Improving Truck Merging at Ramps in a Mixed Traffic Environment: A Multi-Human-in-the-Loop Approach (TRBAM-24-05029) - B674

Xuanpeng Zhao/University of California, Riverside, Xishun Liao/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Kanok Boriboonsomsin/University of California, Riverside, Matthew Barth/University of California, Riverside

Incorporating Roadside Traffic Data to Predict Lane Change Behaviors Within Weaving Segment for Automated Vehicles (TRBAM-24-01943) - B783

Qingjie Bian/Tongji University, Ling Wang/Tongji University, Zicheng Su/Tongji University, Wei Cui/Tongji University, Wanjing Ma/Tongji University

Classification of Lane-Change Behaviors Considering the Impact on Traffic Flow (TRBAM-24-03546) - B715

Yasuhiro Shiomi/Ritsumeikan University, Yuya Hattori/Ritsumeikan University, Mariko Nakai/Ritsumeikan University, Victor Knoop/Ritsumeikan University

Kinematics-Aware, Multi-Graph Attention Network for Heterogeneous Trajectory Prediction (TRBAM-24-04186) - B764

Zihao Sheng/University of Wisconsin, Madison, Zilin Huang/University of Wisconsin, Madison, Keke Long/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison

(continued)

Deep Learning–Based Vehicle Re-Identification Using Temporal Information in Urban Traffic (TRBAM-24-04201) - B754

Yura Tak/Ecole Polytechnique Federale de Lausanne (EPFL), Robert Fonod/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Analyzing Interaction Influence Patterns of Lane-Changing Vehicles on Following Vehicles Based on Trajectory Data (TRBAM-24-02255) - B708

Cailin Lei/Tongji University, Chongren Sun/Tongji University, Yuxiong Ji/Tongji University, Siby Samuel/Tongji University, Yuchuan Du/Tongji University

2235



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Transportation Safety Management Systems from Start to Finish

Frank Gross, VHB, presiding

Jaeyoung Lee, Central South University, presiding

Stephanie Malinoff, University of Minnesota, Twin Cities, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems

More research on safety management from a comprehensive, systems approach is desirable. This poster session will allow you to interact one-on-one with the authors to discuss a broad range of safety management topics from the overall roadway safety management process and safe system approach to specific data sources and analysis methods to investigate transportation safety. Topics also cover all surface transportation modes from pedestrians and bicyclists to motorized vehicles. These papers cover the 4Es of safety (engineering, education, enforcement, and EMS) and touch on various safety issues and opportunities related to infrastructure, road user behavior, socioeconomics, and advanced technology (e.g., connected/automated vehicles).

Identifying Corridor-Level Safety Improvements for Urban and Suburban Arterials in Florida Within a Safe System Framework (TRBAM-24-00048) - B553

John McCombs/University of Central Florida, Haitham Al-Deek/University of Central Florida, Adrian Sandt/University of Central Florida, Nizam Uddin/University of Central Florida, Grady Carrick/University of Central Florida

Safety Investigation of Distracted Driving Crashes in Kentucky Pre- and Post-COVID-19 Pandemic (TRBAM-24-00205) - B563

Arunabha Banerjee/Western Kentucky University, William Pemberton/Western Kentucky University, Tyaha Woodard/Western Kentucky University, Benjamin McElroy/Western Kentucky University, Bharat Kumar Pathivada/Western Kentucky University, Kirolos Haleem/Western Kentucky University

Hazards-Based Duration Time Model with Priorities Considering Unobserved Heterogeneity Using Real-Time Traffic and Weather Big Data (TRBAM-24-03068) - B572

Songha Lee/Hanyang University, Juneyoung Park/Hanyang University, Mohamed Abdel-Aty/Hanyang University

Studying Crash Characteristics and Contributing Factors Using Historical Crash Data to Enhance Senior Driver Safety (TRBAM-24-03168) - B554

Thomas Cabe/Georgia Institute of Technology, Yi-Chang Tsai/Georgia Institute of Technology

Identifying Factors Contributing to the Severity of Injuries for the Intersection-Related Crashes in New Jersey (TRBAM-24-05730) - B560

Deep Patel/Rowan University, Ruqaya Alfaris/Rowan University, Mohammad Jalayer/Rowan University

Disparities in Roadway Safety: Exploring Direct and Indirect Pathways Contributing to Disparities in Non-Motorist Crashes in Houston, Texas (TRBAM-24-00322) - B562

Chunwu Zhu/Texas A&M University, College Station, Bahar Dadashova/Texas A&M University, College Station, Chanam Lee/Texas A&M University, College Station, Xinyue Ye/Texas A&M University, College Station, Charles Brown/Texas A&M University, College Station

Investigating the Impact of the COVID-19 Pandemic on Traffic Crash Injury Outcomes Among Different Demographic Groups (TRBAM-24-00688) - B600

Faria Raha/Northern Arizona University, Brendan Russo/Northern Arizona University, Alyssa Ryan/Northern Arizona University

Prioritizing Safety-Vulnerable Interrupted Road Facilities for Mixed Car-Following Situations: Methodology and Application (TRBAM-24-00694) - B582

Sangjae Lee/Hanyang University, Young Jo/Hanyang University, Juneyoung Park/Hanyang University, Cheol Oh/Hanyang University

(continued)

Comprehensive Investigation of Severe Distraction-Related Crashes Along Kentucky's Rural Two-Lane Roads (TRBAM-24-01057) - B564

Arunabha Banerjee/Western Kentucky University, Bharat Kumar Pathivada/Western Kentucky University, Dylan Justice/Western Kentucky University, Kirolos Haleem/Western Kentucky University

Developing Risk-Informed Speed Limits Against Single-Vehicle Crashes by Exploiting an Augmented Reliability Problem with Multi-Fidelity Enhancement (TRBAM-24-01069) - B570

Ziluo Xiong/Colorado State University, Suren Chen/Colorado State University

Mass-Based, Omni-Directional Risk Indicator: A Novel Approach for Quantifying Risk in Multi-Participant, Two-Dimensional Traffic Scenarios (TRBAM-24-01136) - B624

Haozhan Ma/Southeast University, Linheng Li/Southeast University, Bocheng An/Southeast University, Ziwei Yi/Southeast University, Xu Qu/Southeast University, Bin Ran/Southeast University, Haozhan Ma/Southeast University

Multi-Agent Trajectory Prediction at Unsignalized Intersections: An Improved Generative Adversarial Network Accounting for Collision Avoidance Behaviors (TRBAM-24-01471) - B592

Lei Zhao/Southeast University, Sixuan Xu/Southeast University, wei zhou/Southeast University, Yuzhi Chen/Southeast University, Chen Wang/Southeast University

TrafficSafetyGPT: Tuning a Pre-Trained Large Language Model to a Domain-Specific Expert in Transportation Safety (TRBAM-24-01497) - B573

Ou Zheng/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Dongdong Wang/University of Central Florida, Chenzhu Wang/University of Central Florida, Shengxuan Ding/University of Central Florida

Port-Locate Area Safety Analysis with Spatial Heterogeneous Based on Regional Characteristics (TRBAM-24-01876) - B583

Nuri Park/Hanyang University, Hyeonsoo Kim/Hanyang University, Hojae Kim/Hanyang University, Juneyoung Park/Hanyang University, Chunho Yeom/Hanyang University

Safety Considerations for Setting Variable Speed Limits on Freeways (TRBAM-24-02247) - B574

Tarek Hasan/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida

Drawing the Lines on Safety Priorities: The How and Why of Developing the District of Columbia High Injury Network (TRBAM-24-02502) - B601

Alexander Garbier/Kittelson & Associates, Inc., Caitlin Mildner/Kittelson & Associates, Inc., Alek Pochowski/Kittelson & Associates, Inc., Christine Mayeur/Kittelson & Associates, Inc.

Driving Risk Field Modeling Based Trajectory Planning Under Mixed Autonomy Environment (TRBAM-24-02627) - B593

Ruru Tang/University of Macau, Zhenning Li/University of Macau

Quantifying Uncertainty in Higher-Level Automated Vehicle Crashes: The Role of Disengagements, Safety Drivers, and Behaviors of Surrounding Drivers (TRBAM-24-02656) - B602

Nastaran Moradloo/University of Tennessee, Iman Mahdinia/University of Tennessee, Asad Khattak/University of Tennessee

Digital Twin Technology Enabled Proactive Safety Application for Vulnerable Road Users: A Real-World Case Study (TRBAM-24-02720) - B604

Erik Rúa/University of Vigo: Universidade de Vigo, Kazi Hassan Shakib/University of Vigo: Universidade de Vigo, Sagar Dasgupta/University of Vigo: Universidade de Vigo, Mizanur Rahman/University of Vigo: Universidade de Vigo, Steven Jones/University of Vigo: Universidade de Vigo

Safety Effectiveness of Temporary Rumble Strips in Highway Work Zones: Short-Term Versus Long-Term Temporary Rumble Strips (TRBAM-24-02791) - B605

Sungyop Kim/University of Missouri, Kansas City, Henry Brown/University of Missouri, Kansas City, Carlos Sun/University of Missouri, Kansas City, Praveen Edara/University of Missouri, Kansas City

Exploring the Long-Term Effects of the COVID-19 Pandemic on Crash Occurrence (TRBAM-24-02893) - B606

Ennis Marshall/University of Maine, Mohammadali Shirazi/University of Maine, John Ivan/University of Maine

Comparability of Automated Vehicle Crash Databases (TRBAM-24-02913) - B608

Noah Goodall/Virginia Department of Transportation

Analyzing the Relationship Among the Built Environment, Road Encroachment, and Road Safety: A Comparative Study (TRBAM-24-02930) - B622

Mahanaz Faiza/Islamic University of Technology, Sadia Sama/Islamic University of Technology, Chowdhury Jemeem Jaanvi/Islamic University of Technology, Ashrar Washi/Islamic University of Technology, Moinul Hossain/Islamic University of Technology, Md Asif Raihan/Islamic University of Technology, Mohammed Quddus/Islamic University of Technology

Revisiting the Roles of Speeds in Traffic Crashes: A Geographically Weighted Neural Network Approach (TRBAM-24-02956) - B610

Zihe Zhang/University of Alabama, Chenxuan Yang/University of Alabama, Jun Liu/University of Alabama, Cong Chen/University of Alabama, Steven Jones/University of Alabama

(continued)

COVID-19 and Roadway Safety: Review of Studies, Lessons Learned, and Research Gaps (TRBAM-24-02963) - B607

Ennis Marshall/University of Maine, Mohammadali Shirazi/University of Maine, John Ivan/University of Maine

Connected Vehicle Event Data and Traffic Crashes: A Statewide Correlation Analysis (TRBAM-24-03029) - B611

Sunday Okafor/University of Alabama, Tuscaloosa, Praveena Penmetsa/University of Alabama, Tuscaloosa, Vamshi Annimalla/University of Alabama, Tuscaloosa, Elsa Tedla/University of Alabama, Tuscaloosa, Alexander Hainen/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

Injury Risk by Body Regions in Serious Motor Vehicle Crashes: A Data-Driven Approach Utilizing Police–Hospital Linked Data and Random Parameters Logit Models (TRBAM-24-03261) - B609

Khalid Alzaffin/Queensland University of Technology, Sherrie-Anne Kaye/Queensland University of Technology, Angela Watson/Queensland University of Technology, Md. Mazharul Haque/Queensland University of Technology

Analysis of Factors Affecting Traffic Safety Risks in National Trunk Highway System: Using Interpretable Machine Learning Framework (TRBAM-24-03351) - B594

Haiyi Yang/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Sen Luan/Beijing University of Technology, Hang Qi/Beijing University of Technology, Yujia Xiang/Beijing University of Technology

An Evaluation of the Safety and Environmental Impacts of Microcars (TRBAM-24-03410) - B613

Hesham Elmasry/University of Alberta, Mohamed El Esawey/University of Alberta, Ahmed Osama/University of Alberta

Extracting Traffic Crash Information from Imbalanced, Unstructured Traffic Crash Description Texts Using a Text Classification Modeling Technique (TRBAM-24-03694) - B614

Younghoon Seo/AICT: Advanced Institutes of Convergence Technology, Jihyeok Park/AICT: Advanced Institutes of Convergence Technology, Gyungtaek Oh/AICT: Advanced Institutes of Convergence Technology, Hyungjoo Kim/AICT: Advanced Institutes of Convergence Technology, Chiwoo Roh/AICT: Advanced Institutes of Convergence Technology, Jia Hu/AICT: Advanced Institutes of Convergence Technology, Jaehyun So/AICT: Advanced Institutes of Convergence Technology

How Do Environmental and Road Factors Impact Automated Vehicle (SAE Level 2) Crash Results?: A Network and Coupling Analysis (TRBAM-24-03775) - B615

Shi Dong/Chang'an University, Zhiwei Cui/Chang'an University, Daniel(Jian) Sun/Chang'an University, Liming Ye/Chang'an University, Shengxuan Ding/Chang'an University

Assuring the Main Factors of Traffic Crashes: A Bibliometric Review of Literature from 2010 to 2022 (TRBAM-24-03846) - B584

Joonho Park/Ajou University, Juyeong Kim/Ajou University, Haneul Park/Ajou University, Jinsu Yoon/Ajou University, Juneyoung Park/Ajou University, Tiantian CHEN/Ajou University, Changju Lee/Ajou University, Jaehyun So/Ajou University

A Systematic Review on Safe System Approach and Its Applications in Highway Safety (TRBAM-24-04412) - B617

Md Nasim Khan/Texas State University, Subasish Das/Texas State University

Assessing Regional Road Traffic Safety in Sweden Through Dynamic Panel Data Analysis: Influence of the Planned Innovative Policies and the Unplanned COVID-19 Pandemic (TRBAM-24-04418) - B618

Qikang Zheng/Southeast University, Fariya Sharmeen/Southeast University

Optimal Speed Limit Control for Network Mobility and Safety: A Twin-Delayed Deep Deterministic Policy Gradient Approach (TRBAM-24-04451) - B619

Fatima Afifah/University of Central Florida, Zhaomiao Guo/University of Central Florida

Using Empirical Bayes Estimation Approach to Quantify the Abnormality of Traffic Conditions During the COVID-19 Pandemic (TRBAM-24-04693) - B620

Tumlumbe Juliana Chengula/South Carolina State University, Judith Mwakalonge/South Carolina State University, Gurcan Comert/South Carolina State University, Saidi Siuhi/South Carolina State University, Judy Perkins/South Carolina State University

The Influence of Roadway Characteristics and Built Environment on the Extent of Overspeeding: An Exploration Using Mobile Automated Traffic Camera Data (TRBAM-24-04709) - B621

Boniphace Kutela/Texas A&M Transportation Institute, Frank Ngeni/Texas A&M Transportation Institute, Cuthbert Ruseruka/Texas A&M Transportation Institute, Tumlumbe Juliana Chengula/Texas A&M Transportation Institute, Norris Novat/Texas A&M Transportation Institute, Hellen Shita/Texas A&M Transportation Institute, Abdallah Kinero/Texas A&M Transportation Institute

Modeling the Heterogeneities of Risky Driving Behaviors in Taxi-Involved Severities (TRBAM-24-04734) - B625

Jingfeng Ma/Southeast University, Gang Ren/Southeast University, Shunchao Wang/Southeast University, Jingcai Yu/Southeast University, Bingtong Wang/Southeast University

Exploring How Urban Form, Demographics, and Disadvantaged Communities Are Linked with Pedestrian and Bicycle Safety (TRBAM-24-04785) - B603

A. Latif Patwary/University of Tennessee, Asad Khattak/University of Tennessee

(continued)

Estimating the Effect of Operational Safety Countermeasures via Risk-Based Safety Management Tools (TRBAM-24-04854) - B616

Raul Pineda-Mendez/Kimley-Horn and Associates, Inc., Mario Romero/Kimley-Horn and Associates, Inc., Andrew Tarko/Kimley-Horn and Associates, Inc.

Safety Assessment of Automated Vehicle Driving Logics Under Mixed Traffic Using a Real-Time Crash Prediction Model (TRBAM-24-04924) - B623

Sultana Rajia/Tokyo Institute of Technology, Yasunori Muromachi/Tokyo Institute of Technology, Moinul Hossain/Tokyo Institute of Technology

Assessing the Crash Characteristics Associated with Female Drivers at Different Life Stages (TRBAM-24-05324) - B612

Olga Bredikhina/Alabama Transportation Institute, Riffat Islam/Alabama Transportation Institute, Emmanuel Adanu/Alabama Transportation Institute, Steven Jones/Alabama Transportation Institute

Factors Determining a Traffic Crash to Be Within or Outside of the "Golden Hour" (TRBAM-24-05342) - B626

Sumon Mojumder/University of Kansas, Steven Schrock/University of Kansas

A Spatial Analysis of Traffic, Speeding, and Proximity to Critical Facilities: A Case Study in the State of Florida (TRBAM-24-05521) - B627

SAMUEL TAKYI/Florida A&M University-Florida State University, Richard Antwi/Florida A&M University-Florida State University, Mohammadreza Koloushani/Florida A&M University-Florida State University, Eren Ozguven/Florida A&M University-Florida State University

Motorcycling in Middle Age and Beyond: A Review of the Characteristics, Behaviors, and Crash Outcomes of Riders Ages 40 and Older (TRBAM-24-05539) - B628

Siwon Jang/USF Center for Urban Transportation Research, Victoria Salow/USF Center for Urban Transportation Research, Chanyoung Lee/USF Center for Urban Transportation Research, Lisette Koessick/USF Center for Urban Transportation Research

Development of a Novel Real-Time Road Safety Evaluation System (TRBAM-24-05833) - B629

Yu Wu/McMaster University, Hao Yang/McMaster University, Harith Abdulsattar/McMaster University

Assessment of Motorized Two-Wheeler Riders' Perceptions of Road Safety and Infrastructure Demands in Mixed Traffic Conditions Using Machine Learning Techniques (TRBAM-24-05875) - B630

TEJAS SHARMA/Indian Institute of Technology, Kharagpur, SNEHIL VIJAYVARGIYA/Indian Institute of Technology, Kharagpur, AAYUSH VERMA/Indian Institute of Technology, Kharagpur, BALASAHEB MULE/Indian Institute of Technology, Kharagpur, Madhumita Paul/Indian Institute of Technology, Kharagpur

Does the Left Turn Calming Program Work in New York City?: A Difference-in-Differences Approach (TRBAM-24-06024) - B631

Hongtai Yang/Southwest Jiaotong University School of Transportation and Logistics, Shanlan Sun/Southwest Jiaotong University School of Transportation and Logistics, Yicheng Song/Southwest Jiaotong University School of Transportation and Logistics, Guocong Zhai/Southwest Jiaotong University School of Transportation and Logistics

Quantification of Safety Improvements and Human-Machine Trade-Offs in the Transition to Automated Driving (TRBAM-24-06058) - B632

Song Wang/University of Cincinnati, Zhixia Li/University of Cincinnati

Real-Time Conflict Prediction: Trajectory Data-Driven Approach Incorporating Variable Interaction and Pre-Screening (TRBAM-24-00080) - B633

Dan Wu/Central South University, Jaeyoung Lee/Central South University, Ye Li/Central South University

2236



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

School Transportation and Planning Research

Joy Davis, Institute for Transportation Research and Education, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems

Based on the School Trip Properties of Primary School Walking Accessibility Measure and School Travel Research (TRBAM-24-01449) - B542

Baohong He/Kunming University of Science and Technology, M.S. Guo/Kunming University of Science and Technology

Analysis of Severity Outcomes for School Zone Crashes with an Equity Lens: A Random Parameters Modeling Approach (TRBAM-24-01582) - B540

Ahmed Farid/California Polytechnic State University, San Luis Obispo, Emily Lin/California Polytechnic State University, San Luis Obispo, Anurag Pande/California Polytechnic State University, San Luis Obispo

(continued)

A Data-Driven Approach to Develop Master Plan to Prioritize Schools for Safe Routes to School Program (TRBAM-24-02363) - B541

In Je Lee/University of Florida, Shraddha Sagar/University of Florida, Nithin Agarwal/University of Florida, Sivaramakrishnan Srinivasan/University of Florida, Ruth Steiner/University of Florida

Employee Parents Time Trade-Offs: A Study on the Impact of School-Age Children's Travel Mode Choices (TRBAM-24-03155) - B543

M.S. Guo/Kunming University of Science and Technology, Baohong He/Kunming University of Science and Technology

Investigating Crashes Occurred at School Zones Using Random Parameter Ordered Probit Model (TRBAM-24-03757) - B544

Subasish Das/Texas State University, Monire Jafari/Texas State University, Reuben Tamakloe/Texas State University

A National Survey on the Effect of the COVID-19 Pandemic on School Travel in the United States: Parents' Perspective (TRBAM-24-05404) - B550

Hannah Musau/South Carolina State University, Judith Mwakalonge/South Carolina State University, Gurcan Comert/South Carolina State University, Saidi Siuhi/South Carolina State University

Evaluating California's Active Transportation Program: The Safety Benefits of Safe Routes and Crossings to School Projects in Santa Cruz, California (TRBAM-24-06053) - B551

Negar Ahangarfabrik/San Diego State University, Megan Honey/San Diego State University, Madison R.E. Swayne/San Diego State University, Bruce Appleyard/San Diego State University, Mario Carbajal/San Diego State University

Severity Analysis of Vehicle-Pedestrian/Bike Crashes in the School Buffer Zones: Investigating Unobserved Heterogeneity and Spatial Instability (TRBAM-24-06499) - B552

Vahid Bahrami/Wayne State University, Mohamed Ahmed/Wayne State University, Steven Lavrenz/Wayne State University

2237



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Automated Enforcement and Traffic Crash Investigations

Nicole Oneyear, Federal Highway Administration (FHWA), presiding

Grady Carrick, Enforcement Engineering, Inc., presiding

Sponsored By Standing Committee on Traffic Law Enforcement

Red Light Violations and Crashes: An Analytical Approach Toward Safer Intersections (TRBAM-24-04790) - B510

Deep Patel/Rowan University, Mohammad Jalayer/Rowan University

Assessing the Impact of Fixed Speed Cameras on Speeding Behavior and Crashes: A Longitudinal Study in New York City (TRBAM-24-04517) - B511

Jingqin Gao/New York University, Di Yang/New York University, Chuan Xu/New York University, Kaan Ozbay/New York University, Smrithi Sharma/New York University

Investigation of Discrepancies in South Carolina Traffic Collision Forms (TRBAM-24-02115) - B512

Jackson Wegmet/University of Nebraska, Lincoln, Nathan Huynh/University of Nebraska, Lincoln, Luu Le/University of Nebraska, Lincoln, Hai Duong/University of Nebraska, Lincoln, Minh Chu/University of Nebraska, Lincoln, Seyedmahyar Madarshahian/University of Nebraska, Lincoln, Chowdhury Siddiqui/University of Nebraska, Lincoln

Effectiveness of Red Light Cameras in Lafayette (TRBAM-24-02992) - B514

Farooq Azam Khanzada/University of Louisiana, Lafayette, Xiaoduan Sun/University of Louisiana, Lafayette, Julius Codjoe/University of Louisiana, Lafayette

The Exploration of the Impact of Police Enforcement on Freeway Crashes (TRBAM-24-05748) - B520

Zihao Wen/University of Utah, Juan Medina/University of Utah

Analyzing Pedestrian Red-Light Violations Using Surrogate Safety Measures: Risk Levels and Factors Impacting Pedestrian-Vehicle Collisions (TRBAM-24-00120) - B521

Abbas Sheykhfard/Babol Noshirvani University of Technology, Farshidreza Haghghi/Babol Noshirvani University of Technology, Shahrbanoo Kavianpour/Babol Noshirvani University of Technology, Subasish Das/Babol Noshirvani University of Technology, Grigorios Fountas/Babol Noshirvani University of Technology

Assessing the Effectiveness of Law Enforcement at South Carolina Work Zones Using Split Plot Treatment Design with Blocking (TRBAM-24-02217) - B513

Seyedmahyar Madarshahian/University of Nebraska, Lincoln, Reka Howard/University of Nebraska, Lincoln, Nathan Huynh/University of Nebraska, Lincoln, Jackson Wegmet/University of Nebraska, Lincoln, Chowdhury Siddiqui/University of Nebraska, Lincoln

Optimizing the Deployment of Automated Speed Enforcement for Safety (TRBAM-24-05865) - B523

Erik Nevland/York University, Kevin Gingerich/York University



Monday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Impairment in Transportation Research

Ryan Smith, National Transportation Safety Board (NTSB), presiding

Tara Casanova Powell, Association of Transportation Safety Information Professionals, presiding

Sponsored By Standing Committee on Impairment in Transportation

Effects of Cannabis on Highway Driving (TRBAM-24-04356) - B500

Cole Kruse/University of Iowa, Timothy Brown/University of Iowa, Rose Schmitt/University of Iowa, Gary Gaffney/University of Iowa, Gary Milavetz/University of Iowa, Chris Berka/University of Iowa

Partial Proportional Odds Model of Injury Severities on Roadway Class and Detailed Blood Toxicology

(TRBAM-24-02398) - B501

Adewumi Adegboye/University of Maryland, Kartik Kaushik/University of Maryland

Risk Factors Associated with Driving After Marijuana Use Among West Virginia College Students During the

COVID-19 Pandemic (TRBAM-24-00294) - B502

Yuni Tang/UNC Highway Safety Research Center, Christiaan Abildso/UNC Highway Safety Research Center, Christa Lilly/UNC Highway Safety Research Center, Erin Winstanley/UNC Highway Safety Research Center, Toni Rudisill/UNC Highway Safety Research Center

Association Between the Risk of Aberrant Driving Behavior and Sleep-Related Parameters: A Pilot Study in a

Taiwan Taxi Driver Group (TRBAM-24-04059) - B503

Peizheng Wang/Imperial College London, South Kensington, Wen-Te Liu/Imperial College London, South Kensington, Hye Oh/Imperial College London, South Kensington, Cheng-yu Tsai/Imperial College London, South Kensington, Arnab Majumdar/Imperial College London, South Kensington

Assessing the Effectiveness of Traffic Control Devices in Deterring Wrong-Way Driving by Alcohol-Impaired

Drivers: A Driving Simulator Study (TRBAM-24-04671) - B504

Huaguo Zhou/Auburn University, Yukun Song/Auburn University, Christopher Correia/Auburn University, Qing Chang/Auburn University, Taylor Stanley/Auburn University, Kayla Neeley/Auburn University

3001

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon A

Modern Transportation System Management and Operations: So Much More Than Travel Times and Vehicle Throughput

Tracy Scriba, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Regional Transportation Systems Management and Operations

This TSMO panel session will unpack trends; share reliability analytical methods to support performance measures; draw connections to safety and operations; and support resilience planning.

Modern Transportation System Management and Operations Trends in the Practice: Reliability, Safety, and Resilience (P24-20914)

Tracy Scriba/Federal Highway Administration (FHWA)

Reliability in a Time of Chaotic Travel Patterns (P24-20915)

Richard Margiotta/Cambridge Systematics, Scott Washburn/University of Florida

Integrating Transportation System Management and Operations into the Project Life Cycle (P24-20916)

Stephen Gault/Pennsylvania Department of Transportation

Connecting Safety and Operations: Creating Synergies for Greater Benefit (P24-20917)

Brent Cain/Arizona Department of Transportation

Providing Operational Resilience During Climate Challenges and Beyond (P24-20918)

Douglas Noble/Institute of Transportation Engineers

3002

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon C

Network Modeling and Control

Mehmet Yildirimoglu, University of Queensland, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

This sessions is about Large-scale network modelling and control.

Local Stability of Traffic Equilibria in an Isotropic Network (TRBAM-24-04384)

Ayush Pandey/University of Illinois, Urbana-Champaign, Lewis Lehe/University of Illinois, Urbana-Champaign, Vikash

Gayah/University of Illinois, Urbana-Champaign

Game-Theoretical Approach to Decentralized Multi-Drone Conflict Resolution and Emergent Traffic Flow Operations (TRBAM-24-01749)

Serge Hoogendoorn/Technische Universiteit, Delft, Victor Knoop/Technische Universiteit, Delft, Hani

Mahmassani/Technische Universiteit, Delft, Sascha Hoogendoorn-Lanser/Technische Universiteit, Delft

Max Pressure Traffic Control Modifications: Improving the Computation of Downstream Turning Ratios and Enhancing the Calculation of Pressures (TRBAM-24-04568)

Razi Zoabi/Technion - Israel Institute of Technology, Jack Haddad/Technion - Israel Institute of Technology

Perimeter or Network-Wide Traffic Control: A Thorough Discussion (TRBAM-24-03770)

Felipe de Souza/Universidade Federal de Santa Catarina, Rafael Saucedo/Universidade Federal de Santa Catarina, Omid

Mousavizadeh/Universidade Federal de Santa Catarina, Rodrigo Carlson/Universidade Federal de Santa Catarina, Mehdi

Keyvan-Ekbatani/Universidade Federal de Santa Catarina

A Bi-Level Method for Link Speed Estimation Based on Macroscopic Fundamental Diagram Using Deep Learning (TRBAM-24-06296)

Zhixiong Jin/University Gustave Eiffel, Dimitrios Tsitsokas/University Gustave Eiffel, Nikolas Geroliminis/University

Gustave Eiffel, Ludovic Leclercq/University Gustave Eiffel

3003

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 102B

Using Connected and Automated Vehicles to Improve Transportation Safety

Jaeyoung Lee, Central South University, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems

Technology advancements continue to show promise in improving safety on our roads. This session will showcase recent research looking at how CAV-related innovations are helping toward our goal of creating safe and equitable transportation system for all users, free from serious injury and death.

An Examination of Factors Influencing the Efficacy of Automatic Emergency Braking (TRBAM-24-05762)

Hisham Jashami/Michigan State University, Akinfolarin Abatan/Michigan State University, Derrick Hill/Michigan State University, Alejandra Meza/Michigan State University, Prem Shah/Michigan State University, Katelyn Rousch/Michigan State University, Nrushad Joshi/Michigan State University, Cleveland Yancovitz/Michigan State University, Peter Savolainen/Michigan State University

Examining the Relationship Between Connected Vehicle Driving Event Data and Police-Reported Traffic Crash Data at the Segment and Event Level (TRBAM-24-05717)

Nischal Gupta/Michigan State University, Hisham Jashami/Michigan State University, Peter Savolainen/Michigan State University, Timothy Gates/Michigan State University, Timothy Barrette/Michigan State University, Wesley Powell/Michigan State University

Investigating Interactions Between Sidewalk Autonomous Delivery Robots and Vehicular Traffic at Stop-Controlled Crosswalks (TRBAM-24-04770)

Adrian Cottam/Auburn University, Xiaofeng Li/Auburn University, Cynthia Navarro/Auburn University, Yao-Jan Wu/Auburn University

Insights into Automated Vehicle Collisions: Explainable Artificial Intelligence Models and Comparison with Non-Automated Vehicles (TRBAM-24-00697)

Saqib Mohammed Haroon/The University of Arizona, Alyssa Ryan/The University of Arizona

3004

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 103A

Innovative Approaches to Traffic Law Enforcement

Grady Carrick, Enforcement Engineering, Inc., presiding

Nicole Oneyear, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Traffic Law Enforcement

Evaluating the Effectiveness of Speed Cameras on Philadelphia's Roosevelt Boulevard (TRBAM-24-00166)

Erick Guerra/University of Pennsylvania, Christopher Puchalsky/University of Pennsylvania, Nata Kovalova/University of Pennsylvania, Yihong Hu/University of Pennsylvania, Qi Si/University of Pennsylvania, Jiamin Tan/University of Pennsylvania, Gillian Zhao/University of Pennsylvania

Illegal Weigh Station Bypassing (TRBAM-24-03812)

Mallory Brown/Kentucky Transportation Cabinet, Andrew Martin/Kentucky Transportation Cabinet, Xiaobing Li/Kentucky Transportation Cabinet, David Leddy/Kentucky Transportation Cabinet, Jennifer Walton/Kentucky Transportation Cabinet

Detection of Helmet Violations Among Electric Bicycle Riders Through Multi-Network (TRBAM-24-04030)

Shize Huang/No Organization, Yi Zhang/No Organization, Xingying Li/No Organization, Jinzhe Qin/No Organization, Qianhui Fan/No Organization, Guoqiang Xia/No Organization

Identifying Important Roadway Corridor Factors That Affect Crashes Influenced by Unsafe Driving Behaviors to Help Law Enforcement Proactively Reduce Crashes (TRBAM-24-01040)

John McCombs/University of Central Florida, Haitham Al-Deek/University of Central Florida, Adrian Sandt/University of Central Florida, Grady Carrick/University of Central Florida

3005

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon B

Occupant Protection: In-Vehicle Restraints and Related Topics

Praveena Penmetsa, University of Alabama, presiding

Sponsored By Standing Committee on Occupant Protection

This session will have five paper presentations primarily related to in-vehicle restraints such as seatbelts, child car seats, and airbags.

Investigating Critical Factor Associations Affecting Injury Severity Outcomes of Passengers Falling from Moving Vehicles (TRBAM-24-02230)

Reuben Tamakloe/Korea Advanced Institute of Science and Technology (KAIST), Emmanuel Adanu/Korea Advanced Institute of Science and Technology (KAIST), Subasish Das/Korea Advanced Institute of Science and Technology (KAIST)

A Comprehensive Analysis of Fatal Crashes Involving Child Restraints (TRBAM-24-05528)

Subasish Das/Texas State University, Valerie Vierkant/Texas State University, M. Ashifur Rahman/Texas State University

Examining Seat Belt Usage and Laws in the New England Region (TRBAM-24-05636)

Pravar Parashar/UMass Amherst: University of Massachusetts Amherst, Cole Fitzpatrick/UMass Amherst: University of Massachusetts Amherst, Michael Knodler/UMass Amherst: University of Massachusetts Amherst, Francis Tainter/UMass Amherst: University of Massachusetts Amherst

Analysis of Factors That Influence Crash Severity Under Various Airbag Deployment Status: A Correlated Random Parameters Logit with Heterogeneity in Means Approach (TRBAM-24-05846)

Richard Dzinyela/Alabama Transportation Institute, Emmanuel Adanu/Alabama Transportation Institute, Steven Jones/Alabama Transportation Institute

Exploring Noncompliance with Seat Belt Use Involved in Motor Vehicle Crashes: A Case Study in New Jersey (TRBAM-24-06320)

Md. Arifuzzaman Nayeem/Rowan University, Mohammad Jalayer/Rowan University

3006

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 150A

Automation and Extraction of Transportation Assets Using GIS

Eric Green, Kentucky Transportation Cabinet, presiding

Shawn Blaesing, Iowa Department of Transportation, presiding

Michael Hurst, Patrick Engineering, Inc., presiding

Sponsored By Standing Committee on Geographic Information Science

This session will feature three presentations that use GIS tools to extract or automate transportation assets.

Where to Park?: Using Python to Map Parking Regulations Signs to the Curb in Near Real Time (P24-20484)

Jada Macharie/Hunter College, CUNY, Maddalena Romano/New York City Department of Transportation

Automated Geographic Information System-Based Framework for Detecting Crosswalk Changes from

Bi-Temporal, High-Resolution Aerial Images (TRBAM-24-02419)

Richard Antwi/Florida A&M University-Florida State University, Samuel Takyi/Florida A&M University-Florida State University, Alican Karaer/Florida A&M University-Florida State University, Eren Ozguven/Florida A&M University-Florida State University, Ren Moses/Florida A&M University-Florida State University, Maxim Dulebenets/Florida A&M University-Florida State University, Thobias Sando/Florida A&M University-Florida State University

Efficient Extraction of Horizontal and Vertical Alignment Information for Roadways Using Public Data and Open Application Programming Interfaces (TRBAM-24-05170)

Xiaoming Yang/Georgia Southern University, Jyoti Das/Georgia Southern University

3007

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 150B

Innovative Data Approaches to Inform Freight Planning and Analysis

Diana Ramirez-Rios, University at Buffalo, SUNY, presiding

Sponsored By Standing Committee on Freight Transportation Data

This session will highlight innovative analysis approaches to address common freight data needs.

Truck Parking Usage Prediction for a Multi-State Truck Parking Information Management System (TRBAM-24-03116)

Rei Tamaru/University of Wisconsin, Madison, Yang Cheng/University of Wisconsin, Madison, Steven Parker/University of Wisconsin, Madison, Ernie Perry/University of Wisconsin, Madison, Bin Ran/University of Wisconsin, Madison, Soyoung Ahn/University of Wisconsin, Madison

A Freight Stop Purpose Model Using Enriched GPS Data (TRBAM-24-02800)

Monique Stinson/OST-R/Bureau of Transportation Statistics, Olcay Sahin/OST-R/Bureau of Transportation Statistics

Improving the Accuracy of Freight Mode Choice Models: A Case Study Using the 2017 Commodity Flow Survey

Public Use File Data Set and Ensemble Learning Techniques (TRBAM-24-01061)

Diyi Liu/University of Tennessee, Knoxville, Hyeonsup Lim/University of Tennessee, Knoxville, Majbah Uddin/University of Tennessee, Knoxville, Yuandong Liu/University of Tennessee, Knoxville, Lee Han/University of Tennessee, Knoxville, Ho-ling Hwang/University of Tennessee, Knoxville, Shih-Miao Chin/University of Tennessee, Knoxville

Supply Chain Fluidity: Index Development and Application (TRBAM-24-02224)

Mario Monsreal/Texas A&M Transportation Institute, Brittney Gick/Texas A&M Transportation Institute, David Salgado/Texas A&M Transportation Institute, Jose Rivera/Texas A&M Transportation Institute

3008

CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 152B

At the Intersection of Development and Transport: Affordability, Vehicle Miles Traveled, and Mode Shifts

Sarah Binkowski, AECOM, presiding

Sponsored By Standing Committee on Transportation Planning Analysis and Application

Attendees will learn methodologies and insights for better evaluating the interplay between travel demand, land development, and the cost of each. Key topics include understanding the causal factors of holiday travel (e.g., the different roles of population density and city size), factors influencing the nonlinearity of the relationship between land development and both vehicular volume and bus rapid transit, and the impact of infill development on VMT. Attendees will also be introduced to the role of explanatory factors on these relationships (notably income, mode performance, and auto ownership levels) as well as some innovative data collection techniques (e.g., the use of widely available remote sensing data through the National Land Cover Dataset.)

The Impact of Settlement Size and Regional Density on the Frequency of Different Holiday Types (TRBAM-24-01659)

Tanja Scheffler/Norwegian University of Science and Technology (NTNU), Eva Heinen/Norwegian University of Science and Technology (NTNU)

Does Urban Development Mean Increase in Traffic Activity?: An Investigation

into the Factors That Lead to Traffic Increase Due to Increased Development (TRBAM-24-02873)

Nadia Degbotse/North Carolina State University, Chase Nicholas/North Carolina State University, Daniel Findley/North Carolina State University

Built Environment and Commuting Mode Shares Within Rail Versus Bus Rapid Transit Catchment Areas in the United States (TRBAM-24-03821)

Sajjad Abdollahpour/Virginia Polytechnic Institute, Ralph Buehler/Virginia Polytechnic Institute, Arefeh Nasri/Virginia Polytechnic Institute, Steven Hankey/Virginia Polytechnic Institute

Infill Housing and Vehicle Miles Traveled: A Framework to Support Decision Making for Affordable Housing Development (TRBAM-24-03972)

Peyton Ratto/California State University Long Beach, Mykola Sauciur/California State University Long Beach, Shams Tanvir/California State University Long Beach, Anurag Pande/California State University Long Beach, Shishir Mathur/California State University Long Beach, Hilary Nixon/California State University Long Beach

(continued)

Unveiling Urban Spatial Structure from the Perspective of Commuting Flows: A Vector Field–Based Method (TRBAM-24-05220)

Tian Gan/Tongji University, Weifeng Li/Tongji University

3009 CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 151A

Wildlife Connectivity and Reduction of Wildlife–Vehicle Collisions

Kris Gade, Arizona Department of Transportation, presiding

Meridith Krebs, Kimley-Horn and Associates, Inc., presiding

Sponsored By Standing Committee on Environmental Analysis and Ecology

This session includes studies evaluating wildlife-vehicle collision rates, locations and cost-effective ways to reduce collisions. The presentations are based on studies in Texas, Minnesota, Ohio and Virginia, with a focus on deer and elk.

Introduction (P24-20304)

Kris Gade/Arizona Department of Transportation

Wildlife Crash Frequency in Texas Increases on Full Moon Nights (TRBAM-24-00902)

Kentaro Iio/Brahe, Dominique Lord/Brahe

Data-Driven Approach to Identify DVC Concentrations: A Case Study in Minnesota (TRBAM-24-03020)

Arian Zare/University of Minnesota, Ron Moen/University of Minnesota, Raphael Stern/University of Minnesota

Wildlife Crossing Placement, Sizing, Costs, and Funding Opportunities: Applying a Criteria-Based Approach to Reduce Crash Risk and Connect Habitat for Elk in Southwest Virginia (TRBAM-24-00524)

Bridget Donaldson/Virginia Transportation Research Council, Elizabeth Hillard/Virginia Transportation Research Council, Jacalyn Rosenberger/Virginia Transportation Research Council, Renee Callahan/Virginia Transportation Research Council

Feasibility Analysis of Deer Passage Construction Through Existing Rock Installations Under In-Service Bridges (TRBAM-24-02229)

Benjamin Sperry/Illinois Department of Transportation, Shristi Bhattarai/Illinois Department of Transportation, Karel Cubick/Illinois Department of Transportation, Chad Boyer/Illinois Department of Transportation, Justin Bradley/Illinois Department of Transportation

3010

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 151B

Workforce Development: Challenges and Solutions

Victoria Beale, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Workforce Development and Organizational Excellence, International Coordinating Council, Rural Transportation Issues Coordinating Council, Subcommittee on Organizational Management, Standing Committee on Research Innovation Implementation Management, Standing Committee on Information and Knowledge Management

Rail, induced travel and autonomous vehicles take center stage in exploring issues and solutions to workforce development challenges. Our current environment builds on our transportation infrastructure, leading our agencies towards employment of highly skilled to keep moving our system forward.

Leading Forward: Developing Leadership Skills and Strong Safety Cultures Across the Rail Industry (TRBAM-24-04488)

Julia Leone/Short Line Safety Institute, Samantha Lacey/Short Line Safety Institute

Do Engineering Instructors Teach Induced Travel?: If Not, Why Not? (TRBAM-24-04215)

Kelcie Ralph/Rutgers University, Ellen White/Rutgers University

Exploring Potential Critical Content of Connected and Autonomous Vehicles for Transportation Engineering Courses: A National Survey (TRBAM-24-01223)

Md Mahmud Hossain/Auburn University, Huaguo Zhou/Auburn University, Rod Turochy/Auburn University

The Agency Capability Building (ACB) Web Portal (P24-21556)

Lori Richter/Spy Pond Partners, LLC

3011

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 152A

Asset Management of Ancillary Assets

Emily Burns, Seattle Department of Transportation, presiding

Sponsored By Standing Committee on Transportation Asset Management

Federal requirements have served as one of the main drivers in the implementation and practice of asset management for transportation agencies. The needs expand beyond the requirements to report on pavement and bridge assets. This session will focus on the practices and examples from agencies that apply asset management principles to ancillary assets. The presentations highlight current practices, frameworks, and the successful implementation of practices for the management of these assets. The topics include data collection efforts, analysis, integration approaches, and prioritization for decision making purposes.

Digital Project Delivery: An Update on Managing Ancillary Assets (P24-20610)

Hala Nassereddine/University of Kentucky

Managing Assets at the Port Authority of New York and New Jersey (P24-20612)

Robert Kumapley/Port Authority of New York and New Jersey

Federal Highway Administration Framework for Ancillary Assets in a Transportation Asset Management Plan (P24-20611)

Brad Allen/Applied Pavement Technology, Inc.

3012

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 156

2023 Environmental Issues in Transportation Law: Legal Overview

Edward Boling, Perkins Coie, LLP, presiding

Sponsored By Standing Committee on Environmental Issues in Transportation Law

This panel presentation will discuss recent legislation, regulations, and case law applicable to environmental issues in transportation.

Panel Member (P24-21431)

Faris Mohammed/Federal Railroad Administration (FRA), Jomar Maldonado/Council on Environmental Quality, Julie Wilson-McNerney/Schwabe, Williamson & Wyatt, David Miller/Nossaman LLP

3013

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 204C

Backfill Considerations, Fire Resistance, and Construction of Culverts and Buried Bridges

Timothy McGrath (moderator & presenter), Retired, presiding

Sponsored By Standing Committee on Culverts, Buried Bridges and Soil Structure Interaction

This session consists of four presentations. First two ,will focus backfill (soil modulus fro flexible culvert and sustainability measures of ESCS backfills for buried bridges) . The third will discuss construction phasing effects and creep on a buried concrete bridge. The last presentation will focus structural fire engineering analysis buried steel bridge with fire protection layer.

A Critical Review of Methods for Backfill Soil Modulus in Design of Flexible Culverts (TRBAM-24-01284)

Timothy McGrath (moderator & presenter)/GeoAnlegg AS, Jan Vaslestad/GeoAnlegg AS, Dan Sukuvara/GeoAnlegg AS, Elena Scibilia/GeoAnlegg AS, Gunvor Baardvik/GeoAnlegg AS, Gustav Grimstad/GeoAnlegg AS

Sustainability Measures of Expanded Shale, Clay, and Slate Backfills for Buried Structures (TRBAM-24-01397)

Fariborz Tehrani/Expanded Shale, Clay and Slate Institute

The Effects of Construction Phasing and Creep on Buried Bridges (TRBAM-24-04911)

Jeremy Bowers/SGH, Jesse Beaver/SGH, Matthew Barendse/SGH

Structural Fire Engineering Analysis of Corrugated Steel Buried Bridges (TRBAM-24-05574)

Shokoufeh Zargar Shoushtari/SGH, Ricardo Medina/SGH, Jesse Beaver/SGH, Joel Hahm/SGH

3014

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 201

The Challenges and Opportunities of Progressive Design Build and Public–Private Partnerships: A Panel Discussion

Steven DeWitt, ACS Infrastructure Development, Inc., presiding
Sponsored By Standing Committee on Project Delivery Methods

This session will include a panel of contractors, owners, and designers talking and debating about the benefit and drawbacks of Progressive Design-Build and P3. It will include discussion of models from different state, discussion of risks, and procurement topics.

Panel Member (P24-21467)

Henry Patel/Kiewit Development Company, Ural Yal/Flatiron Construction, Thomas Sherman/Association for the Improvement of American Infrastructure, Pete Rahn/Cintra

3015

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 204AB

Potpourri of Research Related to Concrete Pavement Construction

Daniel Gancarz, Illinois Tollway, presiding
Sponsored By Standing Committee on Concrete Pavement Construction and Rehabilitation

Potpourri of Research Related to Concrete Pavement Construction

Computer Vision–Based Estimation of the Effects of Vibration in Slipform Paving (TRBAM-24-03856)

Xiangdong Yan/University of Pittsburgh, Alessandro Fascetti/University of Pittsburgh, Julie Vandebossche/University of Pittsburgh, Megan Darnell/University of Pittsburgh

Development of the Paver Consolidation Simulation for Optimizing Concrete Consolidation in Slipform Paving (TRBAM-24-05596)

Megan Darnell/University of Pittsburgh, Julie Vandebossche/University of Pittsburgh, Alessandro Fascetti/University of Pittsburgh, Xiangdong Yan/University of Pittsburgh, Charles Donnelly/University of Pittsburgh

Evaluation of Portland Limestone Cement Concrete with Cellulose Nanocrystals in Pavement Test Track Construction (TRBAM-24-04075)

Md Mostofa Haider/University of California, Davis, Souvik Roy/University of California, Davis, Fabian Paniagua/University of California, Davis, Somayeh Nassiri/University of California, Davis, Angel Mateos/University of California, Davis

Evaluation of the Frictional Coefficient Used for Joint Sealant Reservoir Design (TRBAM-24-05809)

Zachary Brody/University of Pittsburgh, Julie Vandebossche/University of Pittsburgh

3016



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 202A

Day-to-Day Practices to Reduce the Carbon Footprint of Asphalt

Tim Aschenbrenner, Federal Highway Administration (FHWA), presiding
Benjamin Bowers, Auburn University, presiding
Sponsored By Standing Committee on Asphalt Pavement Construction and Rehabilitation

In this session speakers will discuss day-to-day practices that can be adopted to reduce the carbon footprint of asphalt. The speakers will share everyday practices that can be implemented from the perspective of a plant manufacturer, paving contractor and specifying agency.

Reducing the Asphalt Carbon Footprint at Asphalt Plants (P24-20141)

Greg Renegar/ASTEC Industries, Inc.

Reducing Greenhouse Gas Emissions from Asphalt: Contractor Perspective (P24-20142)

Cheng Ling/Pike Industries, Inc.

(continued)

Virginia Department of Transportation Perspective on Reducing Environmental Impacts of Pavement Rehabilitation (P24-20143)

Brian Diefenderfer/Virginia Transportation Research Council

3017

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 207A

Current Topics on Low-Volume Roads

Jennifer Aponte Rivera, Federal Highway Administration (FHWA), presiding

Laura Fay, Western Transportation Institute (WTI), presiding

Sponsored By Standing Committee on Low-Volume Roads

A Holistic and Practical Approach for Assessing Flood Risks of Low-Volume Roads (TRBAM-24-02399)

Qiming Chen/Worcester Polytechnic Institute, Mingjiang Tao/Worcester Polytechnic Institute, Rajib Mallick/Worcester Polytechnic Institute, Zhongjie Zhang/Worcester Polytechnic Institute

Self-Explaining Analysis of the Facility Environment on Rural Roads Using an Improved Convolutional Neural Network Considering Drivers' Visual Perception Characteristics (TRBAM-24-05867)

Weixi Ren/Tongji University, Bo Yu/Tongji University, Yuren Chen/Tongji University, Shan Bao/Tongji University, Kun Gao/Tongji University, You Kong/Tongji University

Investigating the Impact of Spring Thaw on Ontario Low-Volume Roads (TRBAM-24-04658)

Thiago Muzzi/McMaster University, Rabiah Rizvi/McMaster University, Vimy Henderson/McMaster University, Susan Tighe/McMaster University, Stephen Lee/McMaster University

3018

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 101

Reimagining the Roadside: Form, Function, and So Much More

Jeffrey Lormand, Parsons, presiding

Raymond Willard, Washington State Department of Transportation, presiding

Sponsored By Standing Committee on Landscape and Environmental Design, Standing Committee on Performance Effects of Geometric Design, Standing Committee on Roadside Safety Design, Standing Committee on Roadside Maintenance Operations

Come join us to hear three experts discuss topics that relate to Safety and the Visual Quality of the roadside.

Unclear Territory: Clear Zones, Roadside Trees, and Collaboration in State Highway Agencies (P24-20014)

Ellen White/State University of New York, ESF

End of the Road: Reimagining the Street as the Heart of the City (P24-20015)

William Riggs/University of San Francisco

Unraveling the Impact of Visual Environments on Speeding Tendencies Using a Large Image Dataset (P24-20146)

Mohamed Abdel-Aty/University of Central Florida, Jorge Ugan/University of Central Florida, Zubayer Islam/University of Central Florida

Unraveling the Impact of Visual Environments on Speeding Tendencies Using a Large Image Data Set (TRBAM-24-00833)

Mohamed Abdel-Aty/University of Central Florida, Jorge Ugan/University of Central Florida, Zubayer Islam/University of Central Florida

3019

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 209AB

Impact of Frost on the Performance of Geomaterials

Benjamin Worel, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Geo-Environmental and Climatic Impacts on Geomaterials

(continued)

Measurement and Modeling of Thermo-Hydro-Mechanical Behaviors of Frozen Clays: Frost Susceptibility and Compressibility (TRBAM-24-00698)

Weiling Cai/Rowan University, Cheng Zhu/Rowan University, Wade Lein/Rowan University

Evaluation of Shape Array Sensors and LiDAR for Characterizing Frost Heave-Thaw Settlement and Spatial-Temporal Distribution of Roadway Elevation (TRBAM-24-04606)

Md Fyaz Sadiq/Michigan State University, Mohammad Wasif Naqvi/Michigan State University, Yunesh Saulick/Michigan State University, Bora Cetin/Michigan State University, John Daniels/Michigan State University, Dotun Adeyanju/Michigan State University, Micheal Uduebor/Michigan State University

Laboratory and Field Evaluation of the Properties of Frost-Susceptible Soils (TRBAM-24-03624)

Ahmed Saidi/Rowan University, Ashith Marath/Rowan University, Ayman Ali/Rowan University, Dorin Papuc/Rowan University, Yusuf Mehta/Rowan University, Wade Lein/Rowan University

Experimental Study of Fungi-Mediated Soil for Mitigating Frost Heave in Pavements (TRBAM-24-02540)

Xijin (Emma) Zhang/Case Western Reserve University, Yusheng Jiang/Case Western Reserve University, Xiong Yu/Case Western Reserve University

The Effect of Freeze-Thaw Cycles on Strength Properties of Engineered Water Repellent Soils (TRBAM-24-03978)

Micheal Uduebor/Florida Gulf Coast University, John Daniels/Florida Gulf Coast University, Mohammad Wasif Naqvi/Florida Gulf Coast University, Bora Cetin/Florida Gulf Coast University

3020

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 207B

Geosynthetics in Pavement Applications

Peter Becker, Indiana Department of Transportation, presiding

Sponsored By Standing Committee on Geosynthetics

In this lecture session, you will learn about the benefits of a variety of geosynthetics used in pavement applications, from the top of the roadway and into the pavement structure. Topics range from asphalt reinforcement to deeper enhancements, how to measure improvements, and how to incorporate this into current design methods.

Fatigue and Fracture Behavior of Geogrid Reinforced Asphalt Concrete for Pavement Overlays (TRBAM-24-06162)

Khaled Sobhan/Florida Atlantic University, Jamie Polidora/Florida Atlantic University

Estimation of Modulus Improvement Factor for Geo-Grid Reinforced Granular Layer from Laboratory and In-Field Investigations (TRBAM-24-01161)

Nikhil Saboo/Indian Institute of Technology, Roorkee, Vijay Kanaujia/Indian Institute of Technology, Roorkee, G Bharath/Indian Institute of Technology, Roorkee

Quantitative Evaluation of Geogrids for Modulus Enhancement Using Bender Element Sensor Technology (TRBAM-24-04422)

Han Wang/University of Illinois, Urbana-Champaign, Mingu Kang/University of Illinois, Urbana-Champaign, Youngdae Kim/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Heather Shoup/University of Illinois, Urbana-Champaign

Multi-Physics Simulation of the Effects of Wicking Geotextile on Mitigating Frost Effects on Cold Region Pavement (TRBAM-24-02563)

Yusheng Jiang/Case Western Reserve University, Zaid Alajlan/Case Western Reserve University, Claudia Zapata/Case Western Reserve University, Xiong Yu/Case Western Reserve University

Development of Reduction Factors for Sublayers of Mechanistic-Empirical Pavement Design Guide Rutting Equations in Geosynthetic Reinforced and Stabilized Pavements (TRBAM-24-00229)

Mehdi Zadehmohamad/Louisiana Department of Transportation and Development, Murad Abu-Farsakh/Louisiana Department of Transportation and Development, George Voyiadjis/Louisiana Department of Transportation and Development

3021

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 202B

Supply, Demand, and Sustainable Use of Aggregates in Superpave 5 and Balanced Mix Designs

Scott Woodard, Martin Marietta, presiding

Sponsored By Standing Committee on Aggregates, Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Production and Use of Asphalt, Standing Committee on Binders for Flexible Pavement, Standing Committee on Asphalt Materials Selection and Mix Design, Standing Committee on Asphalt Mixture Evaluation and Performance, Standing Committee on Asphalt Pavement Construction and Rehabilitation

Sustainable infrastructure is driving the demand for roadway construction, specifically the aggregates required and how they are utilized in asphalt and concrete mix designs. Superpave 5 and Balanced Mixed Designs are at the forefront of design and have unique requirements that provide the benefit they are designed for. Producers are routinely challenged to produce products that meet the needs of many designs which could result in waste material accumulating onsite or the inability to provide sufficient materials to various projects. As sustainability continues to drive everyday business, how can we minimize waste while maximizing resources for Superpave 5 and Balanced Mix Designs and what is the effect on future aggregate supplies?

Interrelationship Between Aggregate Properties and Asphalt Mixture Performance in Balanced Mix Design (P24-20349)

Thomas Bennert/Rutgers University

Effect of Superpave5 Implementation on Aggregate Needs for Asphalt Mixture Design in Indiana (P24-20352)

Matt Beeson/Indiana Department of Transportation

Optimized, Sustainable, and Balanced Mix Design (P24-20356)

Imad Al-Qadi/University of Illinois, Urbana-Champaign

Aggregates in Superpave 5 and Balanced Mixed Designs: Effects on Supply (P24-20460)

Robert Quire/E&B Paving

3022

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 103B

Innovative Fleet Asset Management Decision-Making Guidance, Methods, and Tools Provided by the National Cooperative Highway Research Program

George Halachoff, Michigan State University, presiding

Sponsored By Standing Committee on Maintenance Fleet and Equipment

Completed NCHRP research projects will be presented that are relevant to departments of transportation and other fleets equipment fleet management decision making challenges. The practice ready findings, guidance and tools presented addresses 1) equipment fleet cost calculation development, 2) the repair or replacement decision-making processes relevant to a downed fleets asset, and 3) the appropriate selection of different sales channels available to maximize resale proceeds from the fleet asset disposal sales process.

NCHRP 13-07: Guide to Calculating Ownership and Operating Costs of U.S. Department of Transportation Vehicle and Equipment Fleet (P24-20252)

Geoffrey MORRISON/Cadmus Group, Henry Canipe/Mott MacDonald, LLC

NCHRP 13-08: Guideline for Decision Making for Repair Versus Replacement of Highway Maintenance Equipment (P24-20250)

Geoffrey MORRISON/Cadmus Group, John Hildreth/Western Carolina University

NCHRP 13-09: Maximizing Proceeds from the Fleet Asset Disposal Sales Process (P24-20251)

Henry Canipe/Mott MacDonald, LLC, Lisa Kunzman/L. Kunzman Consulting

3023

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 206

Automated Vehicle Testbeds and Weather Applications

Curtis Walker, National Center for Atmospheric Research (NCAR), presiding

Michael Chapman, Colorado Department of Transportation, presiding

Sponsored By Standing Committee on Road Weather, Standing Committee on Vehicle-Highway Automation, Standing Committee on Winter Maintenance

Testbeds are a critical resource in ensuring the safe, reliable, and efficient operation of automated vehicles and other emerging vehicle technologies. These testbeds also offer unique opportunities to assess the performance of automated vehicles during adverse weather conditions. Such experiments may promote the development of safety standards and certifications for the industry. This lectern session will demonstrate such automated vehicle adverse weather driving use cases at various testbeds throughout North America.

Weather Impact from the View of High-Resolution Sensors: Observation from DataCity Testing Ground (P24-20411)

Peter Jin/Rutgers University

Adverse Weather Testing of Vehicles with Automation (P24-20412)

Mohit Mandokhot/TRANSPORTATION RESEARCH CENTER INC (Ohio)

I-STREET Living Lab at the University of Florida Transportation Institute: Weather Connected and Autonomous Vehicle Testbed Opportunities (P24-20378)

Pruthvi Manjunatha/University of Florida

Placeholder: M-City/Greg McGuire (P24-20413)

Greg McGuire/University of Michigan, Ann Arbor

Virginia Tech Transportation Institute Weather Automated Vehicle Testbed Opportunities (P24-20377)

Ronald Gibbons/Virginia Polytechnic Institute

3024



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 102A

Kahramanmaras, Türkiye, Earthquake Response in Affected Regions: Observations, Impact on Community, Lessons Learned, and Recommendations, Part 1 (Part 2, Session 3079)

Sreenivas Alampalli, Stantec, presiding

Anne Rearick, Indiana Department of Transportation, presiding

Sponsored By Section - Infrastructure Management and System Preservation, International Coordinating Council, Section - Bridges and Structures, Standing Committee on Testing and Evaluation of Transportation Structures, Standing Committee on Seismic Design and Performance of Bridges, Standing Committee on Bridge and Structures Management, Subcommittee on Safety and Security of Bridges and Structures

Seismic Hazard, Strong Ground Shaking, and Catastrophic Risk and Risk Reduction (P24-20022)

Tuna Onur/Onur Seemann Consulting

Introduction and Overview of February 6 Türkiye Earthquakes: Effects on Transportation Infrastructure (P24-20023)

Nurdan Apaydın/Istanbul University, Cerrahpaşa, Fikret Catbas/University of Central Florida

Observations and Recommendations Based on Earthquake Engineering Research Institute Advance Team and American Concrete Institute Disaster Reconnaissance Team Site Visits (P24-20024)

Ayhan Irfanoglu/Purdue University

Similarities and Differences in U.S. and Turkish Seismic Design Practices (P24-20077)

Alp Caner/WSP-USA

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 146A

Back to the Future: New Strategies for Long-Term Disaster Preparedness, Response, and Recovery

Sarah Grajdura, University of Vermont, presiding

Diana Herriman, FEMA, presiding

Sponsored By Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity, Standing Committee on Equity in Transportation, Standing Committee on Community Resources and Impacts, Standing Committee on Extreme Weather and Climate Change Adaptation

Long-term planning is needed to prepare for future intense and frequent natural disasters. What new strategies are being considered to approach resilience and adaptation, and what role does existing transportation infrastructure have in this process? Managed retreat, displacement, and property acquisition are all potential strategies that require careful consideration for vulnerable populations and those historically marginalized. How will these strategies impact transportation systems, and what paradigm shifts are necessary to reach these long-term goals sustainably and equitably?

Climate Driven Relocation and Managed Retreat: Working Toward a National Framework (P24-20771)

Michelle Ethun/Office of the Secretary of Transportation (OST)

Using Virtual Reality as a Tool for Long-Range Resilience Planning (P24-20772)

John Renne/Florida Atlantic University

Strategies for Climate Adaptation and Resilience in the U.S. Department of Transportation (P24-20773)

Rebecca Beavers/U.S. Department of Transportation Office of the Under Secretary for Policy

Strategies to Reduce Socioeconomic Inequality in Disaster Recovery (P24-20774)

Deb Niemeier/University of Maryland, College Park

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 146B

Protecting Against Automated Road Rage: Advanced Cyber Security Research to Keep Autonomous Vehicles from Going Rogue

Dajiang Suo, Massachusetts Institute of Technology, presiding

Kaveh Bakhsh Kelarestaghi, Amazon, presiding

Sponsored By Standing Committee on Systems, Enterprise, and Cyber Resilience

Vehicles with automation functions and connected communications are at risk from cyberattacks that can destabilize how they operate elevating risks for safety and injury among the traveling public. This session will provide a series of advanced research into how automated vehicles with communicative functions may be hardened against cyberattacks through enhanced platoon stability operations, modeling and detection of false trajectories, and slow drift GPS spoofing attacks.

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 146C

Transportation Resilience 2023: Report on Conference Findings and Recommendations

Mark Abkowitz, Vanderbilt University, presiding

Sponsored By Standing Committee on Extreme Weather and Climate Change Adaptation

This session will present findings and recommendations from Transportation Resilience 2023: International Conference on Extreme Weather and Climate Change Challenges, held in November. The conference was organized around three key themes: 1) resilience planning and projects, 2) resilient recovery, and 3) resilience processes and programs. Content covered a variety of transportation modes and considered all aspects of the transportation sector - design, engineering, planning, asset management, operations, maintenance, emergency management and communications. Importantly, Transportation Resilience 2023 represented a unique opportunity for exchanging innovative ideas and learning more about the latest results and accomplishments.

Presenter 1 (P24-21532)

Mark Abkowitz/Vanderbilt University

Presenter 2 (P24-21533)

Brenda Dix/ICF

Presenter 3 (P24-21534)

Steven Olmsted/Arizona Department of Transportation

3028

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 140

Equitable Deployment of Electric Vehicles and Charging

Rachael Nealer, U.S. Department of Energy (DOE), presiding

Sponsored By Standing Committee on Alternative Fuels and Technologies

A Segmentation Analysis of the Zero-Price Effect for Public Electric Vehicles Charging: Considering Social and Financial Disadvantage (TRBAM-24-04808)

Divyamitra Mishra/University of South Florida, Michael Maness/University of South Florida

Are We Advancing Equity in Electric Vehicle Charging Station Distribution? Analyzing National and State Trends Pre- and Post-Justice 40 Initiative (TRBAM-24-06357)

Fatemeh Janatabadi/George Mason University, Pranav Griddaluri/George Mason University, Alireza Ermagun/George Mason University

Amplifying Electric Vehicle Adoption in Disadvantaged Communities (TRBAM-24-00399)

Brett Williams/Center for Sustainable Energy, John Anderson/Center for Sustainable Energy

Assessing the Spatial Distributions of Public Electric Vehicle Charging Stations with Emphasis on Equity Considerations in King County, Washington (TRBAM-24-03035)

Arsalan Esmaili/University of Washington, Seattle, Mohammad Mehdi Oshanreh/University of Washington, Seattle, Shakiba Naderian/University of Washington, Seattle, Don MacKenzie/University of Washington, Seattle, Cynthia Chen/University of Washington, Seattle

Understanding the Used Vehicle Market and Its Implications for Electric Vehicles (TRBAM-24-04839)

Theodora Konstantinou/ICF, Debapriya Chakraborty/ICF, Julia Beatriz Gutierrez Lopez/ICF

3029 CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 145B

Transit Management and Performance Papers of Excellence

Frances Fisher, San Francisco Bay Area Rapid Transit, presiding

Konstantinos Gkiotsalitis, National Technical University of Athens (NTUA), presiding

Sponsored By Standing Committee on Transit Management and Performance

This session presents new research in transit management and performance. Attendees will learn about an innovative real-time performance dashboard for buses and new spatial benchmarking method for analyzing performance through ridership data. They will also learn hear about a study exploring the efficiency of demand responsive transportation (DRT) and another examining chances in travel choices over long-term disruptions.

Participatory Design of a Real-Time Transit Performance Dashboard for the Management of Public Bus Transit Systems in Transit-Dependent Communities (TRBAM-24-04119)

Kidus Admassu/Microsoft Corporation, Jerome Lynch/Microsoft Corporation, Robert Goodspeed/Microsoft Corporation, Curt Wolf/Microsoft Corporation

Capturing Essential Differences in Transit Networks Redesign Incorporating Spatial Spillover Effects (TRBAM-24-05852)

Filippos Alogdianakis/University of Cyprus, Paraskevas Nikolaou/University of Cyprus, Loukas Dimitriou/University of Cyprus

Comparative Analysis of Demand-Responsive Transit Services on System Efficiency (TRBAM-24-04939)

Diana Al-Nabulsi/Western Michigan University, Jun-Seok Oh/Western Michigan University, Valerian Kwigizile/Western Michigan University, Hyunmyung Kim/Western Michigan University, Hyung-Min Jun/Western Michigan University

(continued)

Understanding the Effects of a Long-Term Transit Service Suspension During the COVID-19 Pandemic on Transit Users' Travel Choices (TRBAM-24-02996)

Mohamed Noureldin/University of Saskatchewan, Ehab Diab/University of Saskatchewan

3030 CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 145A

Lessons in Bus Electrification

Chun-Hung "Peter" Chen, Santa Clara Valley Transportation Authority (VTA), presiding

Sponsored By Standing Committee on Bus Transit Systems

With more battery electric buses deployed around the world, this session explores lessons learned in two case studies and highlights analysis tools for life cycle and energy consumption to aid public transport agencies.

Urban Bus Fleet Concept Renewal Strategy: The Case of Athens, Greece (TRBAM-24-02013)

Konstantia Kontodimou/National Technical University of Athens (NTUA), Eleni Papatzikou/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA), Panos Papadakos/National Technical University of Athens (NTUA), Alan O'Brien/National Technical University of Athens (NTUA)

Data-Driven Energy Consumption Estimation for Electric Transit Buses (TRBAM-24-02551)

Phoebe Ho/National Renewable Energy Laboratory (NREL), Zhaocai Liu/National Renewable Energy Laboratory (NREL), Jacob Holden/National Renewable Energy Laboratory (NREL), Andrew Kotz/National Renewable Energy Laboratory (NREL)

Life-Cycle Cost Analysis for Overcoming Battery Electric Bus Range Limitation Using Public Transit Scheduling Data (TRBAM-24-05061)

Laura Soares/Rutgers University, Hao Wang/Rutgers University

FTA Zero Emission Directed Research and Technical Assistance Highlights (P24-21561)

Mohammed Yousuf/Federal Transit Administration (FTA)

3031 CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 147B

Shared Use Mobility Practices Being Used in Rural and Small Urban Communities

Krista Purser, Kittelson & Associates, Inc., presiding

Sponsored By Standing Committee on Rural, Intercity Bus, and Specialized Transportation, Standing Committee on Innovative Public Transportation Services and Technologies

Shared-use mobility, once primarily popular in urban areas, is now extending its reach into rural communities. This session aims to explore the innovative shared-use mobility practices that are being implemented in rural and small urban areas. Through detailed case-study examples, attendees will gain insights into the unique solutions and strategies that are making shared mobility accessible and effective in these less densely populated regions. Join us to learn about the diverse approaches, challenges faced, and successful outcomes achieved in integrating shared-use mobility into the fabric of rural and small urban communities.

Shared Use Travel Behavior for Improving Rural Mobility: A Case Study of Greene County, Pennsylvania (TRBAM-24-04440)

Zulqarnain Khattak/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

Introducing Shared Mobility in Austria's Rural Cities: Determinants of Usage, User Satisfaction, and Non-User Reasoning (TRBAM-24-04588)

Julia Schilder/University of Natural Resources and Life Sciences, Yusak Susilo/University of Natural Resources and Life Sciences, Juliane Stark/University of Natural Resources and Life Sciences

Community Response to Low-Speed Electric Vehicle On-Demand Mobility Service in a Rural Community (TRBAM-24-06245)

Katie Kam/City of Pflugerville

A Mobility Energy Productivity Evaluation of On-Demand Transit: A Case Study in Arlington, Texas (TRBAM-24-04481)

Bonnie Powell/National Renewable Energy Laboratory (NREL), Ruqayya Zakaria/National Renewable Energy Laboratory (NREL), Sailesh Acharya/National Renewable Energy Laboratory (NREL), Rick Grahn/National Renewable Energy Laboratory (NREL), Alejandro Henao/National Renewable Energy Laboratory (NREL), Stanley Young/National Renewable Energy Laboratory (NREL)

3032

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 147A

Emerging Trends in Railroad Rolling Stock and Motive Power

Davidson Ward, FMW Solutions LLC, presiding

Sponsored By Standing Committee on Rail Rolling Stock and Motive Power

This session will present research papers reviewed by the committee this year.

3033

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 144AB

Exploring the Costs of Climate Change on International Trade and Transportation

Daniel Hackett, Hackett Associates, LLC, presiding

Sponsored By Standing Committee on International Trade and Transportation, Standing Committee on Ports and Channels

This session will discuss the multifaceted challenges and opportunities surrounding climate resilience in the realm of international trade and transportation. Topics will encompass the economic ramifications of climate change on the sector and illustrate how government initiatives can support stakeholders in the design and development of environmental-related infrastructure projects.

The Port Infrastructure Development Program (P24-20858)

Peter Simons/Maritime Administration

Port Sustainability and Resilience at the Port of New York and New Jersey (P24-21401)

Tanja Grzeskowitz/The Port Authority of NY & NJ

Economic Effects of Climate Change on International Trade and Transportation (P24-21480)

Charles Kunaka/World Bank

Railroad Perspectives on Sustainability and Resilience (P24-21552)

Theresa Romanosky/Association of American Railroads

3034 CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 143AB

Small Community Response to Air Service Development Trends: Ensuring Resilience with Innovative Aviation Solutions and Other Transportation Modes

Rohan Sheth, Campbell-Hill Aviation Group, presiding

Sponsored By Aviation Group, Subcommittee on Young Members-Aviation, Standing Committee on Aviation Administration and Policy, Standing Committee on Aviation System Planning, Standing Committee on Aviation Economics and Forecasting

Many small communities rely on federal subsidy programs such as Essential Air Service (EAS) and the Small Community Air Service Development Program (SCASDP) to encourage airlines to facilitate regional air service connectivity to/from larger markets. However, as a result of the COVID-19 pandemic and limited front-line staff available to service routes, airlines have cut several small markets from their network. These situations may present an opportunity to explore more resilient multimodal options. By leveraging a combination of conventional and emerging transportation options, small communities could reconnect to larger markets with more robust, sustainable, and efficient transportation options.

(continued)

Federal Initiatives to Promote Small Community Air Service (P24-20308)

Heather Krause/U.S. Government Accountability Office (GAO)

Landline in PHL and Beyond: Multimodal Service as an Economically Efficient, High-Frequency Regional Connectivity Solution (P24-20307)

Nick Johnson/The Landline Company

InterVISTAS Perspective (P24-20341)

Daniel Skwarek/InterVISTAS

Wyoming Department of Transportation Perspective (P24-21465)

Brian Olsen/Wyoming Department of Transportation

McFarland Johnson Perspective (P24-21466)

Richard Lucas/McFarland-Johnson, Inc.

3035 CM (1.75)

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 143C

National Airspace System Performance Changes After the Pandemic: Adaptation, Recovery, and Evolution

Mark Hansen, University of California, Berkeley, presiding

Sponsored By Standing Committee on Airfield and Airspace Performance

2023 marks the return of air traffic to pre-pandemic levels. During the intervening years, NAS infrastructure and services have changed as the result of the pandemic, evolving traffic management strategies, and the accommodation of new entrants. How does the 2023 NAS compare to the pre-Covid NAS? Do the impacts of the pandemic and pandemic adaptations persist? How has traffic management changed? What are the operational performance changes pre/post Covid and what are the drivers? Are there measurable impacts of trajectory-based operations? How has equipment enabling aircraft to use NEXTGEN core capabilities changed? We grapple with these questions with a panel of FAA, flight operator, and academic experts.

Normalizing for Pre- Versus Post-COVID Changes to Assess TBO/RNP Performance at DEN (P24-20388)

Martin Durbin/Federal Aviation Administration (FAA)

Precision Airspace Flow Programs: The Response to Increasing Demand in the Florida Markets (P24-20391)

Gabriele Enea/MIT Lincoln Laboratory

A Look at Inter-Arrival Times: Why Are Airports Different and What Has Changed Since 2019? (P24-20389)

Rob Dean/Federal Aviation Administration (FAA)

3036

Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, 144C

Ferry Operations: Decarbonization and Sustainability

Catherine Peele, North Carolina Department of Transportation, presiding

Sponsored By Standing Committee on Ferry Transportation

Ferry System Governance: A Review of Michigan Ferry System and Comparative Analysis of Governance Strategies Nationwide (TRBAM-24-05042)

Farish Jazlan/Michigan State University, Amirali Soltanpour/Michigan State University, Ali Zockaie/Michigan State University, Mehrnaz Ghamami/Michigan State University

Modeling Perception Toward Sustainable Ferries Through Ridership Surveys: A Case Study of Michigan Islands (TRBAM-24-03620)

Farish Jazlan/Michigan State University, Amirali Soltanpour/Michigan State University, Ardeshir Fadaei/Michigan State University, Ali Zockaie/Michigan State University, Mehrnaz Ghamami/Michigan State University

North Carolina Department of Transportation Ferry Division Research for Electrification (P24-20150)

John Hildreth/Western Carolina University

3037



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Ballroom A

U.S. Department of Transportation: Department of Transportation Activities in Advanced Air Mobility

Vincent White, U.S. Department of Transportation Office of the Under Secretary for Policy, presiding
Sponsored By Executive Committee

Recent technology advances have heralded the next decade as the “Third Revolution in Aviation” following the Wright Brothers invention of powered flight in 1903 and the invention of the jet engine in the late 1940s. These new technologies feature electric-powered aircraft with “Advanced Air Mobility” which collectively can be passenger or cargo carrying small aircraft traveling at reasonably low altitudes over short distances. Although not yet in commercial operation, Advanced Air Mobility (AAM) has the potential to dramatically transform air travel in the United States and around the world in the years to come. This U.S. DOT-led session will focus on ongoing efforts to plan for the future of AAM in the United States. The presentation will introduce the concept of AAM, address the federal role in planning for these new operations, and outline some of the challenges inherent in implementing internationally leading new services. Presenters will explain how advanced air mobility can offer new and innovative means of accomplishing a wide variety of aviation operations and enable a broad scope of benefits across the public and private sectors. This workshop will feature a panel with senior federal officials and highlight the technological, engineering, research, and policy work necessary to enable new types of aviation. The session will address the federal coordination efforts necessary to achieve the multi-modal integration of new aviation concepts and highlight current and planned projects to prepare public and private stakeholders for new aviation markets.

3038



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Infrastructure Influence on Drivers

Sepehr Sabeti, Leidos, Inc., presiding
Sponsored By Standing Committee on Human Factors of Infrastructure Design and Operations

Using the ISO Detection Response Task to Measure the Cognitive Load of Driving Four Separate Vehicles on Two Distinct Roadways (TRBAM-24-00011) - B732

Francesco Biondi/University of Windsor, Amy McDonnell/University of Windsor, Joel Cooper/University of Windsor, David Strayer/University of Windsor

User Behaviors at Protected Intersections (TRBAM-24-00016) - B733

Kay Fitzpatrick/Texas A&M Transportation Institute, Maryam Shirinzad/Texas A&M Transportation Institute, Jeff Whitacre/Texas A&M Transportation Institute

Capacity Analysis at a Signalized Intersection Under Mixed Traffic Environment (TRBAM-24-00161) - B734

Yuehai Hu/Tongji University, Wanjing Ma/Tongji University, Chunhui Yu/Tongji University

An Assessment Framework for the Impact of Urban Driving Environment on Driver Stress (TRBAM-24-00335) - B735

Yuntao Ye/Southeast University, Jie He/Southeast University, Jinrong Hu/Southeast University, Shuang Sun/Southeast University, Xintong Yan/Southeast University, Chenwei Wang/Southeast University, Pengcheng Qin/Southeast University

Comprehensive Evaluation of Visual Guiding Systems for Enhancing Traffic Safety in Freeway Tunnels: An Improved Matter-Element Method with Case Study (TRBAM-24-00821) - B736

Shoushuo Wang/Guangzhou Maritime University, Haoran Zheng/Guangzhou Maritime University, Zhigang Du/Guangzhou Maritime University, Lei Han/Guangzhou Maritime University, Shiming He/Guangzhou Maritime University

Understanding Drivers' Compliance Behavior: Data-Driven Assessment of Longer Yellow Intervals (TRBAM-24-01059) - B742

Pouya Jalali Khalilabadi/The University of Arizona, Abolfazl Karimpour/The University of Arizona, Yao-Jan Wu/The University of Arizona, Simon Ramos/The University of Arizona

Do Dotted Extensions Help Guide Drivers at a Transition Area of a Partial-Shadowed Left Turn Lane?: An Investigation Based on Driver Eye Movement Behavior and Situational Awareness (TRBAM-24-01183) - B740

Lin-Kuei Huang/National Chiao Tung University, Tong Lin/National Chiao Tung University, Kun-Feng Wu/National Chiao Tung University

Behavioral Characteristics of Drivers Under Signal and Unsignal Control Urban Intersections (TRBAM-24-01238) - B743

Sirou Qu/Kunming University of Science and Technology, Fengxiang Guo/Kunming University of Science and Technology

(continued)

Lateral Acceleration: Research at a Large Radius Curve of a Diamond Interchange (TRBAM-24-01369) - B744

Antonios Trakakis/National Technical University of Athens (NTUA), Konstantinos Apostoleris/National Technical University of Athens (NTUA), Basil Psarianos/National Technical University of Athens (NTUA)

Integrating Driver Behavior and Characteristics in Safety Predictive Methods for Freeway Facilities

(TRBAM-24-01475) - B745

Jimoku Salum/SRF Consulting, Francisca Kasubi/SRF Consulting, Hellen Shita/SRF Consulting, Lucia Andrew/SRF Consulting, Priyanka Alluri/SRF Consulting

Insights into Drivers' Gaze: Unraveling Eye Glance Patterns at Dynamic and Normal Intersection Approaches

(TRBAM-24-01583) - B747

Adjé Jérémie Alagbé/Zhejiang University, Yang Jiang/Zhejiang University, Congcong Bai/Zhejiang University, Mengtao Zhou/Zhejiang University, Chengcheng Yang/Zhejiang University, Donglei Rong/Zhejiang University, Wenbin Yao/Zhejiang University, Sheng Jin/Zhejiang University

Vehicle Path Planning Based on the Improved Safety Potential Field Model in Toll Plaza's Lane Marking and Non-Lane Marking Diverging Area (TRBAM-24-02019) - B750

Siqi Zhong/Changsha University, Lu Xing/Changsha University, Xin PEI/Changsha University, Chunyang Han/Changsha University, Sirui Guo/Changsha University, Zhonggen Zhang/Changsha University

Drivers' Reaction and Yielding Behavior on High-Visibility Crosswalks: A Hazard-Based Duration Approach with Correlated Grouped Random Parameter and Means Heterogeneity (TRBAM-24-02179) - B752

Kaiser Mahmood/Beta Group, Inc., Sheikh Ahmed/Beta Group, Inc., Jiajun Pang/Beta Group, Inc., Md Tawfiq Sarwar/Beta Group, Inc., Irina Benedyk/Beta Group, Inc., Panagiotis Anastasopoulos/Beta Group, Inc.

The Impact of Building-Induced Visibility Restrictions on Intersection Accidents (TRBAM-24-02409) - B753

Hanlin Tian/Imperial College London, Yuxiang Feng/Imperial College London, Wei Zhou/Imperial College London, Anupriya -/Imperial College London, Mohammed Quddus/Imperial College London, Yiannis Demiris/Imperial College London, Panagiotis Angeloudis/Imperial College London

The Impact of Emergency Vehicle Marking Characteristics and Wearable Lights on Driver Responses (TRBAM-24-02482) - B772

John Bullough/Icahn School of Medicine at Mount Sinai, Scott Parr/Icahn School of Medicine at Mount Sinai

A Takeover Risk Assessment Approach Based on an Improved ANP-XGBoost Algorithm for Human-Machine Driven Vehicles (TRBAM-24-02669) - B754

Tao Wang/Guilin University of Electronic Technology, Yaxi Han/Guilin University of Electronic Technology, Wenyong Li/Guilin University of Electronic Technology, Xiaofei Ye/Guilin University of Electronic Technology, Shurong Huang/Guilin University of Electronic Technology, Guan Lian/Guilin University of Electronic Technology

Drivers' Speed Characteristics from Entrance to Underground Merging Area of Multi-Entry Underground Tunnels (TRBAM-24-02828) - B755

Feng Sun/Shandong University of Technology, Fangtong Jiao/Shandong University of Technology, Zhenwei Shi/Shandong University of Technology, Pingfan Li/Shandong University of Technology, Dalong Li/Shandong University of Technology

Investigating the Effects of Variable Speed Limit Strategies on Driving Behavior and Traffic Safety

(TRBAM-24-03251) - B757

Shuyi Zhao/Tongji University, Junhua Wang/Tongji University, Ting Fu/Tongji University, Qiangqiang Shangguan/Tongji University, Hao Song/Tongji University

Modeling Heterogeneous in Discretionary Lane Change Incorporating Bounded Rationality (TRBAM-24-03399) - B759

Bingtong Wang/Southeast University, Shunchao Wang/Southeast University, Jingcai Yu/Southeast University, Zhibin Li/Southeast University, Tony Qiu/Southeast University, Yang Liu/Southeast University

Research on Influence Analysis and Optimization of Guide Signs in Dense Interchange Sections of Eight-Lane Freeway Based on the Non-Integer Rank Rock Structure Rating Method (TRBAM-24-03463) - B737

Qiqi Liu/Beijing University of Technology, Jianling Huang/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Jia Li/Beijing University of Technology, Yanan Chen/Beijing University of Technology, Tengpeng Liu/Beijing University of Technology

Modeling Human-Like Driving Behavior in Approaching Intersections Across Diverse Traffic Flow Scenarios (TRBAM-24-03468) - B758

Wenxiang Xu/Tongji University, Zhazhou Lin/Tongji University, Ting Fu/Tongji University, Xilin Luo/Tongji University

Research on the Characteristics and Optimization of the Impact of Straight Lane Offset on Driving Behavior at Intersections Based on Driving Simulation Technology (TRBAM-24-03497) - B739

Xiangmin Liu/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Yang Bian/Beijing University of Technology, Chengyu Wu/Beijing University of Technology

Impact of External Human–Machine Interface on Alleviation of Human–Machine Conflict: Taking Unprotected Left-Turn Scenario as an Example (TRBAM-24-03622) - B775

Linkun Liu/Tongji University, Yiru Liu/Tongji University, Jian Sun/Tongji University, Ye Tian/Tongji University, He Zhang/Tongji University

Research on the Influence of Discontinuous Tunnel Murals on Drivers' Visual Characteristics Based on Driving Simulator Study (TRBAM-24-03735) - B738

Wenhui Dong/Beijing University of Technology, Zhiqing Zhang/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Jia Li/Beijing University of Technology, Qiqi Liu/Beijing University of Technology

Performance Analysis of Active Prevention and Control Strategy for Operation Risk of Foggy Bridge (TRBAM-24-03766) - B748

Yibo Dai/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Sen Luan/Beijing University of Technology, Yuejia Wang/Beijing University of Technology

Study on the Tendency of Vehicle Following in Foggy Bridge Under Dynamic and Static Risk Superposition (TRBAM-24-03767) - B749

Yuejia Wang/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Sen Luan/Beijing University of Technology, Yibo Dai/Beijing University of Technology, Cuishan Peng/Beijing University of Technology

Examining Drivers' Perceptions and Preferences Regarding Vehicle to Infrastructure Interactions within Connected Vehicle Technology (TRBAM-24-04123) - B773

Taniya Sultana/Louisiana State University, Hany Hassan/Louisiana State University, Brian Wolshon/Louisiana State University

Factors Affecting Driver's Brake Pedal Performance Along Horizontal Curves: A Tobit Regression Approach (TRBAM-24-04569) - B762

Aneena Mohan/Trinity College Dublin, Tushar Choudhari/Trinity College Dublin, Avijit Maji/Trinity College Dublin

Modeling Social Situation Awareness in Driving Interactions (TRBAM-24-04647) - B763

Navit Klein/Cornell University, Hauke Sandhaus/Cornell University, David Goedicke/Cornell University, Avi Parush/Cornell University, Wendy Ju/Cornell University

Analysis of Driving Performance on Hilly Roads: A Systematic Review (TRBAM-24-05872) - B764

Shivam Sharma/Indian Institute of Technology, Roorkee, Pushpa Choudhary/Indian Institute of Technology, Roorkee

Understanding the Relationship Between Road Users and Roadway Infrastructure in Ghana: A Quantitative Video-Driven Study (TRBAM-24-06070) - B765

Brianna Lawton/Iowa State University, Shauna Hallmark/Iowa State University, Guillermo Basulto-Elias/Iowa State University, Daniel Obeng/Iowa State University, Williams Ackaah/Iowa State University

The Impact of Information Delivery System in Tunnels Depending on Lighting Intensity and Speed Limit (TRBAM-24-06224) - B767

Jaehyuck Lim/Korea Advanced Institute of Science & Technology(KAIST), Hyunchul Park/Korea Advanced Institute of Science & Technology(KAIST), Taeho Oh/Korea Advanced Institute of Science & Technology(KAIST), Inhi Kim/Korea Advanced Institute of Science & Technology(KAIST)

Modelling Drivers' Dilemma at Un-Signalized T-Intersections Under Mixed Traffic Conditions: A Case Study from Emerging Countries (TRBAM-24-06370) - B768

Nishant Pawar/Indian Institute of Technology, Bombay, Shrinivas Arkatkar/Indian Institute of Technology, Bombay

Analysing Drivers Visual Performances towards Intersection Conflict Warning System: A Driving Simulator Study (TRBAM-24-06435) - B769

Yashasvi Rachakonda/Indian Institute of Technology, Hyderabad, Digvijay Pawar/Indian Institute of Technology, Hyderabad

Examining Driver behavior at Freeway Diverge Areas Adjoining Tunnels: A Driving Simulation Study (TRBAM-24-06460) - B774

Depeng Niu/University of British Columbia, Hanfei Zhang/University of British Columbia, Yang Li/University of British Columbia, Zhongyin Guo/University of British Columbia

3039



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Pedestrians, Bicyclists, and Driver Interactions

Sanaz Motamedi, University of Florida, presiding

Sponsored By Standing Committee on Human Factors of Infrastructure Design and Operations

Evaluating Drivers' Braking Behavior at Mid-Block Pedestrian Crosswalks Using Video Data and a Mixed Logit Model (TRBAM-24-00109) - B780

Md Jamil Ahsan/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Nafis Anwari/University of Central Florida, Natalia Barbour/University of Central Florida

Evaluating Driving Safety Using Real-World Autonomous Vehicle Data in Seoul Autonomous Mobility Testbed (TRBAM-24-00157) - B781

Hoseon Kim/Hanyang University, Young Jo/Hanyang University, Minkyung KIM/Hanyang University, Cheol Oh/Hanyang University, Seolyoung Lee/Hanyang University

The Importance of Consistent Perceptual Information on Service Vehicles for Safe Driving (TRBAM-24-02533) - B782

John Bullough/Icahn School of Medicine at Mount Sinai, Mark Rea/Icahn School of Medicine at Mount Sinai

Investigating Driver Avoidance Behavior Under Pedestrian-Vehicle Conflicts in the Visual Blind Area: A Driving Simulator Study (TRBAM-24-03448) - B783

Changshuai Wang/Southeast University, Yongcheng Shao/Southeast University, Tong Zhu/Southeast University

Pedestrian and Bicycle Conspicuity in the Second Strategic Highway Research Program Naturalistic Driving Study (TRBAM-24-03533) - B784

Patricia Tice/ProFound Insights, Inc, Sudipta Dey Tirtha/ProFound Insights, Inc

Corner-Case Scenarios of Vulnerable Road Users for the Development of Automated Vehicles: A Data-Driven Framework (TRBAM-24-04666) - B786

Huizhong Guo/University of Michigan, Transportation Research Institute, Zifei Wang/University of Michigan, Transportation Research Institute, Brian Lin/University of Michigan, Transportation Research Institute, Fred Feng/University of Michigan, Transportation Research Institute, Feng Zhou/University of Michigan, Transportation Research Institute, Rini Sherony/University of Michigan, Transportation Research Institute, Shan Bao/University of Michigan, Transportation Research Institute

An Evaluation of Driver Comprehension of the Pedestrian Hybrid Beacon (TRBAM-24-04984) - B787

Angelina Caggiano/University of Massachusetts, Amherst, Jaji Pamarthi/University of Massachusetts, Amherst, Tracy Zafian/University of Massachusetts, Amherst, Michelle Deng/University of Massachusetts, Amherst, Kirsten Johnson/University of Massachusetts, Amherst, Francis Tainter/University of Massachusetts, Amherst, Michael Knodler/University of Massachusetts, Amherst

Understanding Heavy Braking in Vehicles While Approaching Pedestrian Crosswalks: A Survival Analysis Perspective (TRBAM-24-05129) - B788

Kaliprasana Muduli/Indian Institute of Technology, Roorkee, Anshul Maurya/Indian Institute of Technology, Roorkee, Indrajit Ghosh/Indian Institute of Technology, Roorkee

Smart Leading Pedestrian Intervals (LPIs): A Deep Reinforcement Learning Control Strategy for Determining Optimal LPIs (TRBAM-24-05991) - B789

Yingfan Gu/University of Cincinnati, Zhixia Li/University of Cincinnati

Investigating and Modeling Motorized and Non-Motorized Interaction Behavior in Shared Spaces of Intersections (TRBAM-24-06090) - B785

Zhangcun Yan/Tongji University, Lishengsha Yue/Tongji University, Nicolas Saunier/Tongji University, Jian Sun/Tongji University

3040



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Traffic Control Devices 2024

Angela Kargel, Oregon Department of Transportation, presiding

Sponsored By Standing Committee on Traffic Control Devices

This session is a collection of traffic control device related research covering traffic signals and digitized infrastructure.

Field Assessment of Variable Left Turn Mode by Time of Day for Intersections Being Upgraded with Flashing Yellow Arrow Signal Heads and Offset Left Turn Lanes (TRBAM-24-00515) - B726

Pranesh Biswas/University of South Alabama, Min-Wook Kang/University of South Alabama, Md. Rezwon Hossain/University of South Alabama, Moynur Rahman/University of South Alabama

Field Evaluation of Change and Clearance Intervals Leading to a Left-Turn Flashing Yellow Arrow Indication (TRBAM-24-04233) - B728

Boris Claros/University of Wisconsin, Madison, Madhav Chitturi/University of Wisconsin, Madison, Andrea Bill/University of Wisconsin, Madison, Francis Tainter/University of Wisconsin, Madison, Michael Knodler/University of Wisconsin, Madison, David Hurwitz/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison

A Proactive Protected Left Turn Warrant Framework (TRBAM-24-04522) - B729

Craig Milligan/Miovision, Amanda Pushka/Miovision, Joel Penner/Miovision, Ilyas Nisar/Miovision

Analyzing Red Light Runners with Speed-Space Diagrams and Introducing Dynamic All-Red Extension for Crash Prevention (TRBAM-24-06010) - B717

Md. Rezwan Hossain/University of South Alabama, Min-Wook Kang/University of South Alabama, Moynur Rahman/University of South Alabama, Pranesh Biswas/University of South Alabama

An Assessment of Police Officers' Manual Traffic Control Operations During Special Event Traffic Using Signal Performance Measures Data (TRBAM-24-06193) - B719

Vamshi Animalla/University of Alabama, Alexander Hainen/University of Alabama, Elsa Tedla/University of Alabama, Jason Taylor/University of Alabama, Scott Parr/University of Alabama, Brian Wolshon/University of Alabama

An Investigation into Digitized Traffic Control Infrastructure for Autonomous Vehicles: Are We Ready Yet? (TRBAM-24-05006) - B718

Dayong Wu/Texas A&M Transportation Institute, Tianchen Huang/Texas A&M Transportation Institute, Xiao Li/Texas A&M Transportation Institute, Xinyue Ye/Texas A&M Transportation Institute, Ciyun Lin/Texas A&M Transportation Institute

Evaluation of Traffic Signs Placement Readiness for Autonomous Vehicles Using Point Cloud Data (TRBAM-24-05966) - B727

Maged Gouda/University of Alberta, Karim El-Basyouny/University of Alberta

3041



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

2024 Doctoral Student Research in Transportation Operations and Traffic Control

Huaguo Zhou, Auburn University, presiding

Michael Knodler, University of Massachusetts, Amherst, presiding

Sponsored By Standing Committee on Traffic Control Devices, Standing Committee on Intelligent Transportation Systems, Standing Committee on Freeway Operations, Standing Committee on Traffic Signal Systems, Standing Committee on Vehicle-Highway Automation, Standing Committee on Traffic Flow Theory and Characteristics

This annual session consists of poster presentations by doctoral students on cutting-edge research related to transportation operations and traffic control, providing them with a platform to showcase their skills.

Novel Framework to Address Algorithmic Bias in Intelligent Transportation Systems Applications (P24-20945) - B716

Mustafa Attallah/Saint Louis University

Driver Merging and Lane Utilization Behavior Under Zipper Merge Lane Control (P24-20946) - B725

Gagan Gupta/Michigan State University

Human Factors Study on the Use and Effectiveness of Innovative Safety Messages on Dynamic Message Signs (P24-20947) - B715

MD Rezwan Hossain/University of Central Florida

Optimal Highway Incident Operation with Active Traffic Management and Connected Automated Vehicle (P24-20948) - B724

Hongjae Jeon/NRC Research Associate at FHWA

Evaluation of Dynamic Message Sign Messages on Driver Behavior at Bridges During Winter Weather Conditions (P24-20949) - A323

Sagar Keshari/Michigan State University

Modeling Driver Interactions Between Emergency Vehicle and Non-Emergency Vehicles (P24-20950) - B714

Gopikrishnan Nair Suresh Kumar/Georgia Institute of Technology

Evaluation of Transit Signal Priority Strategies (P24-20951) - B723

Dickens Kwesiga/Georgia Institute of Technology

A Cutting-Edge Solution for Intrusion Detection Using Hybrid Quantum-Classical Computing (P24-20952) - B713

Mahdi Manavi/University of Houston

(continued)

Exploring Cooperative Traffic Signal and Control System with Connectivity Using Multi-Agent Reinforcement Learning (P24-20953) - B722

Donghee Oh/Hanyang University, Ansan

Evaluation of Speed Feedback Trailers at Freeway Work Zone Crossovers (P24-20954) - A321

Sakar Pahari/Michigan State University

Extending Ramp Metering Control to Mixed Autonomy Traffic Flow with Varying Degrees of Automation (P24-20955) - B712

Mingfeng Shang/University of Minnesota

Incorporation of the Length-Based, Cell-State Framework Toward the Simulation and Prediction of Large-Scale Freeway Traffic Dynamics (P24-20956) - B721

Brian Staes/Oregon State University

Traffic Signal Optimization with Connected Vehicle Trajectories (P24-20957) - B711

Xingmin Wang/University of Michigan

Electrifying Middle-Mile Truck Fleets with Minimal Infrastructure Requirements (P24-20958) - B720

Xuanke Wu/University of South Carolina

How Did the Pedestrian Cross the Road?: Observational and Recruited Participant Studies of Pedestrian Behavior at Signalized Intersections (P24-20959) - B710

Amy Wyman/Oregon State University

Development and Assessment of Trajectory-Based Arrivals on Red for Arterial Signal Coordination Performance Evaluation (P24-20960) - A320

Jianyuan Xu/University of Nevada, Reno

3042



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Work Zone Safety and Operations 2024

Kristian Pedersen, Danish Road Directorate, presiding

Sponsored By Standing Committee on Traffic Control Devices

This session is a collection of work zone safety and operations research covering crash analysis, merging characteristics, queuing, headway, speed management, and innovative traffic control devices.

Enhancing Work Zone Safety: A Focus on Crash Severity of the Key Work Zone Areas Using Regression and Text Mining Approach (TRBAM-24-04651) - B730

Boniphace Kutela/Texas A&M Transportation Institute, Norris Novat/Texas A&M Transportation Institute, Meshack Mihayo/Texas A&M Transportation Institute, Frank Ngeni/Texas A&M Transportation Institute, Emmanuel Kidando/Texas A&M Transportation Institute, Robert Adarkwa/Texas A&M Transportation Institute

Exploring Factors Affecting Casualty in Work Zone Fatal Crashes Along Urban Freeways (TRBAM-24-05371) - A330

Hellen Shita/Florida International University, Abdallah Kinero/Florida International University, Mostafa Soltaninejad/Florida International University, John Kodi/Florida International University, Priyanka Alluri/Florida International University

Work Zone Safety Analysis: Evaluating Rear-End Crash Risk with Extreme Value Theory (TRBAM-24-01572) - A380

Prathamesh More/Indian Institute of Technology, Guwahati, Jino Therattil/Indian Institute of Technology, Guwahati, Nipjyoti Bharadwaj/Indian Institute of Technology, Guwahati

Driver Preference of Merging Strategies at Work Zones (TRBAM-24-06261) - B731

Sajani Dias Wickramaratne Siriwardene/Deakin University, Mahmud Ashraf/Deakin University, Ashim Debnath/Deakin University

Optimal Lane-Merging Control Strategies for Promoting Driving Behavior in Freeway Work Zones: A Driving Simulation Study (TRBAM-24-05180) - A331

Longkai Gao/China Ministry of Transport, Xiaohua Zhao/China Ministry of Transport, Nale Zhao/China Ministry of Transport, Jiahui Li/China Ministry of Transport, Siyuan Hao/China Ministry of Transport

PID-Based Freeway Work Zone Merge Control with Traffic State Prediction Under Mixed Traffic Flow of Connected and Automated Vehicles and Manual Vehicles (TRBAM-24-03295) - A352

Sunho Kim/Seoul National University, Yongju Kim/Seoul National University, Youngho Kim/Seoul National University, Chungwon Lee/Seoul National University

(continued)

Assessing the Impact of Road Disruption on Freeway Ramp Merging Behavior: An Exploratory Virtual Reality–Simulated Study with Work Zone Scenarios (TRBAM-24-01728) - A372

Zheng Xu/Monash University, Tanghan Jiang/Monash University, Nan Zheng/Monash University

Anti-Tailgating Messages for Encouraging Safe Spacing in Work Zones (TRBAM-24-04997) - A332

Minsoo Oh/Iowa State University, John Shaw/Iowa State University, Jing Dong-O'Brien/Iowa State University

The Effect of Advance Warning Systems on Headway Distributions in Rural Freeway Work Zones (TRBAM-24-04499) - A343

Li Zhao/University of Nebraska, Lincoln, Laurence Rilett/University of Nebraska, Lincoln, Ernest Tufuor/University of Nebraska, Lincoln

Development of a Methodology for Assessing Work Zone Queue Accuracy Using Probe Data (TRBAM-24-04374) - A362

Erin Robartes/Virginia Transportation Research Council, Michael Fontaine/Virginia Transportation Research Council

Usability Assessment of Worker-Centered Augmented Reality for Highway Work Zone Safety (TRBAM-24-04505) - A342

Sepehr Sabeti/University of North Carolina, Charlotte, Nichole Morris/University of North Carolina, Charlotte, Omidreza Shoghli/University of North Carolina, Charlotte

Evaluating the Combined Use of Speed Feedback Trailers and Law Enforcement Vehicles at Freeway Work Zone Lane Closures (TRBAM-24-03916) - A322

Sakar Pahari/Michigan State University, Sagar Keshari/Michigan State University, Myles Overall/Michigan State University, Sarah Premo/Michigan State University, Magdalena Cavka/Michigan State University, Md Mahmud/Michigan State University, Timothy Gates/Michigan State University, Peter Savolainen/Michigan State University

Modeling and Operational Evaluations of Driveway Assistance Device System for Lane Closure on Two-Lane Highway Work Zone (TRBAM-24-02184) - A353

MM Shakiul Haque/University of Nebraska, Lincoln, Aemal Khattak/University of Nebraska, Lincoln

Improved Temporary Traffic Control Guidance for Mobile Operations on Two-Lane Roadways (TRBAM-24-00230) - A382

LuAnn Theiss/Texas A&M Transportation Institute, Gerald Ullman/Texas A&M Transportation Institute, Jon Jackels/Texas A&M Transportation Institute

Evaluation of a Leader-Follower Truck Mounted Attenuator System (TRBAM-24-00332) - A381

Henry Brown/University of Missouri, Columbia, Praveen Edara/University of Missouri, Columbia, Carlos Sun/University of Missouri, Columbia, Ho Jun Baek/University of Missouri, Columbia, Zhu Qing/University of Missouri, Columbia, Jeffrey Kupko/University of Missouri, Columbia

The Effect of Guardian Angel™ on Driver Behaviors and Perceptions (TRBAM-24-00018) - A383

Jocelyn Parong/Battelle Memorial Institute, Rama Boyapati/Battelle Memorial Institute

Toward Smart Work Zones: A Connectivity Approach for Efficient Traffic Data Dissemination (TRBAM-24-03586) - A363

Mariam Nour/University of Western Ontario, Mohamed Zaki/University of Western Ontario, Mohamed Abdel-Aty/University of Western Ontario

Muti-Objective Optimization of Highway Work Zones Considering Safety, Mobility, and Project Cost (TRBAM-24-01587) - A373

Fadi Shahin/Braude College, Wafa Elias/Braude College, Tomer Toledo/Braude College

3043



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Access Management

Grant Schultz, Brigham Young University, presiding

Sponsored By Standing Committee on Access Management, Subcommittee on Access Management Research

The Causal Impact of Smart Loading Zones on Traffic Speed (TRBAM-24-01432) - B709

Tao Tao/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

Safety Assessment of Commercial Driveways Along Major Corridors in Florida (TRBAM-24-02310) - B708

Cong Chen/University of South Florida, Elzbieta Bialkowska-Jelinska/University of South Florida, Kristine Williams/University of South Florida, Pei-Sung Lin/University of South Florida, Tia Boyd/University of South Florida

Generation and Evaluation of Innovative Intersection Designs (TRBAM-24-05618) - B707

Jiangling Wu/Henan University, Amit Kumar Singh/Henan University, Yongfeng Wang/Henan University, Linjie Tian/Henan University, Qiang He/Henan University

(continued)

Metrics, Data, and Interventions to Manage the Curb: Case Studies in Los Angeles, California; Pittsburgh, Pennsylvania; and Santa Monica, California (TRBAM-24-06091) - B706

Alejandro Henao/National Renewable Energy Laboratory (NREL), Shagun Mittal/National Renewable Energy Laboratory (NREL), Vinay Amatya/National Renewable Energy Laboratory (NREL), Ruqayya Zakaria/National Renewable Energy Laboratory (NREL), Kelly Ferguson/National Renewable Energy Laboratory (NREL), Luca Basilone/National Renewable Energy Laboratory (NREL), Joshua Sperling/National Renewable Energy Laboratory (NREL)

3044



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Transportation Planning, Policy, and Processes

Jenny Humphreys, CDM Smith, presiding

Sponsored By Standing Committee on Transportation Planning Policy and Processes

This session will include poster presentations for a wide range of topics related to transportation planning, policy, and processes.

Peer Exchange for Improving the Accuracy of the Engineer's Estimate for Highway Improvement Projects (TRBAM-24-00149) - A312

Gary Whited/University of Wisconsin, Madison, Sarah Abdellatif/University of Wisconsin, Madison, Steven Krebs/University of Wisconsin, Madison, Awad Hanna/University of Wisconsin, Madison

Highway Transportation Asset Criticality Estimation Leveraging Stakeholder Input Through an Analytical Hierarchy Process (TRBAM-24-00268) - A313

Kwadwo Amankwah-Nkyi/University of Arkansas, Fayetteville, Sarah Hernandez/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville

Content Analysis of Chinese Cities' 5-Year Plan Transport Policy Documents (TRBAM-24-00626) - A292

Meng Guo/Southeast University, Qingyang Li/Southeast University, Chenyang Wu/Southeast University, Scott Le Vine/Southeast University, Gang Ren/Southeast University

Development of an Investment Plan to Turn Park and Ride Lots into Mobility Hubs (TRBAM-24-00749) - A293

Zhongren Wang/California Department of Transportation, Tom Choe/California Department of Transportation, Bill McCullough/California Department of Transportation, Said Ismail/California Department of Transportation, Benjamin Rodriguez/California Department of Transportation, Rupinder Jawanda/California Department of Transportation, Joseph Rouse/California Department of Transportation

Exploring the Nexus Between Low-Carbon Urban Mobility and Built Environment Attributes: Insights from Beijing (TRBAM-24-02206) - A300

Liyang Hu/Southeast University, Jianke Cheng/Southeast University, Weijie Chen/Southeast University, Hao Wu/Southeast University, Zhirui Ye/Southeast University

Planning for Disruption: A Systematic Literature Review of Local Agencies' Response to Autonomous Vehicles Using the Planned Behavior Theory (TRBAM-24-04474) - A301

Quan Sun/Texas A&M University, Wei Li/Texas A&M University, Jenny Nguyen/Texas A&M University

Views from the Statehouse: Survey Results from State Legislative Committee Members (TRBAM-24-05117) - A302

Andrew Waxman/University of Texas, Austin, Gian-Claudia Sciara/University of Texas, Austin

Examining Contingency and Inflation Practices Within Several Departments of Transportation in the United States (TRBAM-24-05379) - A303

Abdullah Alsharef/King Saud University, Daniel Findley/King Saud University, Edward Jaselskis/King Saud University, Thomas Dudley/King Saud University, Kihyun Pyo/King Saud University, Guangchuan Yang/King Saud University

A Systematic Review of Safe Routes to School Program: A 10 Principle Policy Effectiveness Framework for Future Investments (TRBAM-24-06100) - A310

Meng Yuan/George Mason University, Alireza Ermagun/George Mason University

Innovation Diffusion and Supply Curve Design in EV Charging Networks: A Continuous-Time Fluid Queue and Discrete Flow Refueling Location Modeling Approach (TRBAM-24-06218) - A311

Xiangyong Luo/Arizona State University, Michael Kubys/Arizona State University, Yudai Honma/Arizona State University, Mouna Kchaou-Boujelben/Arizona State University, Xuesong Zhou/Arizona State University

3045



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Passive Data Collection in Travel Surveys

Mitchell Fisher, MacroSys Research and Technology, presiding

Sponsored By Standing Committee on Travel Survey Methods

This session includes a wide variety of applications and techniques concentrating on the use of GSM- and GPS-collected data in travel surveys. This is a must-see session!

Stacking Learning Model for Motorized Travel Mode Identification Based on Cellular Signaling Data and Public Transit Routes Data (TRBAM-24-01473) - A233

Dongcheng Xie/Guiyang Municipal Commission of Transport, Fei Yang/Guiyang Municipal Commission of Transport, Peng Sun/Guiyang Municipal Commission of Transport, Hainan Liu/Guiyang Municipal Commission of Transport, Yanchen Wang/Guiyang Municipal Commission of Transport, Yu Zhong/Guiyang Municipal Commission of Transport

Detecting Transportation Modes Using Sparse and Noisy Smartphone Location Data in the Latin American Context (TRBAM-24-02439) - A232

Mohammad Amin Abedini/Go Transit/Metrolinx, Sanjana Hossain/Go Transit/Metrolinx, Cesar Maia De Souza/Go Transit/Metrolinx, James Vaughan/Go Transit/Metrolinx, Eric Miller/Go Transit/Metrolinx

Inferring Residential and Working Locations from Massive Mobile Phone Data (TRBAM-24-02771) - A231

Yang Zhou/Tongji University, Quan Yuan/Tongji University, Chao Yang/Tongji University, Tangyi Guo/Tongji University

Investigating the Impact of Smartphone App Use on Activity-Travel Participations: Evidence from 1-Week App Use Diary in Indonesian Cities (TRBAM-24-03432) - A200

Muhamad Rizki/University of Natural Resources and Life Sciences, Tri Basuki Joewono/University of Natural Resources and Life Sciences, Yusak Susilo/University of Natural Resources and Life Sciences

Exploring the Impact of Varying GPS Trajectory Frequencies and Class Balancing on Travel Mode Detection (TRBAM-24-03537) - A230

Reem Alolabi/Hiroshima University, Fahima Lailul Ula/Hiroshima University, Varun Varghese/Hiroshima University, Makoto Chikaraishi/Hiroshima University

Processing and Validating Passively Generated Mobile Phone Data for Commute Pattern Estimation: A Case Study from Chicago (TRBAM-24-05395) - A213

Tianxing Dai/Northwestern University, Gretchen Bella/Northwestern University, Peeter Kivestu/Northwestern University, Amanda Stathopoulos/Northwestern University, Yu Nie/Northwestern University

Count Multivariate Metrics: Estimate Mode Count and Distance Uncertainty from Phone Sensors (TRBAM-24-05785) - A223

Hui Xian Grace Lim/University of Central Florida, K. Shankari/University of Central Florida, Michael Allen/University of Central Florida

From Simple Labels to Time-Use Integrations: Supporting the Spectrum of Qualitative Travel Behavior Data (TRBAM-24-05818) - A222

Jack Greenlee/National Renewable Energy Laboratory, Alireza Raei/National Renewable Energy Laboratory, Sebastian Barry/National Renewable Energy Laboratory, Maliheh Tabasi/National Renewable Energy Laboratory, Amarin Siripanich/National Renewable Energy Laboratory, Taha Rashidi/National Renewable Energy Laboratory, K. Shankari/National Renewable Energy Laboratory

3046



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Current and Emerging Methods in Travel Surveys

Katherine Asmussen, University of Texas, Austin, presiding

Sponsored By Standing Committee on Travel Survey Methods

This session includes papers on household travel, panel and stated preference surveys as well as advances in travel survey-relevant simulation and data imputation.

Using Small Area Estimation to Produce Reliable Transportation Statistics: The Case of Household Trips Estimation at the Census Tract Level (TRBAM-24-00843) - A221

Mohammad Bilal Mohammad Al-Khasawneh/University of Maryland, College Park, Cinzia Cirillo/University of Maryland, College Park

From Trips to Stages: A Methodology for Generating Stage Information in Trip-Based Household Travel Surveys (TRBAM-24-01636) - A243

Caroline Koszowski/TU Dresden, Stefan Hubrich/TU Dresden, Rico Wittwer/TU Dresden, Regine Gerike/TU Dresden

A Multi-Region Perspective on Adapting to a Recurrent Household Travel Survey Program (TRBAM-24-02567) - A242

Suzanne Childress/Resource Systems Group, Inc. (RSG), Brian Lee/Resource Systems Group, Inc. (RSG), Leta Huntsinger/Resource Systems Group, Inc. (RSG), Jonathan Ehrlich/Resource Systems Group, Inc. (RSG), Abigail Rosenson/Resource Systems Group, Inc. (RSG), Caroline Wood/Resource Systems Group, Inc. (RSG), Mark Bradley/Resource Systems Group, Inc. (RSG)

A Novel Data Fusion Method to Leverage Passively Collected Mobility Data in Generating Spatially Heterogeneous Synthetic Population (TRBAM-24-03030) - A211

Khoa Vo/National University of Singapore, Eui-Jin Kim/National University of Singapore, Prateek Bansal/National University of Singapore

Constructing the Data Panel by Linking Travel Survey and Mobile Device Location Data (TRBAM-24-03798) - A220

Guangchen Zhao/University of Maryland, College Park, Mohammad Bilal Mohammad Al-Khasawneh/University of Maryland, College Park, Tiziana Tuoto/University of Maryland, College Park, Cinzia Cirillo/University of Maryland, College Park

How Effective Are Marker Variables at Imputing Attitudes?: An External Evaluation Using Vehicle Ownership Models (TRBAM-24-04220) - A241

Jason Soria/Georgia Institute of Technology, Patricia Mokhtarian/Georgia Institute of Technology

Preferences for Autonomous Shuttles as a Last-Mile Service in Business Parks: Results of a Stated Choice Experiment (TRBAM-24-06183) - A250

Benoit Lecureux/LAET: Laboratoire Amenagement Economie Transports, Ouassim Manout/LAET: Laboratoire Amenagement Economie Transports, Louafi Bouzouina/LAET: Laboratoire Amenagement Economie Transports

The German Mobility Panel: Lessons Learned from a Longitudinal Travel Behavior Survey over 30 Years (TRBAM-24-06259) - A251

Bastian Chlond/Karlsruhe Institute of Technology (KIT), Lisa Ecke/Karlsruhe Institute of Technology (KIT), Miriam Magdolen/Karlsruhe Institute of Technology (KIT), Jan Vallee/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

Missing Typical Weekday in Travel Surveys: A Pseudo-Panel Approach to Explore Weekly Travel Patterns (TRBAM-24-06106) - A240

Md. Rifat Hossain Bhuiyan/Dalhousie University, Muhammad Habib/Dalhousie University

3047



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Recent Research Findings: The Effects of Information and Communication Technologies on Transportation Choices

Fariba Siddiq, University of California, Los Angeles, presiding

Sponsored By Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices

This session looks at the recent research findings that discusses the impacts of ICT on transportation choices.

Pandemic Experiences, Digital Technologies, and Impacts on Mobility Behavior in an Extreme Car-Dependent Island Community (P24-21001) - A100

Maria Attard/University of Malta

goDCgo, the District of Columbia's Transportation Demand Management Program: 2021–2022 Impact Evaluation (P24-21009) - A103

Lisa Kay Schweyer/Foursquare ITP

A New Workplace for a New Change: Understanding How Life Events Affect the Preferences of Alternative Work Locations in Singapore (P24-21010) - A110

Ana Moreno/Technical University of Munich

(continued)

Cross-Country Comparison of Telework Between Germany and the United States (P24-21011) - A111

Anna Reiffer/Karlsruhe Institute of Technology

Remote Revolution: How Teleworking Reshapes Work and Non-Work Tours Across Different Modes and Travel Styles (P24-21012) - A112

Harsh Shah/Ohio State University

Proposal of Self-Learning Algorithm Based on Domain Adaptation for Vehicle-Specific Traffic Measurement Artificial Intelligence (P24-21013) - A113

Kentaro Obara/Tokyo University of Science

Unveiling the Role of COVID-19 and Other Factors in Shaping Public Attitudes and Intentions to Use Autonomous Vehicles: Insights from the United States (P24-21014) - A120

Nikhil Menon/Pennsylvania State University, Harrisburg

The Impact of COVID-19 on Telecommuting: A Study of Likelihood and Preference (P24-21015) - A121

Brian Staes/Oregon State University

Drivers' Mobile Usage of Information and Communication Technologies in 2020 and 2023 (P24-21016) - A122

Yi-Ching Lee/George Mason University

Zooming in on the Impacts of Virtual Commutes: Investigating Telecommuting's Effects on Mobility, Inequality, and Sustainability (P24-21017) - A123

Nazanin Rezaei/University of California, Santa Cruz

Exploring the Distinctions and Similarities Between New Mobility Service and Public Transport Users: Insights from the Los Angeles Region (P24-21018) - A130

Xiatian Iogansen/University of California, Davis

Is Online Service Usage More of a Sociodemographic Phenomenon?: Exploring Equity Implications of Online Grocery, E-Shopping, and Restaurant Delivery Service Usage in a Suburban Context (P24-21019) - A131

Shaila Jamal/University of Toronto

Exploring the Factors Influencing Telework Status Before and During the COVID-19 Pandemic (P24-21020) - A132

Md. Mokhlesur Rahman/Syracuse University

Looking into the Future of the Transportation System in the United States: An Urban Perspective for Transportation Sustainability (P24-21021) - A133

Lewis Fulton/University of California, Davis

Navigating Post-Pandemic Urban Mobility: Unveiling Intentions for Shared Micro-Mobility Usage Across Three U.S. Cities (P24-21022) - A101

Ricardo Chahine/Purdue University

A Latent Class Analysis of Public Perceptions on Shared Mobility Barriers and Benefits (P24-21023) - A102

Ricardo Chahine/Purdue University

3048



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Resiliency in the Age of Disruption

Cole Kopca, University of Washington, presiding

Sponsored By Standing Committee on Strategic Management

Join AJE10 for a poster session on enhancing transportation system resilience and recovery. Explore metrics, scenario planning, policies, collaboration, case studies, and workforce strategies. Learn to build a more resilient transportation future.

Building a Better T: Equitable Public Engagement, Community Partnerships, and Agency Coordination During the Orange Line 30-Day Shutdown (P24-20234) - A290

Erica Blonde/HNTB Corporation, Patrick Marvin/HNTB Corporation

Framework for a Regional Transportation Systems Management and Operations Program (P24-20238) - A291

Taylor Dinehart/Center for Urban Transportation Research at USF, Jeffrey Kramer/USF Center for Urban Transportation Research, Tia Boyd/USF Center for Urban Transportation Research

Engaging Men in Creating a Culture for the Success and Advancement of Women in the Transportation Workforce (P24-20237) - A252

Gregory Erhardt/University of Kentucky, Rolf Moeckel/Technische Universität München: Technische Universität München, Andrea Erhardt/University of Kentucky

(continued)

NCHRP 08-151: Risk Management at State Departments of Transportation: Building Momentum and Sustaining the Practice: A Review of Current Research and Digital Content Development (P24-20241) - A253

Melissa Savage/Jacobs, Joe Zissman/Cambridge Systematics

Get the Best Estimate of Budget Needs: A Framework to Optimize Your Optimization Analysis (P24-20240) - A262

Oscar Daniel Galvis Arce/WDM USA

Riding the Electric Momentum: Stakeholder Dynamics in Electrified Bus Transit of a Developing Economy (P24-20242) - A263

Ann Mary Varghese/Indian Institute of Technology, Kharagpur, Rudra P Pradhan/IIT Kharagpur: Indian Institute of Technology Kharagpur

Uncertainty in Long-Range Transportation Planning: From Understanding to Action (P24-20243) - A272

Naomi Stein/EBP, Kyle Schroeckenthaler/EBP, Peter Hylton/High Street Consulting Group, LLC, Colleen Turner/Michael Baker International, Inc., Larry Redd/Redd Engineering

Transport Systems Resilience: Policy Developments and Research and Innovation in the European Union (TRBAM-24-03647) - A273

Ilias Cheimariotis/European Commission Joint Research Centre, Marcin Stepniak/European Commission Joint Research Centre, Konstantinos Gkoumas/European Commission Joint Research Centre, Chiara Lodi/European Commission Joint Research Centre

Integrating Equity in Transportation Scenario Planning: A Systematic Review (TRBAM-24-00040) - A280

Melrose Pan/Oak Ridge National Laboratory, Stephen Wong/Oak Ridge National Laboratory, Francis Tainter/Oak Ridge National Laboratory, Steve Woelfel/Oak Ridge National Laboratory, Alyssa Ryan/Oak Ridge National Laboratory

Connections, Detours, and Transfers: An Assessment System for the Resilience of Urban Public Transport in a Dual Carbon Context (TRBAM-24-04070) - A281

Keyuan Ding/Wuhan Institute of Technology, Ran Peng/Wuhan Institute of Technology, Hanbang Ning/Wuhan Institute of Technology, Xueliang Liu/Wuhan Institute of Technology

Promotion for Personal Carbon Account: An Evolutionary Game Analysis on Government–Enterprises Cooperation (TRBAM-24-05304) - A282

Yi Zhou/Tongji University, Jian Li/Tongji University

Governing Transit in a Decentralized Landscape (TRBAM-24-06173) - A283

David Weinreich/University of Bergen, Thomas Skuzinski/University of Bergen

3049



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

From Automated Vehicles to Wrong Way Driving: Research on Interchanges and Ramps

Brian Ray, Sunrise Transportation Strategies, LLC, presiding

Mohammad Amin, Jacobs, presiding

Sponsored By Standing Committee on Performance Effects of Geometric Design

Lane Marking Geometric Design Assessment for Autonomous Vehicles Using LiDAR Data (TRBAM-24-02277) - B662

Maged Gouda/University of Alberta, Karim El-Basyouny/University of Alberta

Approaching Minimal Risk Conditions for Highly Automated Vehicles: Geometric Design Criteria (TRBAM-24-03334) - B663

Alfredo Garcia/Universitat Politècnica de València, Francisco Camacho-Torregrosa/Universitat Politècnica de València, David Llopis-Castelló/Universitat Politècnica de València, Vicente Ferrer-Pérez/Universitat Politècnica de València, David McDonald/Universitat Politècnica de València

A New Vehicle-to-Vehicle Communication Technology Based on Binary Light Code (TRBAM-24-05733) - B664

Ke Ma/University of Wisconsin, Madison, Xiaopeng (Shaw) Li/University of Wisconsin, Madison, Peng Zhang/University of Wisconsin, Madison, Zhaohui Liang/University of Wisconsin, Madison, Te Xu/University of Wisconsin, Madison

Readiness Evaluation of Automated Vehicles in Urban Expressway On-Ramp (TRBAM-24-06269) - B665

Shuang Liu/Tongji University, Xuesong Wang/Tongji University, Xinchen Ye/Tongji University

Operational Design Domain of Automated Vehicles at Freeway Exit Terminals (TRBAM-24-03985) - B667

Xinchen Ye/Tongji University, Xuesong Wang/Tongji University, Salvatore Cafiso/Tongji University

Analysis of Geometric Design Factors Influencing Wrong-Way Entries at Partial Cloverleaf Interchange Terminals (TRBAM-24-01357) - B677

Huaguo Zhou/Auburn University, Qing Chang/Auburn University, Yukun Song/Auburn University

(continued)

Automated Design of Horizontal Alignment in Highway Interchanges: An Application of Artificial Intelligence Algorithms (TRBAM-24-01838) - B678

Boran Zhang/Southeast University, Hucheng Ding/Southeast University, Yibo Wang/Southeast University, Jiancong Chen/Southeast University, Jianchuan Cheng/Southeast University, Yunlong Zhang/Southeast University

Operational Design Domain for Automated Vehicles Left-Turn Maneuver at a Stop-Controlled Intersection (TRBAM-24-05478) - B679

Kibrom Haile/Tongji University, Xuesong Wang/Tongji University, Dingming Qin/Tongji University, Mohammed Quddus/Tongji University, Salvatore Cafiso/Tongji University

3050



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Various Geometric and Safety-Related Topics

Vichika Iravarapu, WSP, presiding

Richard Coakley, Jacobs, presiding

Sponsored By Standing Committee on Performance Effects of Geometric Design

Approach-Level Statistical Road Safety Modeling for Estimating the Effects of Road, Vehicle, and Occupant Characteristics on Crash Type and Injury Severity Outcomes at Signalized Intersections (TRBAM-24-05120) - B650

Michael Shea/University of Utah, Juan Medina/University of Utah

Assessing Corridor Safety Performance at Approaches to Freeway Interchanges Using Lane Change Data (TRBAM-24-00858) - B651

Maryam Shirinzad/Texas A&M Transportation Institute, Karen Dixon/Texas A&M Transportation Institute

Safety Performance of Indiana Barrier End Treatments: In-Service Evaluation Results (TRBAM-24-04319) - B652

Qiming Guo/Purdue University, Raul Pineda-Mendez/Purdue University, Andrew Tarko/Purdue University

Innovative Lane Design Method for Enhancing Intersection Capacity in Limited Road Space (TRBAM-24-01486) - B653

Yuqi Shi/Tongji University, Jiading, S. Ilgin Guler/Tongji University, Jiading, Jing Zhao/Tongji University, Jiading, Jichen Zhu/Tongji University, Jiading, Xiaoguang Yang/Tongji University, Jiading

Revisiting Lane Distribution Factors for Accurate Pavement Design: A Hierarchical Modeling Approach with Traffic Data Analysis in Georgia (TRBAM-24-02820) - B654

Oscar Lares/University of Georgia, Narges Tahaei/University of Georgia, Jidong Yang/University of Georgia, Sung-Hee Kim/University of Georgia, Mi Chorzepa/University of Georgia, Jewell Stone/University of Georgia, Ian Rish/University of Georgia, Eric Conklin/University of Georgia, wei li/University of Georgia

A Comparative Analysis of Interchange Types and Geometric Design Features to Mitigate Wrong Way Entries (TRBAM-24-01409) - B655

Huaguo Zhou/Auburn University, Qing Chang/Auburn University, Yukun Song/Auburn University

Age-Related Driver Injury Occurrence from Crashes at Combined Horizontal and Vertical Curve Segments (TRBAM-24-05685) - B656

Hellen Shita/Florida International University, Norris Novat/Florida International University, Francisca Kasubi/Florida International University, Norran Novat/Florida International University, Priyanka Alluri/Florida International University, Valerian Kwigizile/Florida International University

Analysis of the Usage Patterns in a Highway Merging Area (TRBAM-24-05921) - B657

Jaewon Choi/Seoul National University, Yang-Jun Joo/Seoul National University, Dong-Kyu Kim/Seoul National University, Hyun-Seok Lee/Seoul National University

Evaluation and Modeling of Truck Overtaking for Internal Combustion and Electric Vehicle Trucks: Application to Route-Level Performance (TRBAM-24-06197) - B658

Parth Deshpande/Indian Institute of Technology, Madras, Abhishek Raj/Indian Institute of Technology, Madras, Bhargava Chilukuri/Indian Institute of Technology, Madras, Shankar Subramanian/Indian Institute of Technology, Madras

Reliability Analysis of Intersection Sight Distance at Yield-Controlled Intersections in Mixed Vehicle Environments (TRBAM-24-05469) - B659

Sean Sarran/Carleton University, Yasser Hassan/Carleton University

Minimum Lengths of Acceleration Lanes Based on Truck Proportion and Level of Service: A Novel Framework (TRBAM-24-01882) - B668

Jiancong Chen/Southeast University, Jiahao Shen/Southeast University, Boran Zhang/Southeast University, Jianchuan Cheng/Southeast University, Yunlong Zhang/Southeast University

(continued)

Exploratory Analysis of Driving Behavior on the Horizontal Curves of Two-Lane Undivided Rural Highways Passing Through Mountainous Terrain (TRBAM-24-05884) - B669

V. A. Bharat Kumar Anna/IIT Delhi: Indian Institute of Technology Delhi, Mallikarjuna Chunchu/IIT Delhi: Indian Institute of Technology Delhi, R.D.K. Shallam/IIT Delhi: Indian Institute of Technology Delhi

3051



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Graduate Research Summaries

Amirarsalan Mehrara Molan, University of Mississippi, presiding

Sponsored By Standing Committee on Performance Effects of Geometric Design

Impact of Roundabout Design Features on Driver Behaviors in Alabama (P24-21074) - B686

Zijie Zhao/Auburn University

Modeling 85th Actual Speed Reduction for Tangent to Curve Transitions in Rural Two-Lane Highways (P24-21075) - B687

Mohd Atif/Indian Institute of Technology, Indore

Understanding the Potential Impacts of Connected and Autonomous Vehicles on Controlling Criteria for Road Geometric Design: A Review (TRBAM-24-01213) - B688

Md Mahmud Hossain/Auburn University, Mohammad Reza Abbaszadeh Lima/Auburn University, Huaguo Zhou/Auburn University

Analysis of Tangential and Side Friction Factors: Case Studies on Brazilian State Highways (24-00005) - B689

ANGELA MARTINS AZEVEDO/University of São Paulo

Enhancing Roadway Safety Through Speed Management Countermeasures (24-00003) - B675

Pravar Parashar/UMass Amherst: University of Massachusetts Amherst

Evaluating Benefits and Drawbacks of Intersections with Three-Phase Traffic Signals (P24-21088) - B674

Hayden Edwards/North Carolina Department of Transportation

3052



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advances in Roadside Safety

Gregory Kirchgessner, Xcessories Squared, presiding

Sponsored By Standing Committee on Roadside Safety Design

Crash Modification Factors of Rumble Strips Applied on Horizontal Curves of Two-Lane Rural Roads: A Propensity Scores Potential Outcomes Approach (TRBAM-24-00071) - B680

Tanveer Ahmed/Pennsylvania State University, University Park, Asif Mahmud/Pennsylvania State University, University Park, Vikash Gayah/Pennsylvania State University, University Park

Application of Historic and Emerging Median Barrier Guidance to Median Design (TRBAM-24-00374) - B681

Christine Carrigan/Roadsafe LLC, Malcolm Ray, PE PhD/Roadsafe LLC

A Case Study of Applying the Forgiving Roadside Concept to Detention Ponds in an Urban Environment (TRBAM-24-00386) - B682

Christine Carrigan/Roadsafe LLC, Malcolm Ray, PE PhD/Roadsafe LLC, Ethan Ray/Roadsafe LLC

A Practical Analysis of Risk Factors for Roadside Barrier Need in Rural Oregon (TRBAM-24-03872) - B683

Riana Tanzen/VHB, Ian Hamilton/VHB, Michael Spear/VHB, Scott Himes/VHB

Evaluation of the Performance of Rumble Strips Covered by Seal Coat (TRBAM-24-05967) - B684

Bryan Wilson/Texas A&M Transportation Institute, Camilo Jurado/Texas A&M Transportation Institute, Timothy Barrette/Texas A&M Transportation Institute, Adam Pike/Texas A&M Transportation Institute

Characterization of Gating Guardrail Crashes (TRBAM-24-02385) - B685

Kevin Schrum/University of Alabama, Birmingham, Chantel Jordi/University of Alabama, Birmingham, Dakotah Sicking/University of Alabama, Birmingham

Development of a Crashworthy Pedestrian Access Terminal System for W-Beam Guardrail (TRBAM-24-03996) - B672

Mark Ayton/Safe Roads R&D, Inc., Jennifer Rasmussen/Safe Roads R&D, Inc., Brett Van Mierlo/Safe Roads R&D, Inc., Tanja Iverson/Safe Roads R&D, Inc.

(continued)

Design and Evaluation of MASH TL-3 Retrofit Bridge Rail for Vintage Concrete Post and Beam Bridge Rail with Safety Walk for the Louisiana Department of Transportation (TRBAM-24-05477) - B673

William Williams/Texas A&M Transportation Institute, Walid Alaywan/Texas A&M Transportation Institute, Sana Moran/Texas A&M Transportation Institute

3053



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Geospatial Data

Rachel Lewis, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Geospatial Data Acquisition Technologies

Road Curb Extraction from Unordered Point Clouds Based on Multi-Feature Filtering (TRBAM-24-02096) - B690

Yuan Peng/Tongji University, Hong Lang/Tongji University, Zheng Zou/Tongji University, Jian Lu/Tongji University

A Novel Tile-Based Method for Automated Assessment of Pavement Rutting and Roughness Using Mobile

LiDAR Data (TRBAM-24-00651) - B691

Ali Faisal/University of British Columbia, Suliman Gargoum/University of British Columbia

Automatic Underground Pipe Mapping Through Bezier-Curved Hyperbola and Multi-View Ground-Penetrating

Radar B-Scans (TRBAM-24-02602) - B692

Yuxi Zhang/Purdue University, Yeji Hong/Purdue University, Zirui Hong/Purdue University, Hubo Cai/Purdue University

A LiDAR Data-Based Method to Measure Sight Distance at Unsignalized Intersection (TRBAM-24-02787) - B693

Fangjian Yang/Auburn University, Huaguo Zhou/Auburn University, Tonghui Li/Auburn University, Zijie Zhao/Auburn University

Enhancing Vehicle Trajectory Extraction with Roadside LIDAR: A Novel Methodological Framework

(TRBAM-24-03713) - B694

Gao Yacong/Beijing University of Technology, Chenjing Zhou/Beijing University of Technology, Jian Rong/Beijing University of Technology, Yi Wang/Beijing University of Technology, Xin Chang/Beijing University of Technology, Siyang Liu/Beijing University of Technology

Translating LiDAR-Based Object Detection from On-Road to Roadside: An Evaluatory Study (TRBAM-24-04636) -

B695

Muhammad Shahbaz/University of Central Florida, Md Mahmudul Islam/University of Central Florida, Shaurya Agarwal/University of Central Florida

3054



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Speed Control, Capacity, and Safety at Roundabouts

Amanda Austin, Texas Department of Transportation, presiding

Sponsored By Standing Committee on Roundabouts and other Intersection Design and Control Strategies

Come join us to learn more about capacity and traffic rules at two lane roundabouts, a safety comparison of roundabouts converted from traditional intersections, and a case study of dynamic speed feedback signs in advance of two roundabouts.

Evaluating Dynamic Speed Feedback Signs for Speed Management at Roundabouts in Rural-to-Urban

Transition Areas (TRBAM-24-03048) - B696

Myles Overall/Michigan State University, Magdalena Cavka/Michigan State University, Sakar Pahari/Michigan State University, Timothy Gates/Michigan State University

An Examination of the Geometric Model on the Capacity Prediction of Two-Lane Entry Roundabouts

(TRBAM-24-02170) - B697

Mark Johnson/MTJ Roundabout Engineering, Ting-Li Lin/MTJ Roundabout Engineering

Framework for Detecting Traffic Rules Violations at Two-Lane Roundabouts: Case Studies in Ann Arbor

(TRBAM-24-03792) - B698

Xiaowei Shi/University of Wisconsin, Milwaukee, Suzhou Huang/University of Wisconsin, Milwaukee, Henry Liu/University of Wisconsin, Milwaukee

Safety Performance of Roundabouts Converted from Stop-Controlled or Signalized Intersections (TRBAM-24-04021) - B699

Nischal Gupta/Michigan State University, Sunday Imosemi/Michigan State University, Qiuqi Cai/Michigan State University, Megat Usamah Megat Johari/Michigan State University, Peter Savolainen/Michigan State University, Timothy Gates/Michigan State University

3055



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Innovations That Pave Asphalt Usage Forward

Lindsi Hammond, Geotechnical Resources, Inc. (GRI), presiding

Sponsored By Standing Committee on Production and Use of Asphalt

This poster session presents peer reviewed work on the cutting edge of asphalt materials that is paving the way forward in the production and use of asphalt.

Laboratory Evaluation of Plant-Produced, Epoxy-Modified, Open-Graded, Porous Asphalt Mixtures: A Dutch Case Study (TRBAM-24-00348) - B641

Panos Apostolidis/Technische Universiteit, Delft, Xueyan Liu/Technische Universiteit, Delft, Sandra Erkens/Technische Universiteit, Delft, Robbert Naus/Technische Universiteit, Delft, Remco Hermsen/Technische Universiteit, Delft

Placement Temperature Effects on Asphalt Mixtures: Laboratory Evaluation and Paver-Mounted Thermal Profiling Analysis (TRBAM-24-00654) - B644

Jinho Kim/Texas A&M Transportation Institute, Stephen Sebesta/Texas A&M Transportation Institute, Sheng Hu/Texas A&M Transportation Institute

Machine Learning for Prediction of Fracture Parameters in the Texas Overlay Test for Asphalt Concrete Overlay Reflective Cracking (TRBAM-24-00890) - B639

Fangyu Liu/University of Illinois, Urbana-Champaign, Masih Beheshti/University of Illinois, Urbana-Champaign, Hasan Ozer/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

Piezoresistive Response of MWCNTs and Epoxy Mixtures for Self-Sensing Pavement (TRBAM-24-00909) - B643

Peng Huang/Southeast University School of Transportation, Tianling Wang/Southeast University School of Transportation, Yixin Zhou/Southeast University School of Transportation, Yulou Fan/Southeast University School of Transportation, Houzhi Wang/Southeast University School of Transportation, Jun Yang/Southeast University School of Transportation, Wei Huang/Southeast University School of Transportation

Microstructural Characterization of the Lubrication Behavior of Asphalt Binder During the Compaction of Asphalt Mixture (TRBAM-24-01153) - B638

Duo Xu/Southeast University, Jiwang Jiang/Southeast University, Shuheng Yu/Southeast University, Fujian Ni/Southeast University

Emission Reduction Effect of Eco-Friendly Asphalt Modified with Isocyanate-Nanoclay Composites (TRBAM-24-01199) - B645

Yi Wang/Tongji University, Guoming Huang/Tongji University, Xingyi Zhu/Tongji University

Tribology-Based Specifications for Assessing the Production Temperatures of Asphalt Binder (TRBAM-24-01997) - B646

Vivek Wagh/Indian Institute of Technology, Varanasi, Ankit Gupta/Indian Institute of Technology, Varanasi

A Proposal for Short-Term Aging Quality Control by Inspecting Binder Aging Level of Paving Mix Using Gel Permeation Chromatography Without Binder Recovery (TRBAM-24-03422) - B642

Kwang W. Kim/Kangwon National University

Understanding the State Agency Policies Toward Reclaimed Asphalt Pavement Usage in the United States: State of Practice (TRBAM-24-04577) - B640

V.Sushanth Revelli/Rowan University, Ayman Ali/Rowan University

An Assessment of Winter Performance of Ultra-Thin Bonded Wearing Course and Recommendations for Improving Quality Assurance (TRBAM-24-05201) - B647

Yunpeng Zhao/Engineering & Software Consultants, LLC., Dimitrios Goulias/Engineering & Software Consultants, LLC.,

Investigating the Field Performance of High Reclaimed Asphalt Pavement Mixtures with Bio-Based Recycling Agent (TRBAM-24-05204) - B648

Nitish Bastola/FHWA: Federal Highway Administration, Mahdieh Khedmati/FHWA: Federal Highway Administration, Farzad Yazdipanah/FHWA: Federal Highway Administration, Hamzeh Haghshenas Fatmehsari/FHWA: Federal Highway Administration



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Balanced Mix Design: Innovations, Challenges, and Best Practices

Nathan Moore, National Center for Asphalt Technology (NCAT), presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design

Balanced Mix Design Plus for Mixtures That Contain Recycled Asphalt Pavement (TRBAM-24-05285) - B626

Douglas Mocelin/North Carolina State University, Youngsoo Kim/North Carolina State University

A Balanced Mix Design Approach for New Mexico (TRBAM-24-02498) - B634

Md Mehedi Hasan/University of New Mexico, Rafi Tarefder/University of New Mexico

Balanced Mix Design of Asphalt Mixtures in Manitoba (TRBAM-24-02532) - B635

Mahmoud Rizk/University of Manitoba, Ahmed Shalaby/University of Manitoba

A Case Study on Developing an Asphalt Mix Performance Grading System in Ontario (TRBAM-24-02700) - B628

Saeid Salehi Ashani/University of Waterloo, Sina Varamini/University of Waterloo, Michael Elwardany/University of Waterloo, Susan Tighe/University of Waterloo

A Multi-Perspective Variability Assessment of Conventional and High Reclaimed Asphalt Pavement Mixtures: A Case Study in Virginia (TRBAM-24-05451) - B633

Bilin Tong/Virginia Polytechnic Institute, Jhony Habbouche/Virginia Polytechnic Institute, Stacey Diefenderfer/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute

Impact of Balanced Mix Design on Pavement Design Using Texas ME (TRBAM-24-02440) - B629

Richard Steger/Ingevity, Jason Bausano/Ingevity, Stephane Charmot/Ingevity

Providing a Statistical Analysis Framework for Agencies to Analyze the Parameters Influencing the Rutting and Cracking Performance of Asphalt Mixtures (TRBAM-24-05911) - B632

Mohammad Tahir Ansari/University of Arkansas, Fayetteville, Andrew Braham/University of Arkansas, Fayetteville, Mark Greenwood/University of Arkansas, Fayetteville

Predicting Performance in Quality Assurance of Asphalt Mixtures Under Balance Mix Design (TRBAM-24-04334) - B637

Anjuman Ara Akhter/Schnabel Engineering, Dimitrios Goulias/Schnabel Engineering

--Field Validation of Louisiana's Specified Asphalt Balanced Mix Design Criteria (TRBAM-24-02240) - B630

Shasank Pant/Louisiana Department of Transportation and Development, Moses Akentuna/Louisiana Department of Transportation and Development, Louay Mohammad/Louisiana Department of Transportation and Development, Samuel Cooper, III/Louisiana Department of Transportation and Development, Samuel Cooper, Jr./Louisiana Department of Transportation and Development

Accelerated Balanced Asphalt Mix Design Based on Machine Learning and Non-Dominated Sorting Genetic Algorithm-II (TRBAM-24-05314) - B636

Jian Liu/Virginia Polytechnic Institute, Linbing Wang/Virginia Polytechnic Institute

A Balanced Design Framework for Asphalt Mixtures: Exploring the Effects of Binder Properties and Volumetric Parameters on Performance (TRBAM-24-00281) - B627

Marcos Rocha/Federal University of Rio de Janeiro, Alexis Enríquez-León/Federal University of Rio de Janeiro, Thiago Aragão/Federal University of Rio de Janeiro, Rogério Espíndola/Federal University of Rio de Janeiro, Luis Alberto Nascimento/Federal University of Rio de Janeiro, Shane Underwood/Federal University of Rio de Janeiro

Benchmarking the Performance of Asphalt Mixtures for the Implementation of Balanced Mix Design in Oregon (TRBAM-24-05960) - B625

Vipul Chitnis/Oregon State University, Mayank Sukhija/Oregon State University, Erdem Coleri/Oregon State University

A Performance-Related Design for Hot Mix Asphalt Incorporating Multiple Design Parameters (TRBAM-24-02849) - B631

Yining Zhang/Zhejiang University of Technology, Lijun Sun/Zhejiang University of Technology, Huailei Cheng/Zhejiang University of Technology

Developing Balanced Mix Design Gyration for North Dakota's Hot Mix Asphalt Pavements (TRBAM-24-02879) - B624

Nabil Suleiman/University of North Dakota, Anjo Mate/University of North Dakota, Daba Gedafa/University of North Dakota, Bruce Dockter/University of North Dakota



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Cracking Characterization of Asphalt Mixtures

Rami Chkaiban, Applied Research Associates, Inc., presiding

Sponsored By Standing Committee on Asphalt Mixture Evaluation and Performance

Cracking Performance Evaluation of Recycled Asphalt Materials Using the Poker Chip Test and I-FIT

(TRBAM-24-00377) - B616

Abhilash Vyas/University of Illinois, Urbana-Champaign, Renan Santos Maia/University of Illinois, Urbana-Champaign, Ramez Hajj/University of Illinois, Urbana-Champaign

Variability of Asphalt Concrete Flexibility Index and Rut Depth (TRBAM-24-00464) - B609

Jose Rivera-Perez/WSP, Imad Al-Qadi/WSP

Effects of Thermo-Reversible Aging on the Cracking Resistance of Asphalt Mixtures in the Semi-Circular Bend Test (TRBAM-24-00838) - B607

Blaise Elliott/Queen's University, Chandra Mohanta/Queen's University, Chanaka Nawarathna/Queen's University, Jianmin Ma/Queen's University, Simon Hesp/Queen's University

Evaluating the Fatigue Cracking Resistance of North Dakota's Asphalt Mixtures (TRBAM-24-01356) - B623

Duncan Oteki/University of North Dakota, Andebut Yeneneh/University of North Dakota, Daba Gedafa/University of North Dakota, Nabil Suleiman/University of North Dakota

Evaluation of Paris Law-Based Approach on Asphalt Mixture Reflective Cracking Performance Modeling (TRBAM-24-01420) - B605

Zhe Zeng/North Carolina State University, Shane Underwood/North Carolina State University, Youngsoo Kim/North Carolina State University, Murthy Guddati/North Carolina State University

Investigation of the Cracking Resistance Decay Behavior of In Situ Damaged Epoxy Asphalt Mixture from Steel Bridge Deck Pavement (TRBAM-24-01604) - B619

Zhu Zhang/Southeast University, Jiwang Jiang/Southeast University, Jiaqi Huang/Southeast University, Yajin Han/Southeast University, Jingling Wang/Southeast University, Fujian Ni/Southeast University

Evaluation of Cracking Tolerance Index for Long-Term Field Cracking Performance of Asphalt Pavements (TRBAM-24-01857) - B603

Andrew Burlison/University of South Alabama, Shenghua Wu/University of South Alabama, Abee Oyelere/University of South Alabama

Predicting Crack Growth of Paving Materials Under Indirect Tensile Fatigue Loads (TRBAM-24-02000) - B613

Hui Li/Southeast University, Xue Luo/Southeast University, Yuqing Zhang/Southeast University

Modeling Crack Growth Rate of Paving Materials Under Indirect Tensile Fatigue Loads Using J-Integral Based Paris' Law (TRBAM-24-02023) - B614

Hui Li/Southeast University, Xue Luo/Southeast University, Yuqing Zhang/Southeast University

Mechanistic Modeling of Fatigue Crack Growth in Fine Aggregate Matrix Under Torsional Shear Cyclic Load (TRBAM-24-02120) - B612

Hui Li/Hong Kong Polytechnic University, Zhifei Tan/Hong Kong Polytechnic University, Rui Li/Hong Kong Polytechnic University, Xue Luo/Hong Kong Polytechnic University, Yuqing Zhang/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University

Investigation of Crack Characteristics of Epoxy-Modified Recycled Asphalt Mixtures Based on a Meso-Heterogeneous Model: Promoting Sustainable Utilization of High Reclaimed Asphalt Pavement Percentage (TRBAM-24-02156) - B611

Long Cheng/Southeast University, Long Cheng/Southeast University, Pengfei Yao/Southeast University, Zijian Zhang/Southeast University

Fatigue Performance Evaluation of Fiber-Reinforced Asphalt Mixtures with Four-Point Bending Beam and Uniaxial Fatigue Tests (TRBAM-24-02223) - B610

Ali Raza Khan/Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan University, Wade Lein/Rowan University

Assessing the Suitability of Different Testing and Specimen Preparation Approaches for Indirect Tensile Cracking Test Using a Simple Ranking Framework (TRBAM-24-02264) - B615

Vikas Kumar/Washington State Department of Transportation, Erdem Coleri/Washington State Department of Transportation, Mayank Sukhija/Washington State Department of Transportation

Evaluation of Equivalent Axle Load Factors for Multi Axles Based on Fatigue Tests Using Actual Strain Waveforms (TRBAM-24-02767) - B621

Huailei Cheng/Tongji University, Zhang Chen/Tongji University, Xiaoying Tong/Tongji University, Xingyu Chen/Tongji University, Lijun Sun/Tongji University

A New Approach to Measure Asphalt Mixture Fatigue Performance Using the Circular-Plate Specimens (TRBAM-24-03690) - B622

Chenxi Li/Tongji University, Lijun Sun/Tongji University, Yi Li/Tongji University, Yue Hu/Tongji University, Tian Jin/Tongji University

Cracking and Rutting Performance of Asphalt Mixes Based on IDEAL-CT and IDEAL-RT Tests for 150 mm and 100 mm Diameter Samples and Establishing Threshold Limits (TRBAM-24-04198) - B617

Gavadakarla Vamsikrishna/Indian Institute of Technology, Bombay, Jagdish Dangi/Indian Institute of Technology, Bombay, Dharamveer Singh/Indian Institute of Technology, Bombay

Application of Time-Temperature Superposition Principle for Cracking Characterization of Asphalt Mixtures Using the Semi-Circular Bending Test (TRBAM-24-04411) - B606

Shubham Modi/University of New Hampshire, Marko Orešković/University of New Hampshire, Eshan Dave/University of New Hampshire, Jo Sias/University of New Hampshire

Sensitivity Analysis of the Asphalt Concrete IDEAL CT Test Using the Discrete Element Method (TRBAM-24-04741) - B604

Maria El Asmar/California State University, Long Beach, Shadi Saadeh/California State University, Long Beach, Enad Mahmoud/California State University, Long Beach

Development of a Cyclic Fracture Experiment for Characterization of High-Performance Asphalt Concrete Mixes (TRBAM-24-06083) - B608

Nafiur Rahman/Arizona State University, Tempe, Samuel Castro/Arizona State University, Tempe, Masih Beheshti/Arizona State University, Tempe, Naaga Viswanath Vedula/Arizona State University, Tempe, Hossein Noorvand/Arizona State University, Tempe, Hasan Ozer/Arizona State University, Tempe

Multi-scale Characterization of Fatigue Properties Deterioration of Asphalt Pavements: An In-Situ Tracking Observation (TRBAM-24-06450) - B618

Duo Xu/Southeast University, Jiwang Jiang/Southeast University, Jitong Ding/Southeast University, Jingling Wang/Southeast University, Fujian Ni/Southeast University

Effect of Rest Period on Fatigue Performance of Asphalt Pavements in FlexPAVE (TRBAM-24-00350) - B620

Satvik Pratap Singh/Technische Universiteit, Delft, Panos Apostolidis/Technische Universiteit, Delft, Xueyan Liu/Technische Universiteit, Delft, Sandra Erkens/Technische Universiteit, Delft

3059



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Expanding Our Knowledge of Transportation and Health

Sean Co, StreetLight Data, presiding

Sponsored By Standing Committee on Transportation and Public Health

Unraveling Factors Influencing Mode Choice of Adults with Travel-Limiting Disabilities Using Random Parameters Logit Modeling (TRBAM-24-00134) - A162

Majbah Uddin/Oak Ridge National Laboratory, Melrose Pan/Oak Ridge National Laboratory, Ho-Ling Hwang/Oak Ridge National Laboratory

Uncovering the Transmission Mechanism of Epidemics in Metro Systems from the Meso Level:

A Queue-Epidemic Model (TRBAM-24-00471) - A212

Aoping Wu/Southwest Jiaotong University, Fei Chen/Southwest Jiaotong University, Weiyao Xu/Southwest Jiaotong University, Juanxiu Zhu/Southwest Jiaotong University, Lu Hu/Southwest Jiaotong University

Health Outcomes of Public Transport Use Among Older Adults: A Systematic Review (TRBAM-24-00498) - A193

Omer Dilian/Technion - Israel Institute of Technology, Caroline Beckers/Technion - Israel Institute of Technology, Nadav Davidovitch/Technion - Israel Institute of Technology, Karel Martens/Technion - Israel Institute of Technology

A Qualitative Analysis of Barriers to Health Care Access Faced by Low-Income Older Adults in Chicago

(TRBAM-24-00904) - A202

Gretchen Bella/Northwestern University, Elisa Borowski/Northwestern University, Amanda Stathopoulos/Northwestern University

Medical Transportation and Quality of Life for Cancer Patients (TRBAM-24-01364) - A183

Ladan Mozaffarian/Texas A&M Transportation Institute, Roya Etmnani-Ghasrodashti/Texas A&M Transportation Institute

(continued)

Can Administrative Health Data Inform Transport Service Planning for Older Adults?: A Canadian Study of Temporal and Spatial Health Record Attributes (TRBAM-24-01396) - A173

Barry Riordon/University of New Brunswick, Trevor Hanson/University of New Brunswick

Transport Equity Analysis: Health Care Access for Seniors in Singapore (TRBAM-24-02633) - A163

Alice Lee/Singapore University, Thi Anh Hong Nguyen/Singapore University, Lynette Cheah/Singapore University

Travel Behavior and Subjective Well-Being Determinants of Environmental Satisfaction (TRBAM-24-02654) - A150

Hannah Hook/Universiteit Gent, Alireza Ermagun/Universiteit Gent, Frank Witlox/Universiteit Gent

A "Near Undefined Aspect to Social Interaction in Person": An Exploration of the Subjective Value of Travel Through the Words of LGBTQ+ Young Adults (TRBAM-24-02704) - A203

Elisa Borowski/University of California, Irvine, Amanda Stathopoulos/University of California, Irvine

Integrated Simulation Platform for Quantifying Traffic-Induced Environmental and Health Impacts (TRBAM-24-02709) - A172

Xuanpeng Zhao/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Akula Venkatram/University of California, Riverside, Ji Luo/University of California, Riverside, Peng Hao/University of California, Riverside, Kanok Boriboonsomsin/University of California, Riverside, Shaohua Hu/University of California, Riverside

Modeling Health Equity Between Urban and Rural Areas Using a Taxi-Based Mobile Monitoring System (TRBAM-24-02831) - A182

Lewen Wang/Beijing Jiaotong University, Yizheng Wu/Beijing Jiaotong University, Yuxin Wang/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University

Impacts of Feature Interactions on Particle Concentrations in Urban Near-Road Areas: Insight from Explainable Machine Learning (TRBAM-24-03681) - A153

Xin Liu/Shanghai Jiao Tong University, Zhong-Ren Peng/Shanghai Jiao Tong University, Hong-Di He/Shanghai Jiao Tong University

Analysis of Physiological Responses of Children to Active Travel (TRBAM-24-03707) - A201

Shun Su/University of Natural Resources and Life Sciences, Juliane Stark/University of Natural Resources and Life Sciences, Reinhard Hössinger/University of Natural Resources and Life Sciences, Yusak Susilo/University of Natural Resources and Life Sciences

Transportation Affects Health: Five Indicator Domains Recommended for Tennessee (TRBAM-24-04155) - A152

Jonah Bird/Appalachian State University, William Rogers III/Appalachian State University

Spatial Analysis of Geographical Disparities in Pedestrian Safety (TRBAM-24-04204) - A151

Jinli Liu/Texas State University, Subasish Das/Texas State University, Md Nasim Khan/Texas State University

Modeling the Propagation of Infectious Disease via Transportation Networks (TRBAM-24-04293) - A210

Anupriya -/Imperial College London, Daniel Graham/Imperial College London, Prateek Bansal/Imperial College London

Transportation Justice and Health (TRBAM-24-04315) - A140

Kellia Hansmann/University of Wisconsin, Madison, Na'amah Razon/University of Wisconsin, Madison

Research on the Relationship Between Urban and Traffic Environments and Health Among Returning Drivers of Drivers' Licenses (TRBAM-24-04610) - A141

Yu Suzuki/Tokyo University of Science, Hiroki Setogawa/Tokyo University of Science, Shintaro Terabe/Tokyo University of Science, Hideki Yaginuma/Tokyo University of Science, Haruka UNO/Tokyo University of Science

Interactive Impacts of Walkability, Social Vulnerability, and Travel Behavior on COVID-19 Mortality: A Hierarchical Bayesian Spatial Random Parameter Approach (TRBAM-24-04853) - A142

Behram Wali/Urban Design 4 Health, Inc.

Accessibility, Perceptions, and Self-Rated Health in the Suburbs: Evidence from Scarborough, Canada (TRBAM-24-05036) - A192

João Pedro Figueira Amorim Parga/University of Toronto, Ignacio Tiznado-Aitken/University of Toronto, Anton Yu/University of Toronto, Shaila Jamal/University of Toronto, Steven Farber/University of Toronto, Christopher Higgins/University of Toronto

Exploring the Determinants of Medical Travel Burden Using National Household Travel Survey Data (TRBAM-24-05847) - A143

Abhay Lidbe/University of Alabama, Manish Dutta/University of Alabama, Michelle Cheshire/University of Alabama, Emmanuel Adanu/University of Alabama, Xiaobing Li/University of Alabama, Praveena Penmetsa/University of Alabama, Hee Lee/University of Alabama, Steven Jones/University of Alabama



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Railroad Infrastructure Research

Theodore Sussmann, OST-R/Volpe Center, presiding

Sponsored By Standing Committee on Railroad Infrastructure Design and Maintenance

Experimental Study of Wear and Rolling Contact Fatigue Mechanisms in Aging-Treated Lamina Strip Quenched Rails (TRBAM-24-00406) - B500

Kai Wang/Southwest Jiaotong University, Taosuo Bai/Southwest Jiaotong University, Jingmang Xu/Southwest Jiaotong University, Qiantao Ma/Southwest Jiaotong University, Xicheng Feng/Southwest Jiaotong University, Ping Wang/Southwest Jiaotong University, Rong Chen/Southwest Jiaotong University, Lu Li/Southwest Jiaotong University

Ballast Return Rate Assessment for High-Output Ballast Cleaner Thanks to Image-Based Technology and Ballast Degradation Models (TRBAM-24-00442) - B501

Younes Haddani/Sol Solution, Sebastien Barbier/Sol Solution, Matthew Rippin/Sol Solution, Amine Dhemaied/Sol Solution, Aurelie Schwager-Guillemenet/Sol Solution, Sirine Kahil/Sol Solution

Scheduling Railway Maintenance Projects Considering Passenger Hindrance and Event Requests (TRBAM-24-01025) - B543

Yoran de Weert/National Technical University of Athens (NTUA), Konstantinos Gkiotsalitis/National Technical University of Athens (NTUA), Eric van Berkum/National Technical University of Athens (NTUA)

Railway Fastener Anomaly Detection Based on Grayscale and Depth Image Fusion (TRBAM-24-01531) - B520

Yang Gao/Beijing Jiaotong University, Zhiwei Cao/Beijing Jiaotong University, Yong Qin/Beijing Jiaotong University, Limin Jia/Beijing Jiaotong University

Combined Optimization of Maintenance Works and Crews in Railway Networks (TRBAM-24-01596) - B544

Nikoletta Gkonou/National Technical University of Athens (NTUA), Emmanouil Nisyrios/National Technical University of Athens (NTUA), Konstantinos Gkiotsalitis/National Technical University of Athens (NTUA)

A Novel Ballast Roughness Index and Its Reconstruction Method Based on Surface Apparent Dip Angle and Roughness Random Field (TRBAM-24-01734) - B502

Junhua Xiao/Tongji University, Kaichao Wang/Tongji University, Lihua Xue/Tongji University, Zhiyong Liu/Tongji University

Evaluation of Spikes Insertion Method and Predrilled Hole Diameter on Spikes Pullout Strength for Engineered Polymer Composite Railroad Ties (TRBAM-24-01995) - B521

Jubair Musazay/Pennsylvania State University, CHENG ZHANG/Pennsylvania State University, Shihui Shen/Pennsylvania State University, Charles Falletta/Pennsylvania State University, Jim Kelley/Pennsylvania State University

Assessment of Short Railway Bridges Condition Using Vehicle Onboard Systems (TRBAM-24-02416) - B523

Anna Rakoczy/Warsaw University of Technology, Wojciech Karwowski/Warsaw University of Technology, Monika Pludowska-Zagrajek/Warsaw University of Technology

An Approach to Evaluate Track Geometry Degradation Rate (TRBAM-24-02515) - B550

saeed goodarzi/University of Massachusetts, Amherst, Kevin (Hamed) Kashani/University of Massachusetts, Amherst, James Hyslip/University of Massachusetts, Amherst, Carlton Ho/University of Massachusetts, Amherst

Uncrewed Aerial Vehicle and Hi-Rail, Truck-Based Image Analysis Using Deep Learning for Track Substructure Defect Detection (TRBAM-24-02529) - B503

Abdul-Rashid Zakaria/University of Mississippi, Thomas Oommen/University of Mississippi, Pasi Lautala/University of Mississippi, Colin Brooks/University of Mississippi

Large-Scale Triaxial Testing of Geogrid-Stabilized, Field-Sourced, Fouled Ballast Under Simulated Progressive Rainfall Wetting and Cyclic Loading Conditions (TRBAM-24-02832) - B512

Shihao Huang/University of South Carolina, Yu Qian/University of South Carolina

Predict Ballast Fouling Condition with the Gaussian Mixture Model (TRBAM-24-02841) - B513

Yufeng Gong/University of South Carolina, Yu Qian/University of South Carolina

An Advanced Deep Learning-Based Rail Extraction Algorithm Leveraging LiDAR Technology (TRBAM-24-03038) - B552

Yihao Ren/North Dakota State University, Chengbo Ai/North Dakota State University, Pan Lu/North Dakota State University

Crack Detection in Railroad Timber Ties Using Dual-Spectrum Images and YOLOv8 (TRBAM-24-03083) - B522

Moein Ramezanpour Kami/University of Utah, Yuning Wu/University of Utah, Xuan Zhu/University of Utah

Edge-Computing Oriented Real-Time Missing Track Components Detection (TRBAM-24-03120) - B514

Youzhi Tang/University of South Carolina, Yi Wang/University of South Carolina, Yu Qian/University of South Carolina

(continued)

Prediction of Total Permanent Deformation of Conventional and Asphaltic Rail Tracks Considering the Viscoelasticity and Modified Drucker-Prager-Cap Model with Creep (TRBAM-24-03252) - B504

Dian Setiawan/Texas A&M University, Yong-Rak Kim/Texas A&M University, Mohammad Rahmani/Texas A&M University

Prediction of Freezing Air Temperature Distribution in the Entire Railway Tunnel According to Tunnel Length and Outside Air Temperature (TRBAM-24-03341) - B551

Sehee Lee/Seoul National University of Science and Technology, Jongwon Kim/Seoul National University of Science and Technology, Sungbum Park/Seoul National University of Science and Technology, Kook-Hwan Cho/Seoul National University of Science and Technology

Characterization of Degraded Ballast Strength: A Field Application of Ground Penetrating Radar and Dynamic Cone Penetration (TRBAM-24-04500) - B510

Youngdae Kim/University of Illinois, Urbana-Champaign, Robert Wiggins/University of Illinois, Urbana-Champaign, Yong-Hoon Byun/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Jeremy Beasley/University of Illinois, Urbana-Champaign, Abby Cisko/University of Illinois, Urbana-Champaign, Kevin (Hamed) Kashani/University of Illinois, Urbana-Champaign, Ryan Langlois/University of Illinois, Urbana-Champaign, Michael Harrell/University of Illinois, Urbana-Champaign

Vehicle-Bridge Strike Characterization and Localization Using Heterogeneous Data Streams (TRBAM-24-05373) - B524

Hussam Khresat/Southern Methodist University, Brett Story/Southern Methodist University

An Alternative Contamination Index for Non-Contact Evaluation of Railroad Ballast (TRBAM-24-06016) - B511

EBERECHI ICHI/University of North Dakota, Sattar orafshan/University of North Dakota

3061



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Rail Transit Infrastructure Research

Hugh Fuller, HNTB, presiding

Sponsored By Standing Committee on Rail Transit Infrastructure Design and Maintenance

At the AR060 poster session, come and meet the folks researching rail transit design issues, including overhead contact systems, hanging cross ties, and investigation of an embedded track system. Ask questions, make new connections, and expand your track design knowledge.

Interlayer Bonding Quality Evaluation of Sleeper-Asphalt Block Composite Structure Applied to Asphalt Elastic Cured Track Bed (TRBAM-24-00196) - B553

You Wu/Southeast University, Chenguang Shi/Southeast University, Yunhong Yu/Southeast University, Yulou Fan/Southeast University, Xing Cai/Southeast University, Yixin Zhou/Southeast University, Houzhi Wang/Southeast University, Jun Yang/Southeast University

Experimental Evaluation of the Structural Performance of Porcelain Insulators in Railway Overhead Contact Systems (TRBAM-24-04397) - B554

Pablo Aguero-Barrantes/University of Connecticut, Alexandra Hain/University of Connecticut

Investigation of the Hanging Crosstie Problem at Bridge Approaches: Train-Track-Bridge Model Coupled with Discrete Element Method (TRBAM-24-04716) - B560

Zhongyi Liu/University of Illinois, Urbana-Champaign, Wenjing Li/University of Illinois, Urbana-Champaign, Travis Shoemaker/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Youssef Hashash/University of Illinois, Urbana-Champaign

3062



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Recent Trucking Industry Research

Daniel Haake, Cambridge Systematics, presiding

Sponsored By Standing Committee on Trucking Industry Research

Artificial Intelligence for Generalized Truck Platoon Modeling: Implications on Autonomous Freight Delivery (TRBAM-24-02531) - B562

Tong Liu/University of Illinois, Urbana-Champaign, Hadi Meidani/University of Illinois, Urbana-Champaign

(continued)

A Novel Adaptive Particle Swarm Optimization Approach for Unknown Parameter Estimation for Autonomous Container Trucks (TRBAM-24-02770) - B563

zhenggan cai/Wuhan University of Technology, Chaozhong Wu/Wuhan University of Technology, Yi HE/Wuhan University of Technology

Analyzing the Optimal Truck Platooning Configuration on Highways for Economic and Environmental Sustainability (TRBAM-24-04385) - B564

Hany Hassan/Louisiana State University, Md Adilur Rahim/Louisiana State University, Mohamed Mohamed/Louisiana State University, Christopher Melson/Louisiana State University

Safety Assessment of Cooperative Adaptive Cruise Control Truck Platooning on Freeways Work Zones (TRBAM-24-04903) - B570

Vamsi Maddineni/University of Cincinnati, Mohamed Ahmed/University of Cincinnati

How Long Does the Effect of Take-Over Conditions Last?: A Duration Analysis of Commercial Motor Vehicle Drivers' Reaction Time and Driving Behavior in Highly Automated Vehicles (TRBAM-24-05585) - B572

Ali Riahi Samani/University of Memphis, Sabyasachee Mishra/University of Memphis

Scheduling Optimization of Truck Platooning Considering Ecological Benefits Under Connected Vehicle Environment (TRBAM-24-05729) - B573

Yuqing Wang/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Bingzhi Shao/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Powering the Transition to Zero-Emission Trucks Through Infrastructure (TRBAM-24-00177) - B574

Bryan Pounds/McKinsey & Company, Andreas Breiter/McKinsey & Company, Peter Fröde/McKinsey & Company, Vineet Jain/McKinsey & Company, Shannon Peloquin/McKinsey & Company

Graph-Based Battery Swapping System Modeling and Scenario Analysis for Intracity Battery Electric Heavy-Duty Trucks: Insights from Multi-Day, Large-Scale Trajectory Data (TRBAM-24-03557) - B582

Xinghua Li/Tongji University, Tianzuo Wang/Tongji University, Yuntao Guo/Tongji University, Xinwu Qian/Tongji University, Tan Lin/Tongji University

Battery Swapping Station Location Problem for Battery Electric Heavy-Duty Truck with Integration of Renewable Energy System (TRBAM-24-03867) - B583

Xinghua Li/Tongji University, Mingyue Li/Tongji University, Yuntao Guo/Tongji University, Yang Yang/Tongji University, Xinwu Qian/Tongji University, Tan Lin/Tongji University

Exploration of Influential Factors and Patterns Underlying Speeding Behavior Among Long-Haul Truck Drivers Traveling Across India: Application of XGBoost and Shapley Additive Explanation Techniques (TRBAM-24-00738) - B584

Balamurugan Shandhana Rashmi/National Institute of Technology, Tiruchirappalli, Dr Sankaran Marisamynathan/National Institute of Technology, Tiruchirappalli

Estimating Oversized Truck Route Choice Behavior Using GPS Trajectory Data and Recursive Logit Models (TRBAM-24-03141) - B592

Yue MA/Kyoto University, Jan-Dirk Schmoecker/Kyoto University, Wenzhe Sun/Kyoto University, Satoshi Nakao/Kyoto University

The Bi-Objective Battery Electric Truck Dispatching Problem with Backhauls and Time Windows (TRBAM-24-04430) - B593

Dongbo Peng/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Kanok Boriboonsomsin/University of California, Riverside

Truck Choice Model: An Agent-Based Model for the Medium- and Heavy-Duty Vehicle Market in the United States (TRBAM-24-03817) - B594

Wan Li/Oak Ridge National Laboratory, Shiqi Ou/Oak Ridge National Laboratory, Ruixiao Sun/Oak Ridge National Laboratory

A Microsimulation Model of Motor Carrier Selection in the United States (TRBAM-24-04506) - B600

Tufayel Chowdhury/University of Toronto, Colin Smith/University of Toronto, Maren Outwater/University of Toronto, Matthew Roorda/University of Toronto

Combination Cargo Vehicles Passing Maneuver and Their Implications on Traffic (TRBAM-24-05290) - B601

Victor Valencia-Alaix/Universidad Nacional de Colombia, Medellin, María Buitrago-Aristizábal/Universidad Nacional de Colombia, Medellin, Juana Jaramillo-Rios/Universidad Nacional de Colombia, Medellin, Andrés

Vaquero-Pacheco/Universidad Nacional de Colombia, Medellin

Truck Loading with Flexible Loading Decks (TRBAM-24-06378) - B602

Pascal Wolff/NISCI (MIT-SCALE), Roger Lloret-Batlle/NISCI (MIT-SCALE)

Unraveling the Intercity Freight Maze: A Comprehensive Analysis of Truck Trip Chains and Route Preferences (TRBAM-24-02263)

yuxin He/Southwest Jiaotong University, QiuJun Qian/Southwest Jiaotong University, Mi Gan/Southwest Jiaotong University

3063



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Topical Research on Maritime Port Performance

Fatemeh Ranaiefar, Fehr & Peers, presiding

Sponsored By Standing Committee on Ports and Channels, Subcommittee on Port Performance

Offshore Charging Technology: Potential Application in the Aegean Archipelago (P24-20590) - B541

Anastasios Ziakas/University of Piraeus

Machine Learning Applications in Vessel Estimated Time of Arrival (P24-20591) - B542

Maryam Hamidi/Lamar University

3064



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Research in Ports and Channels

Mihalis Golias, University of Memphis, presiding

Sponsored By Standing Committee on Ports and Channels

A Comprehensive Study on Cargo Flow Organizational Models in China's Dry Bulk Shipping Network Using Automatic Identification System Data (TRBAM-24-02274) - B530

Lu Zhang/Southwest Jiaotong University, Yunxia Feng/Southwest Jiaotong University, Zhu Yao/Southwest Jiaotong University, Mi Gan/Southwest Jiaotong University

Data-Driven Prediction of Ship Berthing Time Using Explainable Machine Learning Methods (TRBAM-24-03829) - B531

Mingyuan Yue/Shanghai Jiao Tong University, Lei Dai/Shanghai Jiao Tong University, Yujie Huang/Shanghai Jiao Tong University, Yue Feng/Shanghai Jiao Tong University, Hao Hu/Shanghai Jiao Tong University

Market Design for the Berth Allocation Problem with Trans-Shipments (TRBAM-24-05383) - B532

Roger Lloret-Batlle/NISCI (MIT-SCALE)

High-Precision Ship-Loader-Shore Collaborative Localization in Bulk Carrier Cargo Hold Clearing Scene (TRBAM-24-05489) - B533

Hanbiao Xiao/Wuhan University of Technology, Meng Jie/Wuhan University of Technology, Zhaozheng Hu/Wuhan University of Technology, Xiancheng Shi/Wuhan University of Technology, Hengtao Tan/Wuhan University of Technology

Feasibility Analysis of Vessel Train in the Ocean Shipping Sector (TRBAM-24-05858) - B534

Lei Liu/Southeast University, China, Yong Zhang/Southeast University, China, Mingyang Zhang/Southeast University, China, Zheng Yuan/Southeast University, China

3065



Tuesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Inland Waterway Transportation Research

Erika Witzke, CPCS Transcom, presiding

Sponsored By Standing Committee on Inland Water Transportation

Resilience of Sabine Neches Waterway: Flow and Safety Analysis for Deep Draft Waterways (TRBAM-24-05076) - B540

Shishir Paudel/Lamar University, Golnoosh Toosi/Lamar University, Xing Wu/Lamar University, Victor Zaloom/Lamar University

Tuesday, 09:00 a.m. - 04:00 p.m., Convention Center, Hall D&E

Exhibits

Sponsored By Technical Activities Council

Plan to visit the nearly 200 exhibits, including the TRB booth, showcasing the many transportation-related products and services. View the floor plan and interactively search for exhibiting organizations on the Mobile App. Between sessions, food concessions are available in the Exhibit Hall. Located in the exhibit hall, the Solutions Showcase theaters will feature presentations from exhibiting and patron organizations on the goods, services, and solutions they provide. Presentations begin every half hour during exhibit hours, and are 30 minutes in length. For a list of presentations, see the mobile app (available in early December) or the onsite printed program.

Tuesday, 09:30 a.m. - 04:00 p.m., Convention Center, Exhibit Hall D Theater

Solutions Showcase Theater

Sponsored By Technical Activities Council

The Solutions Showcase Theater is your opportunity to hear from exhibitors and patrons about the newest trends and products in the transportation industry. Participating companies will give 30-minute presentations on goods, services, and solutions their organizations provide. See below for the full schedule.

Optimizing Inspection with Drone Workflows: Skydio (P24-21394)

Lee McMillan/Skydio

Traffic Counting and Modelling Has Never Been Easier: Introducing Telraam and Traffic Scout for Local Communities: Transport and Mobility Leuven . (P24-21395)

Behzad Bamdad Mehrabani/Transport and Mobility Leuven

New Innovative Impact on Falling Weight Deflectometers: Dynatest (P24-21396)

Emil Vincent Ancker

VizMark: TAPCO's Pavement Safety Enhancement (P24-21397)

Robert Kurka/TAPCO

GM Future Roads (P24-21494)

Transport General Authority: Kingdom of Saudi Arabia (P24-21495)

2123

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon A

Multimodal Methods in the Highway Capacity Manual: Applications and Use Cases of HCM7 to Support Complete Streets Analysis

Ana Moreno, Technical University of Munich, presiding

Sponsored By Standing Committee on Highway Capacity and Quality of Service, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation

The aim of this session is to bridge the current silos on bicycle and pedestrian performance measures, bringing together experts from the Highway Capacity Manual, Level of Traffic Stress, and Urban Street Design for comprehensive complete streets analyses. We will combine invited presentations with an interactive panel discussion. This session is jointly organized by TRB committees ACP40 (Highway Capacity and Quality of Service), ACH20 (Bicycle Transportation), and ACH10 (Pedestrians).

Framework for Cross-Sectional Allocation: NCHRP Report 1036 (P24-21510)

Meredyth Sanders/Kittelton & Associates, Inc., Conor Semler/Kittelton & Associates, Inc.

Moving Beyond the Peak Hour: A Whole-Day Approach to Operations Analysis (P24-21509)

Bastian Schroeder/Kittelton & Associates, Inc.

(continued)

Applying Level of Traffic Stress of Bicyclist and Pedestrian Networks: Leveraging the LTS to Support Systemic Safety Work (P24-21511)

Jessica Schoner/Safe Streets Research & Consulting

Advances in Bicycle Network Analysis (P24-21512)

Peter Furth/Northeastern University

3066 CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 152B

Safety in a Changing Rural Landscape

Andrew Ceifetz, WSP, presiding

Sponsored By Rural Transportation Issues Coordinating Council, Standing Committee on Transportation Safety Management Systems, Joint Subcommittee on Rural Road Safety Policy, Programming, and Implementation (with ACS20, AKD30), Standing Committee on Transportation Needs of National Parks and Public Lands, Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices, Standing Committee on Low-Volume Roads, Standing Committee on Native American Transportation Issues, Standing Committee on Rural, Intercity Bus, and Specialized Transportation

The Covid-19 pandemic had an impact on many things, and the rural landscape is no exception. Prior to Covid, many people were tied to urban areas for their jobs and occasionally traveled to rural communities for seasonal recreation, but this changed during Covid. No longer tied to the urban hubs, an opportunity was provided for remote workers to disperse to where they wanted to live. The use of technology for remote work also changed the way we do community engagement and opened up opportunities for rural communities that broke down the travel and funding barriers. In this session, we will examine the opportunities and challenges that this changing rural landscape had on transportation safety and what changes may continue in the future.

The Changing Rural Landscape (P24-20860)

John Pender/U.S. Department of Agriculture (USDA)

Barriers and Opportunities in Rural Virtual Public Involvement: A Synthesis of Practice (P24-20375)

Cole Grisham/Federal Highway Administration (FHWA)

Virtual Road Safety Audits (P24-20376)

Carissa McQuiston/Michigan Department of Transportation

Empowering Rural Texans: Enhancing Vulnerable User Safety Communication Through Effective Outreach and Community Building (P24-20510)

Micah Leonard/Texas A&M University Transportation Institute

3067

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 103A

Driver and Pedestrian Response to Technologies in and Out of the Vehicle

Barbara Banz, Yale School of Medicine, presiding

Sponsored By Standing Committee on Road User Measurement and Evaluation

An Improved Personalized Fatigue Driving Detection Modeling: leveraging Driver Fingerprinting (TRBAM-24-06326)

Yifan Sun/Intelligent Transportation Systems Research Center, Chaozhong Wu/Intelligent Transportation Systems Research Center, Hui Zhang/Intelligent Transportation Systems Research Center, Naikan Ding/Intelligent Transportation Systems Research Center, Sara Ferreira/Intelligent Transportation Systems Research Center, Xiang Shi/Intelligent Transportation Systems Research Center

How Do Pedestrians' Perception Changes Toward Autonomous Vehicles During Unmarked Midblock, Multi-Lane Crossings: Role of Autonomous Vehicles Operation and Signal Indication (TRBAM-24-05480)

Fengjiao Zou/Arcadis US Inc, Jennifer Ogle/Arcadis US Inc, Patrick Gerard/Arcadis US Inc, Weimin Jin/Arcadis US Inc

Human Driver Interaction with Eco-Speed Advisory System in Connected Vehicles: Simulation and Experimental Results (TRBAM-24-03115)

Jihun Han/Argonne National Laboratory, Tyler Ard/Argonne National Laboratory, Rongyao Wang/Argonne National Laboratory, Prakhar Gupta/Argonne National Laboratory, Ardalan Vahidi/Argonne National Laboratory, Yunyi Jia/Argonne National Laboratory, Dominik Karbowski/Argonne National Laboratory

(continued)

Real-Time Risk Identification and Prediction for the Target Lane's Following Vehicle During Lane Change (TRBAM-24-05045)

Xuesong Wang/Tongji University, Shikun Liu/Tongji University, Junyi Zhang/Tongji University, Daiheng Ni/Tongji University
Pedestrians' Perceived Trust in Interactions with Automated Vehicles: A Virtual Reality Study (TRBAM-24-05984)
Mario Ilic/Technische Universitat Munchen, Johannes Lindner/Technische Universitat Munchen, Marie Vollmer/Technische Universitat Munchen, Klaus Bogenberger/Technische Universitat Munchen

3069

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon C

Car-Following and Lane-Changing Theory Revisited

Maria Laura Delle Monache, University of California, Berkeley, presiding
Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

This session is about microscopic traffic flow theory and control.

Stability Analysis of the Cooperative Adaptive Cruise Control Platoon Considering a Rate-Free, Time-Varying Communication Delay and Uncertainties (TRBAM-24-02550)

Tiancheng Ruan/Southeast University, Ruan Tiancheng/Southeast University, Hao Wang/Southeast University, Xiaopeng Li/Southeast University

Modeling Mode-Dependent Lane Discipline in Hybrid Traffic (TRBAM-24-04382)

Georg Anagnostopoulos/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Time to Equilibrium in a Car-Following Scenario Under Local Stable Condition (TRBAM-24-02928)

Junfan Zhuo/Nanyang Technological University, Feng Zhu/Nanyang Technological University

An Investigation of Discretionary Lane-changing Decisions: Insights From the Third Generation SIMulation (TGSIM) Dataset (TRBAM-24-06377)

Yanlin Zhang/University of Illinois, Urbana-Champaign, Alireza Talebpour/University of Illinois, Urbana-Champaign, Hani Mahmassani/University of Illinois, Urbana-Champaign, Samer Hamdar/University of Illinois, Urbana-Champaign

Optimal Trajectory Planning for Emergency Vehicles in Lane-Free Automated Vehicle Traffic (TRBAM-24-02034)

Panagiotis Typaldos/Technical University of Crete, Ismini Pavlaki/Technical University of Crete, Venkata Kartteek Yanumula/Technical University of Crete, Ioannis Papamichail/Technical University of Crete, Markos Papageorgiou/Technical University of Crete

3070

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 102B

Field Detection of Non-Alcohol Drugs

Tara Casanova Powell, Association of Transportation Safety Information Professionals, presiding
Ryan Smith, National Transportation Safety Board (NTSB), presiding
Sponsored By Standing Committee on Impairment in Transportation

Identifying and confirming impairment by non-alcohol drugs while driving is a current challenge and significant obstacle to reducing impaired-driving crashes and fatalities. DRE evaluations have been implemented across the country using physiological and behavioral indicators to identify potential drug classifications for those drivers suspected of a DUID. Standard Field Sobriety Tests (SFSTs) when used to identify alcohol-impaired drivers is a proven effective measure of detection, however, the effectiveness of SFSTs in detecting cannabis-related impairment is inconclusive. Presentations will highlight recent studies including analysis of DRE evaluations and the potential use of SFSTs as a tool to identify non-alcohol drug impairment.

An Analysis of Drug Recognition Expert Evaluations and Comparisons with Police Issued Citations in Maryland, 2017-2021 (TRBAM-24-04132)

Komal Bhagat/University of Maryland, Baltimore, Kimberly Auman/University of Maryland, Baltimore, Joseph Kufera/University of Maryland, Baltimore, Kartik Kaushik/University of Maryland, Baltimore

(continued)

Field Sobriety Tests and the Detection of Drivers Under the Influence of Cannabis (TRBAM-24-04820)

Thomas Marcotte/University of California, San Diego, Anya Umlauf/University of California, San Diego, David Grelotti/University of California, San Diego, Emily Sones/University of California, San Diego, Kyle Mastropietro/University of California, San Diego, Raymond Suhandynata/University of California, San Diego, Marilyn Huestis/University of California, San Diego, Igor Grant/University of California, San Diego, Robert Fitzgerald/University of California, San Diego

Evaluating the DRE Program in Washington State (P24-21055)

Dale Willits/Washington State University

3071

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon B

Driver Behavior Analysis for Driving Condition

Mouyid Islam, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Truck and Bus Safety

An Exploratory Assessment of Driver Injury Severities in Truck Crashes Involving Fatigued and Non-Fatigued Driving (TRBAM-24-05405)

Mouyid Islam/Federal Highway Administration (FHWA)

Boston Blind Zone Safety Initiative: Current Fleet Analysis, Market Scan, and Proposed Direct (TRBAM-24-04063)

Eric Englin/OST-R/Volpe Center, Alyssa Brodeur/OST-R/Volpe Center, Alexander Epstein/OST-R/Volpe Center, Alessandra Vennema/OST-R/Volpe Center, Ella Froggatt/OST-R/Volpe Center, Charlotte Fleetwood/OST-R/Volpe Center, Kris Carter/OST-R/Volpe Center

Analysis of Risky Driving Behaviors Among Truck Drivers: The Intermediary Effects of Enterprise Safety Climate and Safety Cognition (TRBAM-24-05089)

Huixin Zhang/Tongji University, Xuesong Wang/Tongji University

Impact of Microscopic Real-Time Weather Information on Commercial Motor Vehicle Crash Severity Along Interstate 65 in Kentucky (TRBAM-24-00179)

Bharat Kumar Pathivada/Western Kentucky University, Kirolos Haleem/Western Kentucky University, Arunabha Banerjee/Western Kentucky University

3072

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 150B

The Bureau of Transportation Statistics Freight Program: New Data and Future Directions

Alison Conway, City College of New York, presiding

Sponsored By Standing Committee on Freight Transportation Data

USDOT's Bureau of Transportation Statistics (BTS) will present newly released data from the 2021 Vehicle Inventory and Use Survey (VIUS). BTS will also describe ongoing improvements to the Freight Analysis Framework (FAF), including multimodal assignment and commodity flow forecasts. Other key BTS efforts, including nationwide and last-mile e-commerce data, electric vehicle charging infrastructure, supply chain, transborder, and other areas will be covered. Come learn about these programs and provide feedback on new directions as BTS plans the freight data program of the future.

Bureau of Transportation Statistics Freight Program Overview and Recent Advances (P24-20606)

Patricia Hu/OST-R/Bureau of Transportation Statistics

2021 Vehicle Inventory and Use Survey Methodology, Results, and Potential Uses (P24-20607)

Jina Mahmoudi/OST-R/Bureau of Transportation Statistics, Joseph McGill/OST-R/Bureau of Transportation Statistics

Ongoing Improvements to the Freight Analysis Framework (P24-20608)

Monique Stinson/OST-R/Bureau of Transportation Statistics

Emerging Needs and Future Directions for Bureau of Transportation Statistics Data Programs (P24-20609)

Edward Strocko/OST-R/Bureau of Transportation Statistics

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 151A

Solutions to Funding and Mobility Challenges in Transportation Planning

Mansha Swami, Morgan State University, presiding

Sponsored By Standing Committee on Transportation Planning Policy and Processes

This session will include presentations on solutions to funding and mobility challenges in transportation planning, including case studies of Statewide Transportation Improvement Programs, using an optimization model for federal grant matching, and strategies for urban mobility planning in German cities.

Priorities and Transparency in State Transportation Spending: Case Studies of Statewide Transportation Improvement Programs (TRBAM-24-03806)

Lee-Ellen Myles/Transportation For America, Stephen Kenny/Transportation For America, Benito Perez/Transportation For America

Addressing Federal Grant Match Challenges Using an Optimization Model (TRBAM-24-04632)

Deepak Benny/Purdue University, Saeel Shrivallabh Pai/Purdue University, Samuel Labi/Purdue University, Qingbin Cui/Purdue University

From Global Sustainability Visions to Local Interpretations and Priorities: Planners' Perspectives and Their Translation into Strategic Urban Mobility Planning in German Cities (TRBAM-24-03976)

Jonas Krombach/TU Dresden, Juan Nicolas Gonzalez/TU Dresden, Rico Wittwer/TU Dresden, Stefan Hubrich/TU Dresden, Regine Gerike/TU Dresden

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 152A

Next Gen Leaders of Tomorrow on Issues of Today

Jason Schwartz, Federal Railroad Administration (FRA), presiding

Sponsored By Policy and Organization Group, Subcommittee on Young Members-Aviation, Freight Systems and Marine Group Young Members Council, Subcommittee on Young Members-Sustainability and Resilience, Subcommittee on Policy and Organization Group Young Members, Subcommittee on Data, Planning, and Analysis Group Young Members, Subcommittee on Safety and Operations Group Young Member

In this lectern session, the next generation of transportation leaders will give their take on issues facing the transportation industry and provide perspective and advice to younger members. The session will feature a panel of younger members from diverse backgrounds and research areas. Each panelist will discuss their background and path to their current day position/research as well as provide insight on how they hope their generation will shape transportation moving forward. Key topics covered through this session will include: Organizational success Critical issues What's next?

Panelist 1: Tia Boyd (P24-20302)

Tia Boyd/USF Center for Urban Transportation Research

Panelist 2: Mia Held (P24-20303)

Mia Held/C&S Companies

Panelist 3: Jhony Habbouche (P24-20486)

Jhony Habbouche/Virginia Transportation Research Council

3075

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 151B

The Evolution of Performance Measurement: Are We Measuring Better?

David Schrank, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Performance Management

As technologies and data sources evolve, performance measurement and the actual measures evolve along with them. Often this evolution creates new or more robust performance measures than were previously available. However, this evolution does not imply that measures related to more traditional performance areas such as mobility or infrastructure condition are static or can't be made better. This session will show the evolution of performance measures and data sources within several different performance management areas and will compare and contrast the capability of those measures to provide more robust analysis and help transportation agencies consider better ways of measuring and analyzing performance.

Kicking the Big Data Tires (P24-20558)

Timothy Canan/Metropolitan Washington Council of Governments

Using Connected Vehicle Data to Support Pavement Performance Measurement (P24-20559)

Mark Egge/High Street Consulting Group, LLC

Measures and Analytical Procedures to Assess Highway System Performance: Michigan Case Study (TRBAM-24-00671)

Ehsan Kamjoo/Michigan State University, Farish Jazlan/Michigan State University, Ali Zockaie/Michigan State University, William Eisele/Michigan State University, Robert Maffeo/Michigan State University, Mehrnaz Ghamami/Michigan State University, Peter Savolainen/Michigan State University, Timothy Gates/Michigan State University

Evaluating Data to Assess Past and Present Projects for Mobility (P24-21479)

Matthew Wolniak/Johnson Mirmiran and Thompson

3076



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 150A

Transportation Leaders Ask: What Can Artificial Intelligence Do for Me and to Me?

Frances Harrison, Spy Pond Partners, LLC, presiding

Sponsored By Standing Committee on Data for Decision Making

The benefits and risks of artificial intelligence are unfolding rapidly, promising to advance analytic capabilities, to bring new insights to transportation operations and management, and perhaps to replace some human functions. But what will AI change for agency leadership? Will we see revolution and replacement, new ideas and strategies, or just more business as usual? How can leaders extract the most value from artificial intelligence? In this session, a panel of senior transportation agency leaders will engage in a structured but unscripted discussion of their expectations and concerns about how artificial intelligence will affect their roles, and how they might achieve the most value from AI for themselves and their customers.

Artificial Intelligence Viewed from Nevada (P24-20374)

Tracy Larkin Thomason/Nevada Department of Transportation

Anticipating Artificial Intelligence from the C-Suite (P24-20395)

Kirk Steudle/Steudle Executive Group

Utah Engages Artificial Intelligence (P24-20721)

Carlos Bracerias/Utah Department of Transportation

Artificial Intelligence at the Delaware Department of Transportation (P24-21542)

Shante Hastings/Delaware Department of Transportation

Artificial Intelligence Expectations at Vermont Agency of Transportation (P24-21543)

Jayna Morse/Vermont Agency of Transportation

3077

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 201

Post-COVID Impacts to Supply Chain

Sid Scott, HKA-Global, presiding

Sponsored By Standing Committee on Contract Law

The transportation construction industry is experiencing unprecedented supplychain disruptions and labor shortages, resulting in cost increases and delays to thedevelopment of transportation infrastructure projects and operation of servicescontracts. A panel of industry experts will discuss how various contract modelstraditionally address labor and materials supply and relief for contractors. The panelwill also explore different legal and contractual mechanisms that agencies areemploying to address both contractor and owner concerns regarding current supplychain and labor challenges. This session will provide guidance regarding legal andcontractual issues that arise, as well as applicable federal requirements.

Post-COVID Impacts to Supply Chain (P24-21061)

James Cownie/Minnesota Department of Transportation, Erin Holbrook/California Department of Transportation, Christine Ryan/Nossaman LLP, James Harper/U.S. Department of Transportation

3078



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 156

Anti-Human Trafficking Strategies for Transportation Agencies

Terri Parker, Missouri Department of Transportation, presiding

Sponsored By Standing Committee on Tort Liability and Risk Management

Panel members will discuss anti-trafficking awareness training and outreach methods used by their respective public agencies. We will also discuss Human Trafficking data gathered from a large-scale survey of thousands of transportation professionals.

Anti-Human Trafficking Strategies for Transportation Agencies (P24-21054)

Chris Baglin/United Against Slavery, Monica Aleman-Smoot/Texas Department of Transportation, Angela Forsythe/Minnesota Department of Transportation, Jodi Godfrey/University of South Florida, Arlin Alvarez/Texas Department of Transportation

3079



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 102A

Kahramanmaraş, Türkiye, Earthquake Response in Affected Regions: Observations, Impact on Community, Lessons Learned, and Recommendations, Part 2 (Part 1, Session 3024)

Sreenivas Alampalli, Stantec, presiding

Monique Head, University of Delaware, presiding

Sponsored By Section - Bridges and Structures, International Coordinating Council, Standing Committee on Testing and Evaluation of Transportation Structures, Standing Committee on Seismic Design and Performance of Bridges, Section - Infrastructure Management and System Preservation, Standing Committee on Bridge and Structures Management, Subcommittee on Safety and Security of Bridges and Structures, Standing Committee on Bridge Preservation

Earthquakes in February 2023 devastated Turkey with considerable loss of civil built infrastructure, significantly impacting the community with considerable social and political ramifications. There were several reconnaissance teams, and these included representatives from the Earthquake Engineering Research Institute / Applied Technology Council (EERI/ATC) and from the American Concrete Institute (ACI). The presentations, from experts who were in the country during the earthquake or visited the country as part of reconnaissance teams, provide an account of the observed damage and the impact after the earthquakes. Following the presentations, there will be a panel discussion with all the presenters.

Two Fundamental Seismic Faults in Turkey and Associated Performance of Historic Bridges (P24-20019)

Niyazi Özgür Bezin/Istanbul Universitesi, Cerrahpasa

(continued)

Structural Bridge Damage from the Turkey Earthquake (P24-20020)

Robert Dowell/San Diego State University

Panel Discussion (P24-20021)

Nurdan Apaydın/Istanbul University, Cerrahpaşa, Niyazi Özgür Bezgin/Istanbul Üniversitesi, Cerrahpaşa, Fikret Catbas/University of Central Florida, Robert Dowell/San Diego State University, Tuna Onur/Onur Seemann Consulting, Alp Caner/WSP-USA

3080

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 204AB

Bridge Joints and Ultra-High Performance Concrete Applications

Reza Baie, Parsons Corp, presiding

Sponsored By Standing Committee on Concrete Bridges

This session will consist of three presentations focusing on numerical modeling of bridge joints and Ultra High Performance Concrete (UHPC) research. UHPC research will include beam strengthening and repair as well as splice lengths of large diameter bars in UHPC.

Numerical Modeling of Bridge Continuity Joints Under Temperature Gradient Induced Moments: Full Versus Partial Continuity (TRBAM-24-02847)

Marco Canales/Louisiana State University, Ayman Okeil/Louisiana State University

The Capacity of Reinforced and Prestressed Concrete Compression Members Strengthened and Repaired Using Ultra-High Performance Concrete Encasement (TRBAM-24-02761)

Mohammed Hedia/University of Nebraska, Lincoln, George Morcouc/University of Nebraska, Lincoln

Splice Length of Large Diameter Reinforcing Bars in Ultra-High Performance Concrete (TRBAM-24-02644)

Christina Freeman/Florida Department of Transportation, William Potter/Florida Department of Transportation

Structural Design Guidance for Ultra-High-Performance Concrete (P24-20920)

Benjamin Graybeal/Federal Highway Administration (FHWA), Rafic Helou/Federal Highway Administration (FHWA)

3081

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 209C

Tunnel Construction, Lighting, and In-Service Deterioration Case Studies

Brian Leshko, HDR, presiding

Sponsored By Standing Committee on Tunnels and Underground Structures

Tunnel Construction, Lighting and In-Service Deterioration Case Studies Event Description AKB60 - Standing Committee on Tunnels and Underground Structures Lectern Session: TRBAM-24-05784 Heavy Rainfall Induced Tunnel Invert Damage in Operating Railway Tunnels: Characteristics, Mechanism, and Treatments Jinyang Fu, Ph.D. TRBAM-24-01687 Dynamic Assessment System for the Luminance and Illuminance Measurement of Tunnel Lighting. Practical Case: L'Olleria Tunnel in A-7 Highway Jose Miguel Perandones Peidro, M.D. TRBAM-24-00309 Investigation on Utilizing Prestressed Anchor Cables as an Alternative to Temporary Supports in Super-Large-Span Tunnel Excavation: Enhancing Construction Efficiency while Maintaining Safety Yuyin Jin

Investigation on Utilizing Prestressed Anchor Cables as an Alternative to Temporary Supports in Super Large Span Tunnel Excavation: Enhancing Construction Efficiency While Maintaining Safety (TRBAM-24-00309)

Yuyin Jin/Tongji University, Zhiyao Tian/Tongji University, Xinzhi Chen/Tongji University

Dynamic Assessment System for the Luminance and Illuminance Measurement of Tunnel Lighting: Practical Case of the L'Olleria Tunnel in A-7 Highway (TRBAM-24-01687)

Jose Miguel Perandones Peidro/AMAC EUROPA SL, Guillermo Llopis Serrano/AMAC EUROPA SL, Alberto Senén Perales García/AMAC EUROPA SL, Aquilino Molinero Martínez/AMAC EUROPA SL

Heavy Rainfall-Induced Tunnel Invert Damage in Operating Railway Tunnels: Characteristics, Mechanism, and Treatments (TRBAM-24-05784)

Junsheng Yang/Central South University, Yubo Luo/Central South University, Yipeng Xie/Central South University, Jinyang Fu/Central South University, Cong Zhang/Central South University

3082

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 202A

Recent Developments and Trends in Quality Assurance, Part 1 (Part 2, Session 3191)

Dimitrios Goulias, University of Maryland, College Park, presiding
Jeffrey Withee, Federal Highway Administration (FHWA), presiding
Sponsored By Standing Committee on Quality Assurance Management

Quality Assurance for Cold-in-Place Recycling Using Ground-Penetrating Radar (P24-21045)

Imad Al-Qadi/University of Illinois, Urbana-Champaign

Use of Step Frequency Ground-Penetrating Radar in Bridge Deck Quality Assurance (P24-21046)

Nicolas Gagarin

A Systematic Methodology for Evaluating and Balancing Acceptance Risks with Pay Factors in Quality Assurance of Highway Construction Materials (TRBAM-24-05232)

Sahand Karimi/University of Maryland, College Park, Dimitrios Goulias/University of Maryland, College Park, Yunpeng Zhao/University of Maryland, College Park

Impact of the Florida Department of Transportation's Incentive and Disincentive Specifications on Long-Term Asphalt Pavement Performance (TRBAM-24-00801)

Hyung Suk Lee/Applied Research Associates, Inc., Howard Moseley/Applied Research Associates, Inc., Gregory Sholar/Applied Research Associates, Inc., Bouzid Choubane/Applied Research Associates, Inc.

Quality Assurance in Rigid Pavements (P24-21047)

Dan Zollinger/Texas A&M University, College Station

3083

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 207A

Select Papers from the 2023 Low-Volume Roads Conference

Asif Faiz, World Bank, presiding
Laura Fay, Western Transportation Institute (WTI), presiding
Andrew Ceifetz, WSP, presiding
Sponsored By Standing Committee on Low-Volume Roads

The Development of a Tool for Determining Optimal Material Blends for Unpaved Road Wearing Courses (P24-20289)

David Jones/University of California, Davis

The Role of Temperature Gradient and Soil Thermal Properties on Frost Heave (P24-20290)

Bora Cetin/Michigan State University

Application of Lightweight Deflectometer to Assess the Structural Competency of Nontraditional Airfield Pavements During Contingency Aircraft Operations (P24-20291)

Victor Garcia/U.S. Army Corps of Engineers (USACE)

Sign Life Expectancy on Low-Volume Roads in Iowa (P24-20292)

David Veneziano/Iowa State University

3084

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 101

Roadway Context and the Community: Serving Everyone's Needs

Jeffrey Lormand, Parsons, presiding
Christine Colley, New York State Department of Transportation, presiding
Sponsored By Standing Committee on Landscape and Environmental Design, Standing Committee on Performance Effects of Geometric Design, Standing Committee on Roadside Maintenance Operations

Come listen to three experts showcase leading edge tools and rules related to Context, Accessibility and Community Ecosystems

(continued)

New Tools to Support Contextual Roadway Planning and Design (P24-20070)

Nikiforos Stamatiadis/University of Kentucky, Brian Ray/Sunrise Transportation Strategies, LLC, Adam Kirk/Kentucky Transportation Cabinet

Access Board Public Right-of-Way Accessibility Guidelines Updates (P24-20071)

Juliet Shoultz/U.S. Architectural and Transportation Barriers Compliance Board

Blockchain and Distributed Autonomous Community Ecosystems: Opportunities to Democratize the Finance and Delivery of Transport, Housing, Urban Greening, and Community Infrastructure (P24-20145)

William Riggs/University of San Francisco

New Tools to Support Contextual Roadway Planning and Design (TRBAM-24-00552)

Nikiforos Stamatiadis/Kentucky Transportation Cabinet, Brian Ray/Kentucky Transportation Cabinet, Adam Kirk/Kentucky Transportation Cabinet

Blockchain and Distributed Autonomous Community Ecosystems: Opportunities to Democratize Finance and Delivery of Transport, Housing, Urban Greening and Community Infrastructure (TRBAM-24-06331)

William Riggs/University of San Francisco

3085

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 202B

Well-Designed Roundabouts Are Still Saving Lives

Howard McCulloch, New York State Department of Transportation, presiding

Sponsored By Standing Committee on Roundabouts and other Intersection Design and Control Strategies

Roundabouts are still saving lives! Come join us talk about the new national Guide for Roundabouts (NCHRP 1043) and the next generation of roundabouts through the lens of the preliminary findings from the Global Benchmarking Program Turbo Roundabout project with lessons learned from Poland, Czech Republic, and Netherlands. We will also showcase research on an innovative Jughandle and U-Turn intersection and a new tandem intersections concept.

2023 Guide for Roundabouts: What You Need to Know (P24-20708)

Brian Ray/Sunrise Transportation Strategies, LLC, Lee Rodegerdts/Kittelsohn & Associates, Inc.

Integrated Optimization Model of Lane Function and Signal Control for Tandem Intersections (TRBAM-24-01738)

Zhe Zheng/Tongji University, Nan Zheng/Tongji University, Kun An/Tongji University, Zicheng Su/Tongji University, Wanjing Ma/Tongji University

Analysis for the Alternative Intersection Design of Frontage Road as Jughandle and U-Turn Route at the Planning Stage (TRBAM-24-00441)

Yen-Hsiang Chen/National Taiwan University, Yuan-Hao Huang/National Taiwan University, Ming-Tsung Lee/National Taiwan University

Turbo Roundabouts: A Global Benchmarking Program Study (P24-20709)

Hillary Isebrands/Federal Highway Administration (FHWA), Letty Schamp/City of Hilliard, Ohio, Jeffrey Shaw/Federal Highway Administration (FHWA), Joseph Hummer/North Carolina Department of Transportation, Douglas Carter/Minnesota Department of Transportation

3086

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 207B

Landslides and Climate Change: Alaska

Vanessa Bateman, U.S. Army Corps of Engineers (USACE), presiding

Derrick Dasenbrock, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Engineering Geology, Subcommittee on Geotechnical Asset Management

Decreasing Geo-Asset Risk in a Climate of Increasing Risk (P24-20861)

Derrick Dasenbrock/Federal Highway Administration (FHWA), Kaitlyn Diederichs/University of Victoria

Permafrost Tunnel: A Unique Laboratory to Study Climate Change Impacts on Permafrost (P24-20866)

April Fontaine/U.S. Army Corps of Engineers (USACE)

Glitter Gulch, Landslides, and Rockfall: Designing for Resilience in the Face of Climate Change (P24-20863)

Darren Beckstrand/Landslide Technology, Jeff Currey/Alaska Department of Transportation and Public Facilities

Lowell Creek Diversion Tunnel: Resilience, Landslides, and Debris Flow (P24-20862)

Vanessa Bateman/U.S. Army Corps of Engineers (USACE), April Fontaine/U.S. Army Corps of Engineers (USACE), Coleman Chalup/U.S. Army Corps of Engineers (USACE)

Pretty Rocks Landslide (P24-20864)

Evan Garich/Federal Highway Administration (FHWA), Cole Christiansen/BGC Engineering Inc., Scott Anderson/BGC Engineering Inc

3087

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 209AB

Past, Present, and Future Innovations in Geomaterial Stabilization and Recycling

Khaled Sobhan, Florida Atlantic University, presiding

Larry Peirce, LHOIST, presiding

Sponsored By Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Low-Volume Roads, Standing Committee on Soil and Rock Properties and Site Characterization, Standing Committee on Geo-Environmental and Climatic Impacts on Geomaterials, Standing Committee on Transportation Earthworks, Standing Committee on Geosynthetics, Standing Committee on Asphalt Mixture Evaluation and Performance, Standing Committee on Aggregates, Joint Subcommittee on Unbound Granular Materials (with AKG00), Standing Committee on Design and Rehabilitation of Concrete Pavements, Standing Committee on Design and Rehabilitation of Asphalt Pavements, Standing Committee on Pavement Structural Testing and Evaluation

This session will detail some of the history in stabilization and recycling innovations as well as discuss current practices. The session will end with examining recent innovations and a look toward the future in what stabilization and recycling can do as well as what pitfalls to avoid.

Introductory Remarks (P24-20112)

Khaled Sobhan/Florida Atlantic University

History of Stabilization and Recycling (P24-20082)

Kang-Won "Wayne" Lee/University of Rhode Island

The U.S. Military's Role in Advancing Stabilization (P24-20083)

Jeb Tingle/U.S. Army Corps of Engineers (USACE)

Current Stabilization and Recycling Practices: A County Perspective (P24-20084)

John Shi/Maricopa County Department of Transportation, Gant Yasanayake/Maricopa County (AZ)

Current and Recent Innovations in Stabilization (P24-20085)

Lulu Edwards/U.S. Army Corps of Engineers (USACE), William Carruth/US Army Corps of Engineers Waterways Experiment Station: US Army Engineer Research and Development Center

Rethinking Design, Testing, and Specifications for Cold Recycling and Stabilization Projects (P24-20086)

David Jones/University of California, Davis

3088

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 204C

Sustainable Opportunities for Asphalt and Concrete Aggregates

Kyle Brashear, Martin Marietta, presiding

Sponsored By Standing Committee on Aggregates, Standing Committee on Asphalt Pavement Construction and Rehabilitation, Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Binders for Flexible Pavement, Standing Committee on Asphalt Mixture Evaluation and Performance, Standing Committee on Design and Rehabilitation of Concrete Pavements

Enhancing Performance and Reducing Environmental Impact of Concrete with Full Replacement of Recycled Concrete Aggregate Treated with Various CO2 Pressures (TRBAM-24-05790)

Fouad Ismail/University of Nebraska, Lincoln, Miras Mamirov/University of Nebraska, Lincoln, Seunghee Kim/University of Nebraska, Lincoln, Jiong Hu/University of Nebraska, Lincoln

The Impact of Clay Contamination on Rutting Performance of Asphalt Mixtures (TRBAM-24-04955)

Sharmila Afsha/University of Texas, El Paso, Suhail Vaid/University of Texas, El Paso, Miguel Montoya/University of Texas, El Paso, Imad Abdallah/University of Texas, El Paso, Soheil Nazarian/University of Texas, El Paso

Alternative Approaches for Rapid Evaluation of Frictional Resistance of Aggregates (TRBAM-24-04819)

G. Sandeep Reddy/University of Texas, El Paso, Miguel Montoya/University of Texas, El Paso, Imad Abdallah/University of Texas, El Paso, Soheil Nazarian/University of Texas, El Paso, Richard Izzo/University of Texas, El Paso

Freeze-Thaw Performance Trends of Short-Term Cured Cement Stabilized Aggregate Quarry By-Product Materials (TRBAM-24-04563)

Taeyun Kong/University of Illinois, Urbana-Champaign, Chirayu Kothari/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Nishant Garg/University of Illinois, Urbana-Champaign, Tim Peters/University of Illinois, Urbana-Champaign, Andrew Stolba/University of Illinois, Urbana-Champaign

3089

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 103B

Highway Worker Safety: Research, Solutions, and Evaluations Related to Maintenance Equipment

Lisa Kunzman, L Kunzman Consulting, presiding

Sponsored By Standing Committee on Maintenance Fleet and Equipment

Highway worker safety is of the utmost importance to highway agencies and is in the forefront of the research, solutions, and evaluations presented in this session. The session begins with applicable research on warning lights and vehicle markings, key safety features of maintenance equipment and vehicles. Next, challenges and solutions using autonomous vehicle technology in truck mounted attenuator vehicles (critical safety highway maintenance vehicles) are presented. Lastly, an evaluation of pertinent applications of a mobile work zone protection system (Caltrans Balsi Beam) that protects highway workers with “shields of steel” in the work zone is shared.

Warning Lights and Vehicle Markings: AIMing for Improved Safety (P24-20364)

John Bullough/Icahn School of Medicine at Mount Sinai

Challenges and Solutions for the Use of Autonomous Truck Mounted Attenuators in Highway Applications (P24-20365)

Shima Nazari/University of California, Davis

Evaluating Applications of Mobile Work Zone Protection System (California Department of Transportation Balsi Beam) for Worker Protection in Highway Work Zones (P24-20367)

Bahram Ravani/University of California, Davis

3090

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 206

Where the Weather Meets the Road: Time to Refresh?

Paul Pisano, Paul Pisano LLC, presiding

Sponsored By Standing Committee on Road Weather, Standing Committee on Winter Maintenance

In 2004, the National Academies via the Board on Atmospheric Science and Climate published a seminal report entitled Where the Weather Meets the Road. A panel of experts across the transportation and meteorological communities worked together to examine the research opportunities and required services needed to support improved weather-related information for the nation's roadways. The resulting report provided a framework and recommendations to guide road weather research across the two communities, serving as an influential foundation for research conducted over subsequent years. Twenty years later, it is time to revisit the report and consider how best to refresh it and help guide future road weather research.

History and Context of Where the Weather Meets the Road (P24-20092)

Paul Pisano/Paul Pisano LLC

The Future of Road Weather: Meteorological Policy Perspective (P24-20094)

Paul Higgins/American Meteorological Society

The Future of Road Weather: Transportation Perspective (P24-20093)

Richard Nelson/American Association of State Highway and Transportation Officials

The Future of Road Weather: Meteorological Research Perspective (P24-20095)

Gina Eosco/National Oceanic and Atmospheric Administration (NOAA)

3091

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 146A

A Movement Toward Reparative Transportation and Community Building: The Aftermath of Urban Freeway Planning, Locating, and Construction

Gloria Jeff, Minnesota Department of Transportation, presiding

Sponsored By Section - Transportation and Society, Standing Committee on Equity in Transportation, Standing Committee on Equity in Transportation

The creation of the U.S. interstate highway system, initiated by the Federal Aid Highway Act of 1956, was complex, multifaceted, and impactful, affecting individual parts of the country in idiosyncratic ways. It disrupted established communities -- between the mid 1950s and late 1970s, a million people were displaced and new highways were driven through numerous Black, Brown, and low income neighborhoods. Many of these communities resisted and helped modify these intrusions by highway construction on their neighborhoods, and in recent years historical and highway research has examined these highway routing decisions as well as the efforts by affected communities to resist them, or, in the aftermath of highway construction, to assert and restore themselves. In this session, policy-driven community destruction and resident-driven community revitalization are examined. First, the usefulness and value of a group of essays for documenting and teaching perspectives on urban and highway policy and planning will be assessed. A second presentation examines this history in an additional location, Sacramento, California. The session will conclude as a moderated panel discussion of challenges, successes, and future directions for community responses to the damages suffered from past highway construction disruptions to neighborhoods and lives. This panel will build on work done in October during a conference on community restorations held in Rondo, Minnesota, a historically Black neighborhood of St. Paul that was damaged by interstate highway construction.

Highway (in)Justice: Freeway Revolts and Freeway Removal (P24-20163)

Owen Gutfreund/City University of New York

Lessons from Rondo (P24-20164)

Keith Baker/ReConnect Rondo

The Historical Impacts of Freeway Construction and Urban Renewal in Sacramento (TRBAM-24-04625)

Aakansha Jain/University of California, Davis, Juan Garcia Sanchez/University of California, Davis, Katherine Turner/University of California, Davis, Jesus Barajas/University of California, Davis, Susan Handy/University of California, Davis

3092

CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 146B

Critical Infrastructure Resilience: Considering the Cascading Effects

Maria Pena, Gannett Fleming, Inc., presiding

Rawlings Miller, TRC, presiding

Sybil Derrible, University of Illinois, Chicago, presiding

Sponsored By Standing Committee on Critical Transportation Infrastructure Protection, Standing Committee on Systems, Enterprise, and Cyber Resilience, Standing Committee on Extreme Weather and Climate Change Adaptation

The resilience of critical infrastructure has been an important topic of discussion during the past years. Urban systems are composed of critical infrastructures such as energy and water supply, transport and telecommunications networks that function as complex interconnected networks that are essential to the functionality of a society. Due to this interconnectivity, it is important to identify how the resilience of a particular sector or mode may affect the resilience of the entire system. This session will present different case studies where the cascading effects of critical infrastructure at risk have been examined to support building resilience across the system.

Dynamic Networks for Modeling Uncertain Infrastructure Interdependency: A Case Study on Transportation and Power Systems (P24-20390)

Hiba Baroud/Vanderbilt University

The Port Authority of New York and New Jersey's Approach to Quantifying the Consequences of Cascading Critical Asset Disruptions (P24-20392)

Joshua DeFlorio/Port Authority of New York and New Jersey

(continued)

Cascading Failures in Flash Floods: A Study on the Interdependent Transportation and Stormwater Systems (P24-20393)

Arif Mohaimin Sadri/University of Oklahoma

Lessons Learned from the Energy and Transportation Case Study: Colonial Pipeline (P24-20394)

Steven Polunsky/Washington State Department of Commerce

3093

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 146C

Climate Risk: Impact on Insurance and Infrastructure Financing

Ben Harper, Stonepeak Infrastructure, presiding

Bradley Dean, U.S. Department of Homeland Security, presiding

Sponsored By Standing Committee on Extreme Weather and Climate Change Adaptation

3094

CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 140

Land Use, Vehicle Miles Traveled, and Behavioral Approaches to Reduce Greenhouse Gas Emissions

Marianne Hatzopoulou, University of Toronto, presiding

Sponsored By Standing Committee on Air Quality and Greenhouse Gas Mitigation, Standing Committee on Resource Conservation and Recovery, Standing Committee on Transportation Energy

This session will focus on transport decarbonization through reduction in vehicle miles travelled, urban planning, and transit development. Attendees will learn 1) ways in which planning and policy can enable low carbon transportation, 2) the role of policy in shaping individual mobility choices, 3) the equity implications of decarbonizing transportation.

Investigating the Triple Burden of Socioeconomic Disparities, Mobility Poverty, and Air Pollution Exposure in Toronto's Neighborhoods (TRBAM-24-02350)

Junshi Xu/University of Toronto, Milad Saeedi/University of Toronto, Jad Zalzal/University of Toronto, Mingqian Zhang/University of Toronto, arman ganji/University of Toronto, Keni Mallinen/University of Toronto, An Wang/University of Toronto, Marshall Lloyd/University of Toronto, Alessya Venuta/University of Toronto, Leora Simon/University of Toronto, Scott Weichenthal/University of Toronto, Marianne Hatzopoulou/University of Toronto

The Interactive Impacts Between Income and Built Environment Attributes on Travel-Related Carbon Emissions (TRBAM-24-03924)

Tao Tao/Carnegie Mellon University

Using Explainable Machine Learning to Interpret the Effects of Policies on Air Pollution: The COVID-19 Lockdown in London (TRBAM-24-04348)

Liang Ma/Imperial College London, Daniel Graham/Imperial College London, Marc Stettler/Imperial College London

Moral Foundations as a Moderating Effect on the Influence of Framing Climate Change Emissions in a Vehicle Choice Experiment (TRBAM-24-05864)

Bobin Wang/Laval University, E.O.D Waygood/Laval University, Xun Ji/Laval University, Mahdie Asl Javadian/Laval University, Long Pan/Laval University, Matthew Feinberg/Laval University

Modeling Environment and Energy Impacts of Land Transport for the Kingdom of Saudi Arabia: A Tool for Policy Dialogue and Near-Term Climate Action (TRBAM-24-00846)

Rayan AlHazmi/World Bank, Abdulrahman Al-Musallam/World Bank, Aus Bukhari/World Bank, Joanna Moody/World Bank, Muneeza Alam/World Bank, Robin Carruthers/World Bank

Public Acceptance of Vehicle Pricing Policies for Climate: A Review of Insights for Successful Implementation (TRBAM-24-04870)

Jonn Axsen/Simon Fraser University, Zoe Long/Simon Fraser University

3095 CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 145B

Station Vertical Circulation: Connecting People, Planning, and Policy

Qian Xiong, EXP, presiding

Lisa Ballard, King County (WA) Metro Transit, presiding

Sponsored By Standing Committee on Passenger Intermodal Facilities

Elevators, escalators and stairs (known as vertical circulation equipment, or VCEs) are an essential component of larger intermodal passenger facilities. This session will include a paper presentation and panel discussion about current worldwide trends, policies and practices regarding VCE planning.

Review of the Escalator Studies and Way Forward (TRBAM-24-03337)

Dharitri Kahali/Indian Institute of Technology, Roorkee

Practitioners Panel Discussion (P24-20760)

Svetlana Grechka/Regional Transportation District (Denver), Qian Xiong/EXP, Mark Walker/WSP, Fred Robertson/Washington Metropolitan Area Transit Authority, James Harper/Chicago Transit Authority

3096 CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 145A

Light Rail Transit Operations and Rider Experience

Ehab Diab, University of Saskatchewan, presiding

Sponsored By Standing Committee on Light Rail Transit

Substantial funding is dedicated to building new and expanding current light rail transit (LRT) networks worldwide. This is to improve users' experience and transit ridership by attracting new riders while retaining existing ones. This session offers insights into residents' experiences and perceptions of the construction impact of a large-scale LRT project. It also offers a new approach to estimating LRT ridership. In terms of service planning, it explores the feasibility of single-track laterally positioned LRT lines.

The Feasibility of Suburban, Single-Track, Laterally Positioned, Light Rail Transit Lines in the Modern United States (TRBAM-24-00855)

Henry Mulvey/University of Massachusetts, Amherst, Eric Gonzales/University of Massachusetts, Amherst, Michael Knodler/University of Massachusetts, Amherst

Toward a Better Understanding of the Construction Impacts of a Light Rail System in Montréal, Canada (TRBAM-24-01056)

Megan James/McGill University, Lancelot Rodrigue/McGill University, Ahmed El-Geneidy/McGill University

Agent-Based Modeling Suite for Transit Ridership Estimation: A Case Study for Maryland's Purple Line (TRBAM-24-04494)

Md Mahmudul Huque Chayan/University of Maryland, College Park, Cinzia Cirillo/University of Maryland, College Park

3098

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 147A

Transitioning Toward Low Emission Vehicles in Urban Freight

Ivan Sanchez-Diaz, Chalmers University of Technology, presiding

Sponsored By Standing Committee on Urban Freight Transportation

One of the biggest challenges facing economic activities is the urgency of transitioning towards a more sustainable system. Urban freight transportation is not the exception. Cities are now looking for ways to decrease emissions, foster low emission vehicles and encourage practices that can lead to a more sustainable last mile. This transition requires not only new technology but also logistics initiatives and managerial solutions that ensure the success of this transition. This session will present research that evaluates the sustainability of last mile solutions, as well as research showing the advances in routing of electric vehicles and providing insights about the use of cargo bikes.

(continued)

Determinants for the Use of a Small Vehicle Type in Urban Logistics: A Stated Preference Survey Among Commercial Transport Operators (TRBAM-24-01812)

Johannes Gruber/German Aerospace Center (DLR), Institute of Transport Research, Martin Plener/German Aerospace Center (DLR), Institute of Transport Research, Lara Damer/German Aerospace Center (DLR), Institute of Transport Research, Ilka Dubernet/German Aerospace Center (DLR), Institute of Transport Research

Fleet-Mix Electric Vehicle Routing Problem for the E-Commerce Delivery with Limited Off-Hour Delivery Implementation (TRBAM-24-04981)

Hyunseop Uhm/Argonne National Laboratory, Abdelrahman Ismael/Argonne National Laboratory, Natalia Zuniga-Garcia/Argonne National Laboratory, Olcay Sahin/Argonne National Laboratory, James Cook/Argonne National Laboratory, Joshua Auld/Argonne National Laboratory, Monique Stinson/Argonne National Laboratory

Assessing the Sustainability of Last-Mile Logistics Solutions: Application to Urban Consolidation Centers and Low-Emission Vehicles in Madrid (TRBAM-24-00502)

Natalia Sobrino/Universidad Politecnica de Madrid, Juan Nicolas Gonzalez/Universidad Politecnica de Madrid, Laura Garrido/Universidad Politecnica de Madrid, José Manuel Vassallo/Universidad Politecnica de Madrid

Activity-Based Travel Chain Simulation for Battery-Swapping Demand of Delivery Electric Micromobility Vehicles (TRBAM-24-01165)

Zijie Xu/Southeast University, Fan Zhang/Southeast University, Chenchen Kuai/Southeast University, Melvin Wong/Southeast University, Yanjie Ji/Southeast University, Qian Meng/Southeast University

3099

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 144AB

Response and Recovery for the East Palestine, Ohio Derailment and Hazmat Release: Lessons Learned and Next Steps

David Bierling, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Transportation of Hazardous Materials

In February 2023, a freight train derailed in East Palestine, Ohio resulting in a multijurisdictional emergency response and ongoing recovery. Eleven tank cars carrying hazardous materials ignited and burned. First responders implemented a one-mile that affected up to 2,000 residents. Specialized vent-and-burn techniques were used to create a controlled release to mitigate the potential threats of uncontrolled explosions. In September 2023, President Biden issued an Executive Order directing FEMA to appoint a federal disaster recovery coordinator to oversee long-term recovery efforts among other actions. Speakers will present information from their agency and/or expert perspectives on the incident, cleanup, lessons learned, and future work.

Federal Response and Next Steps (P24-21399)

Mark Maday/Federal Railroad Administration (FRA)

After East Palestine: How Can Communities and Emergency Responders Be Better Prepared? (P24-21400)

Howard Elliott/HRE Integrity, LLC

Health Exposures and Outcomes from Transportation Disasters: Lessons Learned from the National Academies' Public Health and Surveillance Priorities Workshop (P24-21482)

Scott Wollek/National Academies: National Academies of Sciences Engineering and Medicine

3100 CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 143C

Evolution of Air and Water Quality Regulations and Impact on Aviation

Christopher Zevitas, Office of the Assistant Secretary for Research and Technology (OST-R), presiding

Robert Gross, Crawford, Murphy, and Tilly, Inc., presiding

Sponsored By Standing Committee on Environmental Issues in Aviation

Recent changes in regulations have had a significant impact on how airports manage air and water quality impacts based on continuously evolving and new research. This session will highlight important updates including those relating to (i) national ambient air quality standards (NAAQS), (ii) management of Per- and polyfluoroalkyl substances (PFAS) at airports, and (iii) new guidance on greenhouse gas emissions inclusion in environmental documents.

Air Quality Research Developments: What Is Needed to Develop Standards for Particulate Matter and Ultrafine Particles (P24-20784)

Allison Patton/Health Effects Institute

Quantifying Greenhouse Gas Emissions and Reductions: The Latest Tools for Implementing the Newest Council on Environmental Quality National Environmental Policy Act Guidance (P24-20785)

Anjuliee Mittelman/OST-R/Volpe Center, Matthew Simon/OST-R/Volpe Center

ACRP Research Report 255: PFAS Source Differentiation Guide for Airports (P24-20786)

Janet Anderson/GSI Environmental Inc, Dan Schneider/Terracon Consultants, Inc., Zachary Puchacz/Mead & Hunt, Inc.

3101 CM (1.75)

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 143AB

Developments in Commercial Aircraft and Air Service

John Heimlich, Airlines for America, presiding

Sponsored By Standing Committee on Aviation Economics and Forecasting

The pandemic has changed the way we think about work-life balance, how and how often we commute to work, our desire for experiences and time with friends and family, and how and when we travel. At the same time, social media has stimulated feelings of YOLO and interest in exploring the world, while aviation has become front and center in the quest for sustainability. During this session, panelists will discuss issues including the degree to which societal changes are transforming commercial aviation and the roles that airlines, aerospace companies and governments have to successfully respond to these changes.

TD Cowen Perspective (P24-20132)

Helane Becker/TD Cowen

JetZero Perspective (P24-20133)

Barry Eccleston/JetZero

Delta Air Lines Perspective (P24-20134)

Amy Martin/Delta Air Lines

3102

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 144C

Ferry Operations Future Funding: Census and Governance

Catherine Peele, North Carolina Department of Transportation, presiding

Sponsored By Standing Committee on Ferry Transportation

The Role of Ferries in Intercity Mobility-as-a-Service: Exploring Users' Acceptance and Willingness to Pay (TRBAM-24-03652)

Georgios Papaioannou/University of the Aegean, Ioannis Tsouros/University of the Aegean, Amalia

Polydoropoulou/University of the Aegean

Effects and Factors of Non-Responses in National Census of Ferry Operators (TRBAM-24-04818)

Young-Jun Kweon/OST-R/Bureau of Transportation Statistics, Clara Reschovsky/OST-R/Bureau of Transportation Statistics

Ferry Boat Program (P24-20723)

Omar Elkassed/Federal Highway Administration (FHWA)

U.S. Maritime Administration Perspective (P24-20724)

Timothy Pickering/U.S. Maritime Administration

3103



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Ballroom A

State DOT CEO Roundtable: Maximizing Investment, Safety, and Workforce Together

Craig Thompson, Wisconsin Department of Transportation, presiding

Sponsored By Executive Committee

This session will focus on AASHTO President Craig Thompson's Emphasis Areas, which seek to fully harness the capabilities of AASHTO as an organization and the combined resources and expertise of its state departments of transportation members to move our transportation system into the future together. Specifically, the session will examine how state DOTs can get the most out of the historic federal investments in infrastructure, improve safety, and develop our workforce.

Panel Discussion (P24-21187)

Garrett Eucalitto/Connecticut Department of Transportation, Nicole Majeski/Delaware Department of Transportation, Roger Millar/Washington State Department of Transportation, Patrick McKenna/Missouri Department of Transportation, Eileen Vélez-Vega/Puerto Rico Department of Transportation and Public Works

3153

Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, 147B

New Technology in Track Condition Assessment

Marcus Dersch, University of Illinois, Urbana-Champaign, presiding

Sponsored By Standing Committee on Railroad Infrastructure Design and Maintenance

Track Inspection (P24-21092)

Charity Duran/BNSF Railway

Use of 3D Laser Triangulation and Artificial Intelligence for Automated Switch and Crossing Inspection (P24-21093)

Richard Fox-Ivey/Pavemetrics Systems Inc.

Automated Inspection of Railway Point Assets (P24-21094)

Bernhard Metzger/ENSCO, Inc.

Edge-Computing Oriented Real-Time Missing Track Components Detection (P24-21095)

Yu Qian/University of South Carolina

Efficient Approach for Continuous Monitoring of Track, Freight Performance, and Passenger Comfort (P24-21096)

Mani Entezami/University of Birmingham

3104



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Managed Lanes Safety, Operations, and Simulations

Srikanth Panguluri, Jacobs, presiding

Sponsored By Standing Committee on Managed Lanes

Safety Performance Functions and Crash Modification Factors for Concurrent Flow Managed Lanes Facilities (TRBAM-24-01470) - B786

Jimoku Salum/SRF Consulting, Cecilia Kadeha/SRF Consulting, Priyanka Alluri/SRF Consulting, Srinivas Geedipally/SRF Consulting

Identification of Road Network Traffic Lifelines Based on Urban Resilience (TRBAM-24-02191) - B787

Gong Huatian/Tongji University, Xiaoguang Yang/Tongji University, Wang Yixuan/Tongji University, Xu Yiran/Tongji University, Yang Xia/Tongji University

A Simulation Approach to Estimate the Potential of HOT-Lanes on German Freeways (TRBAM-24-02373) - B777

Thomas Schönhofer/Technische Universität, München, Bernd Kaltenhäuser/Technische Universität, München, Klaus Bogenberger/Technische Universität, München

(continued)

Reinforcement Learning for Efficient Bus Priority Systems: Balancing Transit Efficiency and Traffic Impact (TRBAM-24-03289) - B773

Emmanouil Kampitakis/National Technical University of Athens (NTUA), Konstantinos Katziieris/National Technical University of Athens (NTUA), Eleni Vlahogianni/National Technical University of Athens (NTUA)

Dynamic Traffic Lane Reversal on Urban Arterials Using Reinforcement Learning Methods (TRBAM-24-03307) - B772

Konstantinos Katziieris/National Technical University of Athens (NTUA), Katerina Vakrinou/National Technical University of Athens (NTUA), Emmanouil Kampitakis/National Technical University of Athens (NTUA), Eleni Vlahogianni/National Technical University of Athens (NTUA)

Research on the Cooperation Mechanism of Highway Derivative Economy Stakeholders Based on Evolutionary Game Theory (TRBAM-24-03711) - B782

Wenbing Shui/Kunming University of Science and Technology, Peiling Jiang/Kunming University of Science and Technology, Jie Liu/Kunming University of Science and Technology, Mingwei He/Kunming University of Science and Technology

An Analysis Method of User Travel Benefit on Urban Expressway Under Reservation Scenarios (TRBAM-24-05091) - B781

Meiping Yun/Urban Mobility Institute, Tongji University, Zihao Zhou/Urban Mobility Institute, Tongji University

Resilient Design and Engagement for Sustainable Modern Managed Lanes Corridors (P24-20934) - B750

Robert Frey/Tampa-Hillsborough County Expressway, Anna Quinones/Tampa Hillsborough Expressway Authority, Sisinnio Concas/University of South Florida

Leveraging Connected Vehicle Data to Implement a Proactive Congestion Detection Protocol (P24-20935) - B760

Robert Frey/Tampa-Hillsborough County Expressway, Anna Quinones/Tampa Hillsborough Expressway Authority, Sisinnio Concas/University of South Florida, Vishal C. Kummetha/University of South Florida

I-77 Managed Lanes: Who We Are and How Do We Create an Impact? (P24-20936) - B762

Bagya Sarangapani/I-77 Mobility Partners, Nancy Chhetri/I-77 Mobility Partners

Analyzing Bus-Only Lane Installation and Operation Strategies with Autonomous Bus Implementations (P24-20937) - B778

Hojae Kim/Hanyang University, Ansan, Seongmin Park/Hanyang University, Juneyoung Park/Hanyang University, Ansan

Enhancing Traffic Flow with Connected and Autonomous Vehicle Dedicated Lanes: A System-Optimal Tolling Approach (P24-20938) - B752

Sania Esmaeilzadeh Seilabi/Purdue University, Mohammadhosein Pourgholamali/Purdue University, Mohammad Miralinaghi/Illinois Institute of Technology, Gonçalo Homem de Almeida Correia/Technische Universiteit Delft, Samuel Labi/Purdue University

A Lane Utilization-Based Calibration for Modeling Driver Behavior in the Vicinity of Managed Lanes (P24-20939) - B763

Soheil Sajjadi/Arcadis US Inc, Jochen Lohmiller/Berliner Hochschule für Technik, Alexandra Kondyli/University of Kansas, Weimin Jin/Arcadis US Inc, Mahgam Tabatabaei/University of Kansas, Marilo Martin-Gasulla/PTV Planung Transport Verkehr AG

Exploration of Managed Lane Entrance Designs for Autonomous Driving Buses (P24-20940) - B788

Sungjun Lee/Hanyang University, ERICA, Jeongho Jeong/Korea Transport Insitute, Juneyoung Park/Hanyang University, Ansan, Soong-bong Lee/Hanyang University, ERICA

Leveraging Location-Based Data for Assessing Network-Level Traffic Impact of Lane Management: A Case Study of Alex Fraser Bridge (P24-20941) - B753

Smita Sharma/Lindsay Transportation Solutions, Eunhan Ka/Purdue University

Ensuring Fair Access to 66 Express Outside the Beltway for All: A Case Study in Vehicle Eligibility (P24-20961) - B764

Thu Hoang/I-66 Express Mobility Partners, Jin Young Park/I66 EMP, Zhuojin Jia/I66 EMP

2024 Federal Highway Administration National Inventory of Specialty Lanes and Roads (P24-20962) - B754

Nick Wood/Texas A&M Transportation Institute, Vivek Gupta/Texas A&M Transportation Institute, James Cardenas/Texas A&M Transportation Institute, Deepak Raghunathan/ICF, Neil Spiller/Federal Highway Administration (FHWA)

Quantifying the Economic Impacts of Managed Lanes in Dallas-Fort Worth (P24-20963) - B765

Upendar Telukuntla/Cintra

What Do We Know About the Express Lane Usage Trend?: Is the Attractiveness Going Upward, Downward, or Remain Stable? (P24-20964) - B755

Md Sakoat Hossan/WSP, Muraduzzaman Masum/Unknown

I-5 Managed Lanes Project: A Case Study (P24-20965) - B785

Udit Molakatalla/DKS Associates, Inc.

(continued)

Vehicle and Person Throughput Analysis Before and After the I-75 Northwest Corridor and I-85 Express Lanes Extension: A Case Study of Atlanta, Georgia (P24-20966) - B775

Hongyu Lu/Georgia Institute of Technology, Randall Guensler/Georgia Institute of Technology

Commutershed and Demographic Analysis Before and After the I-75 Northwest Corridor and I-85 Express Lanes Extension: A Case Study of Atlanta, Georgia (P24-20967) - B784

Hongyu Lu/Georgia Institute of Technology, Randall Guensler/Georgia Institute of Technology

High-Occupancy Vehicle Managed Lanes: Vehicle Occupancy Evaluation in the Houston Area (P24-20968) - B774

Robert Benz/Texas A&M Transportation Institute

Weekend Operations in the Houston Area (P24-20969) - B783

Robert Benz/Texas A&M Transportation Institute

3105



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Marking the Way Forward: Innovations in Pavement Marking Research

Chieh Ross Wang, Oak Ridge National Laboratory, presiding

Sponsored By Standing Committee on Traffic Control Devices

This session features a variety of pavement marking research topics such as utilizing emerging technologies for pavement marking detection and condition assessment and prediction, as well as investigating the effect of pavement marking properties (e.g., width and retroreflectivity) and configuration (e.g., speed-reduction markings) on safety.

Automating Intersection Marking Data Collection and Condition Assessment at Scale with an Artificial Intelligence–Powered System (TRBAM-24-00496) - B757

Kun Xie/Old Dominion University, Huiming Sun/Old Dominion University, Xiaomeng Dong/Old Dominion University, Hong Yang/Old Dominion University, Hongkai Yu/Old Dominion University

Advancements in Lane-Marking Detection: A Comparative Analysis of State-of-the-Art Techniques and Future Research Directions (TRBAM-24-03562) - B767

Shaofan Sheng/Imperial College London, Nicolette Formosa/Imperial College London, Mohammed Quddus/Imperial College London, Moinul Hossain/Imperial College London

Diagnosis of Broken and Worn Traffic Markings Using a Hybrid Neural Network (TRBAM-24-04173) - B768

Lipeng Xu/Xinjiang University, Zhizhou Wu/Xinjiang University, Jinjun Tang/Xinjiang University, Yunyi Liang/Xinjiang University

Development of a Machine Learning–Based Tool to Predict Retroreflectivity of Pavement Markings Across the United States (TRBAM-24-02553) - B759

Ipshita Idris/Louisiana State University, Momen Mousa/Louisiana State University, Marwa Hassan/Louisiana State University, Paul Carlson/Louisiana State University, Eric Greyson/Louisiana State University

Study on the Enrichment of Pavement Marking Width and Retroreflectivity on Elderly Drivers' Safety (TRBAM-24-01613) - B758

Yanyan Guan/Beijing University of Technology, Jiangbi Hu/Beijing University of Technology, Ronghua Wang/Beijing University of Technology

Which Pavement Markings Do Drivers Prefer? A Multi Aspect Human Factors Study. (TRBAM-24-06294) - B779

Maryam Shirinzad/Texas A&M Transportation Institute, Adam Pike/Texas A&M Transportation Institute

Simulation and Real-World Study for Assessment Speed-Reduction Pavement Marking's Effects on Urban Roads (TRBAM-24-01804) - B789

Nuri Park/Hanyang University, Seongmin Park/Hanyang University, Donghee Oh/Hanyang University, Sungjun Lee/Hanyang University, Juneyoung Park/Hanyang University, Samgyu Yang/Hanyang University

Determination of Friction Performance and Metrics for Pavement Markings: A Case Study (TRBAM-24-05111) - B769

Jieyi Bao/Purdue University, Xiaoqiang Hu/Purdue University, Ayesha Shah/Purdue University, Yi Jiang/Purdue University, Shuo Li/Purdue University

3106



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Statewide and National Data and Information Systems

Penelope Weinberger, American Association of State Highway and Transportation Officials, presiding

Peggi Knight, Iowa Department of Transportation, presiding

Sponsored By Standing Committee on Statewide/National Transportation Data and Information Management

Where The Borders Lie: Mapping Cross-Border Communities in Ten Western European Countries

(TRBAM-24-06264) - A383

Aurore Sallard/IVT ETH Zürich, François Hublet/IVT ETH Zürich

Using Connected Vehicle Data to Evaluate National Trip Trends (TRBAM-24-04545) - A373

Jairaj Desai/Purdue University, Jijo Mathew/Purdue University, Justin Mahlberg/Purdue University, Howell Li/Purdue

University, Darcy Bullock/Purdue University

Analysis of Connected Vehicle Data to Quantify National Mobility Impacts of Winter Storms for Decision Makers and Media Reports (TRBAM-24-04421) - A372

Jairaj Desai/Purdue University, Jijo Mathew/Purdue University, Howell Li/Purdue University, Rahul Suryakant

Sakhare/Purdue University, Deborah Horton/Purdue University, Darcy Bullock/Purdue University

Stakeholders of a National Travel Survey and Implications for Survey Design (TRBAM-24-01675) - A382

Ellen Flaata/Norwegian University of Science and Technology (NTNU), Trude Tørset/Norwegian University of Science and Technology (NTNU)

Varying Influences of the Built Environment on Household Travel in the United States: An Update with 36

Diverse Regions and Machine Learning (TRBAM-24-00382) - A381

Guang Tian/University of New Orleans, Bob Danton/University of New Orleans, Reid Ewing/University of New Orleans, Bin

Li/University of New Orleans

3107



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Dwight David Eisenhower Transportation Fellowship Program Poster (Session 2)

Latoya Jones, Federal Highway Administration (FHWA), presiding

Sponsored By Section - Executive Management Issues

An opportunity to explore the topics undergraduate and graduate students are researching at institutions across the country. Dwight David Eisenhower Transportation Fellowship Program research presentations are selected by FHWA and are not reviewed by TRB standing committees.

Breakaway Luminaire Pole Research (P24-21264) - A100

Jacob Conway/University of Nebraska, Lincoln

Evaluation of North Carolina's Statewide Vision Zero Collaborative Support Model (P24-21265) - A101

Jen Farris/University of North Carolina, Chapel Hill

A Comparison of Time Series Methods for Post-COVID Transit Ridership Forecasting (P24-21266) - A102

Ashley Hightower/University of Tennessee, Knoxville

Charging Forward: Evaluating the Impact of State Electric Vehicle Tax Rebate Initiatives (P24-21267) - A103

Sarah Kear/University of North Carolina, Chapel Hill

Analyzing and Assessing Tools for Transportation Equity (P24-21268) - A110

Claire McGinnis/University of California, Davis

Examining the Travel Experience and Needs of Low-Wage Workers Facing Extreme Commutes in the Los Angeles Region (P24-21269) - A111

Alejandra Rios Gutierrez/University of California, Los Angeles

Disparities in Access to Teen Driver Education in Relation to Safety and Mobility (P24-21270) - A112

Jasmine Wu/University of Pennsylvania

Uncovering the Link Between Outdoor Multimodal Travel Behavior and Weather Prediction Models (P24-21273) - A113

Ashley Avila/University of Arizona

(continued)

Analyzing Heat Sink Geometries for Further Improvement of Thermoelectric Generator Module to Power Onboard Sensors in Railroad Operations (P24-21274) - A120
Danna Capitanachi Avila/University of Texas

Transit Ridership Prediction for Student-Centric Communities: A Case Study of Unitrans and the University of California, Davis (P24-21275) - A121
TAK CHUN MARCUS CHAN/University of California, Davis

Significant Improvements in the Machine Learning–Based Control of Connected and Autonomous Vehicles (P24-21276) - A122
Avikam Chauhan/University of California, Berkeley

Comparative Analysis of Geospatial Transportation Disadvantage Assessment Tools: N.C. Equity and Transportation Disadvantage Screening Tool Versus ETC Explorer (P24-21277) - A123
Abigail Cox/University of North Carolina, Chapel Hill

High-Resolution Reference Case for Assessing National Traffic-Related Emissions and Exposure Equity During the Transition to an Electric Vehicle Fleet (P24-21278) - A130
Meg Fay/University of Vermont

Comparison of Hydrogen Fuel Cell and Battery Electric Powertrains for Heavy-Duty Vocational Truck Applications (P24-21279) - A131
Jonathan Gruen/University of California, Davis

Enhancing Road Safety Through Augmented Reality: Collision Detection and Avoidance Systems for Road Users (P24-21280) - A132
Gracie Gumm/University of Texas, Austin

Ridesharing Spatio-Temporal Demand Prediction: A Dynamic Graph-Based Deep Learning Approach (P24-21281) - A133
Mark Hernandez/University of Texas, Rio Grande Valley

Traffic Calming Elements for Entry Control Facility Threat Delay and Containment: M50 P2/P3 MMGS Research and Development (P24-21282) - A140
Weston Kelley/University of Nebraska, Lincoln

Communicate Transportation Information Effectively with Maps (P24-21283) - A141
Carolyn Klamm/University of North Carolina, Chapel Hill

Crash Safety Analysis During Hurricane Evacuations (P24-21284) - A142
Amelia Lawson/Embry Riddle Aeronautical University

Timber Bridge Railings (P24-21285) - A143
Aaron Lechtenberger/University of Nebraska, Lincoln

Sun Power Eyes on the Road: A Sustainable Solar Power Vehicle Detection and Analysis System for Enhanced Traffic Management (P24-21286) - A150
Ruben Leoncio Caban/University of Puerto Rico, Mayaguez

Environmental Impacts of Electric Vehicles (P24-21287) - A151
Kossivi Maglo

Ultra-High-Performance Concrete Creep and the Role of Fibers (P24-21289) - A152
Hunter Meier/Kansas State University

Pedestrian Foot Traffic Analysis for Investigating Coastal Erosion Along Beaches (P24-21288) - A153
Mason Negron/University of Hawai'i, Manoa

The Effect of Relocation and the Built Environment on Household Travel (P24-21290) - A162
Clare Nelson/University of Vermont

Machine Learning Technique for Damage Detection of Rail-Bridge Systems Subjected to Moving Train Loads (P24-21291) - A163
Md Masnun Rahman/University of Texas, Rio Grande Valley

CAN-Based Naturalistic Driving Data Collection at Scale (P24-21292) - A172
William Richardson/Vanderbilt University

Identifying Critical Locations for Traffic Monitoring Devices During Hurricane Evacuations (P24-21293) - A173
Jake Robbennolt/University of Texas, Austin

Using Statistical Modeling to Predict Potential Roadway Crashes During Major Federal and California State Holidays in Comparison to Non-Holiday Days (P24-21294) - A182
Kirill Rogovoy/California State Polytechnic University, Pomona

Exploring the Feasibility and Potential of Large-Scale Triboelectric Nanogenerators for Sustainable Energy Harvesting in Transportation Industry Applications (P24-21295) - A183
Shadman Sakib/University of Texas, Rio Grande Valley

(continued)

Artificial Intelligence and Machine Learning Model for Distress Detection of Pavement Surfaces in Coastal Regions (P24-21296) - A192

Carlos Sanchez/Texas State University

Developing a Novel Testing Configuration for the Assessment of Fatigue and Fracture Resistance in Asphalt Mixtures (P24-21297) - A193

Arthur Sickels/University of Hawaii

Understanding the Potential Socioeconomic and Environmental Impacts of Proposed Interstate 14 on Selma and Dallas County, Alabama (P24-21298) - A200

Jack Spalding/University of Alabama

Design, Placement, Field, and Laboratory Evaluation of Rejuvenated Cold Recycled Asphalt Pavement Mixtures (P24-21299) - A201

Elizabeth Turochy/Auburn University

Testing the Feasibility of Computational Design for Entry-Level Highway Designers (P24-21300) - A202

Daniel Uyematsu/California State Polytechnic University, Pomona

Deep Learning to Detect Road Distress from Unmanned Aerial System Imagery (P24-21301) - A203

Ziliang Wang/California State Polytechnic University, Pomona

Evaluating Equitable Transit-Oriented Development (ETOD): Assessing the E of ETOD (P24-21302) - A210

Amy Grace Watkins

A Literature Review and Survey Data Analysis of Women's Travel on Public Transit (P24-21303) - A211

Grace Whitehouse/University of Tennessee, Knoxville

Modeling Traffic Demand Surges During Emergency Evacuations (P24-21304) - A212

Jacob Wilhelm/Embry Riddle Aeronautical University

Creatively Transforming Transit: Understanding Transportation Artist-in-Residence Programs (P24-21305) - A213

Lilith Winkler-Schor/University of California, Los Angeles

Strategic Safety Enhancements at Railroad-Highway Crossings: Insights and Implications (P24-21380) - A220

Jeannine Mbabazi/Tennessee State University

Unraveling the Impact and Risks of Transporting HAZMAT (P24-21381) - A221

Jose Portillo/Tennessee State University

Examining Best Practices for the Implementation of Road Pricing Schemes in the State of Tennessee (P24-21382) - A222

Jeremy Humphrey/Tennessee State University

3108



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

TRB Minority Student Fellows

Karen Febey, Transportation Research Board, presiding

Sponsored By Section - Executive Management Issues, Standing Committee on Aggregates, Standing Committee on Stabilization of Geomaterials and Recycled Materials, Standing Committee on Information Systems and Technology, Standing Committee on Highway/Rail Grade Crossings, Standing Committee on Advanced Concrete Materials and Characterization, Standing Committee on Traffic Law Enforcement, Standing Committee on Structures Maintenance, Standing Committee on Bicycle Transportation, Standing Committee on Traffic Control Devices, Standing Committee on Human Factors of Infrastructure Design and Operations, Standing Committee on Freeway Operations, Standing Committee on Pedestrians, Standing Committee on Managed Lanes, Standing Committee on Air Quality and Greenhouse Gas Mitigation, Standing Committee on Rural, Intercity Bus, and Specialized Transportation, Young Members Coordinating Council

This session showcases the student scholars selected for the TRB Minority Student Fellows Program—a program that supports students from Minority-Serving Institutions to attend the Annual Meeting and present their research.

Unpacking the Determinants of Crash Frequencies at Railroad Highway Crossings in Tennessee (TRBAM-24-00444) - A280

Zaria Bullard/Tennessee State University, Deo Chimba/Tennessee State University, Elise Russ/Tennessee State University, Al Amin/Tennessee State University, Emmanuel Samson/Tennessee State University, Kamrul Hasan/Tennessee State University, Shala Blue/Tennessee State University

(continued)

An Evaluation of Red Light Running Camera and Vision Zero Implementation in the United States (TRBAM-24-00560) - A230

Cipriano De Luna Gutierrez/The University of Arizona, Alyssa Ryan/The University of Arizona, Saquib Mohammed Haroon/The University of Arizona

Pedestrian Safety and Vehicle Design: Are SUVs and Pickup Trucks to Blame? (TRBAM-24-05713) - A240

Olivia Tafoya/University of New Mexico, Nicholas Ferenchak/University of New Mexico

The Unintended Consequences of Electric Vehicles: A Review of Literature (TRBAM-24-04465) - A241

Darius Dale/University of Maryland, Eastern Shore

Analyzing Emissions with Heavy Duty Vehicle Platooning with Route Deviations: A Study with I-710 Freeway (TRBAM-24-00312) - A242

Robert Valencia/California State University, Long Beach, Shailesh Chandra/California State University, Long Beach

Cyclist-Involved Crashes and Level of Traffic Stress: Evidence from Arizona (TRBAM-24-05635) - A243

Ty Holliday/Northern Arizona University, Brendan Russo/Northern Arizona University, Steven Gehrke/Northern Arizona University

Optimizing Bike Infrastructure for Sustainable Urban Mobility: A Joint Mode and Route Choice Equilibrium Approach (TRBAM-24-06192) - A262

Victoria Lanier/North Carolina A&T State University, Venkatesh Pandey/North Carolina A&T State University, MD Sami Hasnine/North Carolina A&T State University

Evaluating Driver's Behavior While Passing Bicyclist: An Integrated Simulator Approach (TRBAM-24-04793) - A291

Parisa Masoumi/Mercer University, Anam Ardeshiri/Mercer University, Eazaz Sadeghvaziri/Mercer University, Mansoureh Jeihani/Mercer University, Alaina Payne/Mercer University

Revisiting Rural Accessibility and Transportation Options (TRBAM-24-04565) - A263

Dorlee Vargas/Texas Southern University, Gwendolyn Goodwin/Texas Southern University, Valencia Stewart/Texas Southern University, Luducano Luis/Texas Southern University, Alexander Edwards/Texas Southern University

Review of Best Practices in Carbon Sequestration for Concrete (TRBAM-24-04443) - A272

Brian Castaneda/No Organization, Brianna Alcorn/No Organization, Mehran Mazari/No Organization

Safety Evaluation of Flashing Yellow Arrows at Signalized Intersections in the City of Rancho Cucamonga (TRBAM-24-05886) - A273

Santiago Martinez Contreras/California State Polytechnic University, Pomona, Cong Chen/California State Polytechnic University, Pomona, Yongping Zhang/California State Polytechnic University, Pomona

Evaluating the Potential for Micromobility in South Florida Through a State Preference Survey (TRBAM-24-01041) - A282

Daniel Frolich/Florida International University, Md Al Adib Sarker/Florida International University, Xia Jin/Florida International University

The Impact of Climate-Induced Changes on Highway Bridge Reliability: A Case Study in the Northeast United States (TRBAM-24-04068) - A283

Ibrahima Fall/City College of New York, Naresh Devineni/City College of New York, Tony Zheng/City College of New York

Has the Increase of Vehicle Automation Affected Truck Lane Restriction? (TRBAM-24-00818) - A290

DEYANA THOMAS/Florida A&M University, Doreen Regalado/Florida A&M University, Mohamed Khalafalla/Florida A&M University

The Development of High-Quality Uncrewed Aerial System Imagery to Facilitate Transportation Planning on the North Carolina Central University Campus (TRBAM-24-01048) - A292

Barron Allison/North Carolina Central University

Temperature Analysis for Remote Wireless Sensor Networks Sustainability: Challenges and Proposed Solutions (TRBAM-24-04852) - A250

Christian Torres-Ortiz/University of New Mexico, Marielly Rodriguez/University of New Mexico, Ali Mohammadkhorasani/University of New Mexico, Kaveh Malek/University of New Mexico, Ali Ozdagli/University of New Mexico, Fernando Moreu/University of New Mexico

Monitoring of Wireless Internet Devices in Field Research Using Hybrid Energy Automated Robots (TRBAM-24-05345) - A251

Marielly Rodriguez/University of New Mexico, Albuquerque, Christian Torres-Ortiz/University of New Mexico, Albuquerque, Ali Mohammadkhorasani/University of New Mexico, Albuquerque, Kaveh Malek/University of New Mexico, Albuquerque, Fernando Moreu/University of New Mexico, Albuquerque

Characterization of Coarse Aggregate Properties for Asphalt Concrete with Alternative Mest Methods (TRBAM-24-04313) - A293

Leandro Addarich Acosta/Recinto Universitario de Mayaguez Universidad de Puerto Rico

(continued)

Evaluation of Initial Consumption of Stabilizer Test for Full Depth Reclamation with Portland Cement (TRBAM-24-04318) - A252

Joyce Alicea-Hernandez/University of Puerto Rico, Mayaguez

Roadway Incident Clearance Time Analysis Using Multivariate Cox Regression Model (TRBAM-24-01271) - A281

Elise Russ/Tennessee State University, Bryson Mgani/Tennessee State University, Deo Chimba/Tennessee State University

Mounting and Control of Autonomous Vehicles (TRBAM-24-02411) - A253

Byron Hall/No Organization, Daniel Acree/No Organization, Younho Seong/No Organization, Sun Yi/No Organization

3109



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Workforce Development and Organizational Excellence

Victoria Beale, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Workforce Development and Organizational Excellence, International Coordinating Council, Rural Transportation Issues Coordinating Council, Subcommittee on Organizational Management, Standing Committee on Research Innovation Implementation Management, Standing Committee on Information and Knowledge Management

During this poster session, attendees will learn from new practitioner innovations and current research in Workforce Development and Organizational Excellence. The 2024 Annual Meeting theme, Rejuvenation Out of Disruption: Envisioning a Transportation System for a Dynamic Future, will be a primary focus of this poster session.

Gender Confidence Gap in Construction (P24-20007) - A312

Callie Thomason French/University of New Mexico

Improving Oral Communication Skills of a Future Workforce by Way of Undergraduate Practitioner Panel

Presentations and Video Assignments (TRBAM-24-00702) - A313

Jessica Lewis/Mississippi State University, Isaac Howard/Mississippi State University, Ashley Carey/Mississippi State University

Learning About Traffic Engineering Through Rapid Prototyping: A Case Study of Car-Following Microscopic Simulation (TRBAM-24-03233) - A322

Sicong Zhu/Beijing Jiaotong University, Yufei Yuan/Beijing Jiaotong University, Zhenliang Ma/Beijing Jiaotong University, Qing Lan/Beijing Jiaotong University

Workforce Development Projects with Federal Highway Administration CAve-In-A-Box and CAve-Lite: Lessons Learned (TRBAM-24-04156) - A323

Sai Bonthu/University of Cincinnati, Vaishak Gopalakrishna/University of Cincinnati, William Martin/University of Cincinnati, Animesh Balse/University of Cincinnati, Mary Welsh Schlueter/University of Cincinnati, Rich Granger/University of Cincinnati, Victor Hunt/University of Cincinnati, Arthur Helmicki/University of Cincinnati

Developing a Diverse and Environmentally Conscious Transportation Workforce via High-Impact, Hands-On Pedagogy (TRBAM-24-05627) - A303

Oludare Owolabi/Morgan State University, Pelumi Abiodun/Morgan State University, Adebayo Olude/Morgan State University, Olushola Emiola-Owolabi/Morgan State University, Temileye Ibirinde/Morgan State University, Hannah Abedoh/Morgan State University, Alzain Alzain/Morgan State University, Neda Shourabi/Morgan State University, Gbeke Oguntimein/Morgan State University, James Hunter/Morgan State University, Sotonye Ikiriko/Morgan State University, Nkiruka Nwachukwu/Morgan State University, Celeste Chavis/Morgan State University, Samira Ahangari/Morgan State University, Petronella James-Okeke/Morgan State University, Eazaz Sadeghvaziri/Morgan State University, Jumoke Ladeji-Osias/Morgan State University, Hye Lee/Morgan State University

Investigating Leadership Styles from the Perspective of Employees and Workers: A Case Study in the Road Construction Sector of Iran's Construction Industry (TRBAM-24-02268) - A330

Mohammad Saied Dehghani/K. N. Toosi University of Technology, Amirhosein Rahmani/K. N. Toosi University of Technology, Vahid Sadeghi-Firoozabadi/K. N. Toosi University of Technology

Simulation-Based Framework for Workforce Prediction and Its Comparison with Statistical Model (TRBAM-24-01386) - A331

Jingran Sun/Center for Transportation Research, Michael Murphy/Center for Transportation Research, Darren Hazlett/Center for Transportation Research

Is Induced Travel Missing from Transportation Engineering Textbooks? (TRBAM-24-04276) - A332

Kelcie Ralph/Rutgers University, Ellen White/Rutgers University

(continued)

Identification and Preservation of Core Competencies and Risk Management (P24-20519) - A333

Bryan Gibson/Kentucky Transportation Cabinet, Jeff Jasper/Kentucky Transportation Cabinet

Innovating Wildlife Underpasses: A Success Story of Implementing Data to Improve the State Budget (P24-20520) - A342

Gary Vansuch/Colorado Department of Transportation

Future Development of Connected and Autonomous Vehicles Workforce: A Review of Existing Training Programs and Career Requirements (P24-20523) - A343

Cheng Zhang/Texas A&M University

Analyzing Crash Safety and Equity in Maryland Using GIS: A Spatial Perspective (P24-20533) - A300

Lila Turbiville/Mercer University, Eazaz Sadeghvaziri/Mercer University, Ramina Javid/Morgan State University

Bikeshare Accessibility and Disadvantaged Communities (P24-20540) - A301

Maxwell Wood/Mercer University, Eazaz Sadeghvaziri/Mercer University, Ramina Javid/Morgan State University

Bikeshare Equity: Washington, DC, Capital Bikeshare (P24-20545) - A302

Nidia Constantin/Mercer University, Eazaz Sadeghvaziri/Mercer University, Ramina Javid/Morgan State University

Toward Greater Inclusion of People with Disabilities and Older Adults in the Transit Workforce (P24-20548) - A352

Shayna Gleason/International Transportation Learning Center

Assessing the Impact of Micromobility Programs on Climate Change Mitigation in the United States: A Systematic Review (P24-20549) - A320

Hananeh Omid/University of Oklahoma, Norman

The Transport Workforce: From Disruption to Stabilized Enhancement and Retention via Innovative Mentoring (P24-20551) - A353

Ronald Boenau/Self-employed

Investigating the Impact of Different Land Use on Public Transportation: Portland Case Study (P24-20552) - A310

Hananeh Omid/University of Oklahoma, Norman

Investigating the Impact of Different Land Use on Public Transportation: Portland Case Study (P24-20553) - A321

Hananeh Omid/University of Oklahoma, Norman

The Impact of Neighborhood's Racial and Socioeconomic Status on Accessibility to Hospitals and Bus Stops for People with Disabilities in the District of Columbia (P24-20554) - A311

Hananeh Omid/University of Oklahoma, Norman

3110



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Aging Advancements

Panos Apostolidis, Technische Universiteit, Delft, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

Characterization of Long-Term Aged Asphalt Binder with Fourier Transform Infrared Spectroscopy and Multivariate Analysis Methods (TRBAM-24-00171) - B624

Kristina Primerano/Technische Universität Wien, Johannes Mirwald/Technische Universität Wien, Johann Lohninger/Technische Universität Wien, Bernhard Hofko/Technische Universität Wien

Deconvoluting the Mechanisms of Thermal Degradation and Oxidation During the Aging Simulation of Elastomeric Modified Asphalt Binders (TRBAM-24-00420) - B634

Dheeraj Adwani/University of Texas, Austin, Anand Sreeram/University of Texas, Austin, Amit Bhasin/University of Texas, Austin

Impact of Thermally Conductive Fillers on Mastic Rheology, Thermal Properties, and Aging (TRBAM-24-00965) - B625

Moinul Hossain/Aston University, Mujib Rahman/Aston University, Denis Chamberlain/Aston University, Tala Kasim/Aston University

Characterization of Field Aging Behavior of Porous Asphalt Pavement Based on Chemical and Rheological Parameters (TRBAM-24-01527) - B632

Jiaqi Hu/Southeast University, Jiwang Jiang/Southeast University, Jitong Ding/Southeast University, Yajin Han/Southeast University, Jiaqi Huang/Southeast University, Fujian Ni/Southeast University

Study on the Self-Regeneration Strategy of Aged Asphalt Based on Magnetic Response Controlled Release Microcapsules (TRBAM-24-02577) - B631

Yufeng Tian/Tongji University, Tong Lu/Tongji University, Daquan Sun/Tongji University, Lei Xu/Tongji University, Hangtian Ni/Tongji University, Mingjun Hu/Tongji University, Xinyu Zhu/Tongji University

(continued)

A Novel Atomic Force Microscopy–Based Approach to Identify the Aging Degree of Asphalt in Reclaimed Asphalt Pavement (TRBAM-24-02678) - B628

Liping Liu/Tongji University, Mingchen Li/Tongji University, Ming Wang/Tongji University, Chengwei Xing/Tongji University

Modification of Arrhenius Aging Equation Based on Activate Energy Obtained from Various Asphalt Binders (TRBAM-24-03090) - B626

Wentao He/Tongji University, Zifeng Zhao/Tongji University, Zhitao Zhang/Tongji University, Zhenglong Cao/Tongji University, Feipeng Xiao/Tongji University

Quantifying Self-Healing Capability, Thermodynamic, and Chemical Changes of Nanomodified Asphalt Binders Under Short-Term Oxidation Condition (TRBAM-24-04084) - B629

Debzani Mitra/Rowan University, Mikayla Jones/Rowan University, Yusuf Mehta/Rowan University, Ayman Ali/Rowan University, Ben Cox/Rowan University

Characterization of Asphalt-Filler Mastics with Industrial By-Products as Fillers Under the Coupled Effect of Aging and Moisture (TRBAM-24-04243) - B623

Saswat Dash/Indian Institute of Technology, Guwahati, Rajan Choudhary/Indian Institute of Technology, Guwahati, Ankush Kumar/Indian Institute of Technology, Guwahati, Ashish Sharma/Indian Institute of Technology, Guwahati

Investigation on Rheological Properties and Aging Mechanism of Asphalt Under Multiple Environmental Conditions (TRBAM-24-05118) - B627

Yang Sun/Tongji University, Hui Li/Tongji University, Bing Yang/Tongji University, Yuzhao Han/Tongji University, Shuo Wang/Tongji University, Jiaxing Ren/Tongji University, Zipeng Wang/Tongji University

Rheological Characterisation of Recycled Bitumen Blends Containing Reclaimed Asphalt Pavement Binder of Different Ages (TRBAM-24-05993) - B633

L Abinaya/IIT Madras: Indian Institute of Technology Madras, M. R. Nivitha/IIT Madras: Indian Institute of Technology Madras, Murali Krishnan/IIT Madras: Indian Institute of Technology Madras

Simulation of Long-Term Aging of Asphalt Binders for Indian Conditions Using Draft Oven and Pressure Aging Vessel (TRBAM-24-01785) - B630

Priti Rai/Indian Institute of Technology, Roorkee, PRAVEEN KUMAR/Indian Institute of Technology, Roorkee, Nikhil Saboo/Indian Institute of Technology, Roorkee

Evaluation of the Rheological Properties and Molecular Distributions of Asphalt Binder Under Multiple Aging and Rejuvenation Cycles (TRBAM-24-02859) - B622

Rui Wang/University of Wisconsin, Madison, Runhua Zhang/University of Wisconsin, Madison, Hussain Bahia/University of Wisconsin, Madison

Examining the Efficacy of Tailored Antioxidants to Mitigate Asphalt Binder Oxidation: Insights from a Worldwide Interlaboratory Investigation (TRBAM-24-03327) - B635

Dheeraj Adwani/University of Nottingham, Georgios Pipintakos/University of Nottingham, Johannes Mirwald/University of Nottingham, Yudi Wang/University of Nottingham, Ramez Hajj/University of Nottingham, Xiong Xu/University of Nottingham, Meng Guo/University of Nottingham, Meichen Liang/University of Nottingham, Ruxin Jing/University of Nottingham, Aikaterini Varveri/University of Nottingham, Yuan Zhang/University of Nottingham, Ke Pe/University of Nottingham, Zhen Leng/University of Nottingham, Danning Li/University of Nottingham, Silvia Caro/University of Nottingham, Emmanuel Chailleux/University of Nottingham, Justine Cantot/University of Nottingham, Sandra Weigel/University of Nottingham, Judita Škuldecká/University of Nottingham, Giulia Tarsi/University of Nottingham, Haopeng Wang/University of Nottingham, Yongping Hu/University of Nottingham, Gordon Airey/University of Nottingham, Anand Sreeram/University of Nottingham, Amit Bhasin/University of Nottingham

3111



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Failure, Rheology, and Physical Characterization Advancements

Emad Kassem, University of Idaho, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

Assessing High-Temperature Performance of Asphalt Filler Mastic System Treated with Micro-Nano Filler Combinations (TRBAM-24-00602) - B648

Aditya Das/Indian Institute of Technology, Bombay, Dharamveer Singh/Indian Institute of Technology, Bombay

Evaluation of Fatigue Failure Definitions in Linear Amplitude and Time Sweep Tests of Asphalt Binder at Multiple Aging Levels (TRBAM-24-00766) - B641

Kai Yang/Hebei University of Technology, Rui Li/Hebei University of Technology, Cassie Castorena/Hebei University of Technology, Hongjun Cui/Hebei University of Technology

(continued)

Fatigue and Healing Characterization of Asphalt Binders Based on the LAS and LASH Tests (TRBAM-24-01589) - B649

Jiacai Sun/Tongji University, Yu Yan/Tongji University

Investigating the Influence of Hard Segment Content on Rheological Behavior of Thermosetting PU Modified Asphalt (TRBAM-24-02015) - B647

Heyang Ding/Tongji University, Hongren Gong/Tongji University, Lin Cong/Tongji University, Yudong Hou/Tongji University

Identification of Asphalt Binder Tests for Detecting Variations in Binder Cracking Performance (TRBAM-24-02050) - B636

Hui Chen/Texas A&M Transportation Institute, Dheeraj Adwani/Texas A&M Transportation Institute, Amit Bhasin/Texas A&M Transportation Institute, Darren Hazlett/Texas A&M Transportation Institute, Fujie Zhou/Texas A&M Transportation Institute

Rheological Properties of Aged Bitumen and Correlation Analysis (TRBAM-24-02400) - B644

Lili Ma/Delft University of Technology, Sandra Erkens/Delft University of Technology, Aikaterini Varveri/Delft University of Technology

A Comparative Evaluation of LAS Data Analysis Techniques and Failure Criteria for High Polymer Modified Binders (TRBAM-24-02454) - B642

Mohamad Yaman Taha Fares/Michigan State University, Michele Lanotte/Michigan State University, Stefano Marini/Michigan State University

Field Aging and Binder Fatigue Performance of Intermediate Asphalt Concrete Layers Containing Reclaimed Asphalt Pavement (TRBAM-24-02474) - B643

Mohammad Rahman/University of California, Davis, John Harvey/University of California, Davis, Liya Jiao/University of California, Davis, Dr. Raghubar Shrestha/University of California, Davis, David Jones/University of California, Davis

Correlation Analysis Between Linear Viscoelasticity and Saturate, Aromatic, Resin and Asphaltene Compositions of Asphalt (TRBAM-24-03679) - B637

Xin Xiao/Tongji University, Jiayu Wang/Tongji University, Tao Wang/Tongji University, Qingyue Zhou/Tongji University, Feipeng Xiao/Tongji University

Extraction Solvents Effects on Asphalt Binder Properties (TRBAM-24-04462) - B638

Zia Rahaman/Indiana Department of Transportation, Jusang Lee/Indiana Department of Transportation, Ayesha Shah/Indiana Department of Transportation, John Haddock/Indiana Department of Transportation

Tribological Evaluation of Asphalt Binders with Chemical and Foamed Warm Mix Asphalt (TRBAM-24-05370) - B646

Rajiv Kumar/CSIR-Central Road Research Institute New Delhi, Ambika Behl/CSIR-Central Road Research Institute New Delhi

Prediction of Asphalt Binder Elastic Recovery Using Tree-Based Ensemble Bagging and Boosting Models (TRBAM-24-05842) - B645

Babak Asadi/University of Illinois, Urbana-Champaign, Ramez Hajj/University of Illinois, Urbana-Champaign

Implementation of iCCL, a Low-Temperature Binder Test Equivalent to BBR (TRBAM-24-05922) - B639

Alaeddin Mohseni/Pavement Systems, LLC, Haleh Azari/Pavement Systems, LLC

Understanding the Impact of Aging and Rejuvenation on Asphalt Binder Fatigue Characteristics: An LAS-Test Based Performance Indices Analysis (TRBAM-24-02441) - B640

Saqib Gulzar/North Carolina State University, Lei Xue/North Carolina State University, Jaime Preciado/North Carolina State University, Andrew Fried/North Carolina State University, Cassie Castorena/North Carolina State University, Shane Underwood/North Carolina State University, Jhony Habbouche/North Carolina State University, Ilker Boz/North Carolina State University

3112



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Polymers, Emulsions, and Rubber

Bernhard Hofko, Technische Universität Wien, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

Thermal Oxidative Aging Effect on Chemo-Rheological and Morphology Evolution of Crumb Rubber Modified Asphalt Binders with Wax-Based Warm Mix Additives (TRBAM-24-00276) - B650

Lei Xu/Tongji University, Mingjun Hu/Tongji University, Hangtian Ni/Tongji University, Daquan Sun/Tongji University, Yufeng Tian/Tongji University

(continued)

Investigation of the Rheological Properties of Devulcanized Rubber-Modified Asphalt with Different Rubber Devulcanization Degrees and Rubber Contents (TRBAM-24-00592) - B659

Yixin Zhou/Southeast University, Gang Xu/Southeast University, Houzhi Wang/Southeast University, Yulou Fan/Southeast University, You Wu/Southeast University, Jun Yang/Southeast University

Impact of Polyvinyl Alcohol Fiber and Crumb Rubber on Viscoelastic Characteristics of Asphalt Matrix (TRBAM-24-00667) - B667

Muhammad Sadiq/University of Louisiana, Lafayette, Mohammad Khattak/University of Louisiana, Lafayette

Nanoscale Evolution of Rubber-Oil Modified Asphalt Binder After Thermal and Ultraviolet Aging (TRBAM-24-01692) - B654

Lei Lyu/Chang'an University, Jianzhong Pei/Chang'an University, Nancy Burnham/Chang'an University, Elham Fini/Chang'an University, Lily Poulikakos/Chang'an University

On the Influence of Pressure Aging Vessel Aging Temperature on Crumb Rubber-Modified Binders and the Potential Need for a Modified Long-Term Aging Procedure (TRBAM-24-01916) - B672

Ahmad Albdour/Michigan State University, Michele Lanotte/Michigan State University

Effects of Oil-Absorbing Organogels Polystyrene-Stearyl Methacrylate with Various Properties on the Performance of Asphalt Binder (TRBAM-24-01917) - B655

Meizhao Han/Harbin Institute of Technology, Yiqiu Tan/Harbin Institute of Technology, Zhen Leng/Harbin Institute of Technology

Performance Decay of SBS-Modified Bitumen in Continuous Aging and Rejuvenation Cycles (TRBAM-24-01929) - B662

Ke Shi/Chang'an University, Feng Ma/Chang'an University

A Coarse-Grained Model for Asphalt Binder and Polymer Mixtures Based on the MARTINI Forcefield (TRBAM-24-02743) - B652

Andrew Peters/Louisiana Tech University, Nazimuddin Wasiuddin/Louisiana Tech University

Bonding, Rheological, and Chemical Evaluations of Self-Crosslinking Asphalt Emulsion with Waterborne Polymers (TRBAM-24-03751) - B657

Ling Xu/Tongji University, Mohsen Alae/Tongji University, Qian Xiang/Tongji University, Xin Xiao/Tongji University, Changshan Jiang/Tongji University, Feipeng Xiao/Tongji University

Effects of Functionalized Polyethylene on the Rheological Properties of Recycled Polymer Modified Asphalt Binders (TRBAM-24-04456) - B668

Gustavo Pinheiro/University of Sao Paulo, Jessica Dipold/University of Sao Paulo, Anderson Zanardi/University of Sao Paulo, Kamilla Vasconcelos/University of Sao Paulo, Niklaus Wetter/University of Sao Paulo

Compatibilization Strategy and Mechanism for Co-Stabilizing Commingled Plastics and Pyrolyzed Rubber in Asphalt (TRBAM-24-04635) - B665

Yuetan Ma/University of Tennessee, Knoxville, Zoriana Demchuk/University of Tennessee, Knoxville, Guantao Cheng/University of Tennessee, Knoxville, Reese Sorgenfrei/University of Tennessee, Knoxville, Jingtao Zhong/University of Tennessee, Knoxville, Hongyu Zhou/University of Tennessee, Knoxville, Baoshan Huang/University of Tennessee, Knoxville

Investigation on Rheological and Chemical Properties of Asphalt Modified with Different Types of Recycled Plastics and Crumb Rubber (TRBAM-24-05098) - B658

Yuzhao Han/Tongji University, Hui Li/Tongji University, Liyang Wang/Tongji University, Yang Sun/Tongji University, Zhijie Lin/Tongji University, Ming Jia/Tongji University, Jie Yang/Tongji University, Lei Wang/Tongji University

Chemical Recycling of Waste Polypropylene in Bitumen by Polyol Grafting Through Reactive Extrusion (TRBAM-24-05195) - B656

Jingting LAN/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Ruiqi Chen/Hong Kong Polytechnic University, Xiong Xu/Hong Kong Polytechnic University

Materials Composition and Road Performance of Polyurethane-Modified Asphalt Synthesized In Situ by the One-Shot Process (TRBAM-24-05230) - B663

Tianhong Yang/Chongqing Jiaotong University, Zhaoyi He/Chongqing Jiaotong University, Jianwei Fu/Chongqing Jiaotong University, Gang Huang/Chongqing Jiaotong University, Haoyu Ma/Chongqing Jiaotong University

Establishing Particle Size Recommendations for Cationic Asphalt Emulsions (TRBAM-24-05390) - B651

Tanner Turben/University of Arkansas, Fayetteville, Pedro Diaz-Romero/University of Arkansas, Fayetteville, Andrew Braham/University of Arkansas, Fayetteville

A Thermodynamic Approach to Investigate Compatibility of High-Density Polyethylene, Low-Density Polyethylene, and Polypropylene Modified Asphalt Binders Using a Novel Differential Scanning Calorimeter Method (TRBAM-24-05903) - B653

Shahjalal Selim/Louisiana Tech University, Md Reazul Islam/Louisiana Tech University, Nazimuddin Wasiuddin/Louisiana Tech University, Andrew Peters/Louisiana Tech University

(continued)

Comparisons of the Properties and Sustainability of Asphalt Binders Modified with Reactive Thermosetting Liquid Modifiers (TRBAM-24-05918) - B669

Ruiming Li/Hong Kong Polytechnic University, Xiaoxu Zhu/Hong Kong Polytechnic University, Wei Sheng/Hong Kong Polytechnic University, Xingyu Chen/Hong Kong Polytechnic University, Yuhong Wang/Hong Kong Polytechnic University

Influence of Asphalt Emulsion Formulation Parameters on Fluidity of Cement Asphalt Mortar for High-Speed Rail Tracks (TRBAM-24-06236) - B664

Rahul Reddy Banapuram/Indian Institute of Technology, Kharagpur, Thavamani Andiyappan/Indian Institute of Technology, Kharagpur, Kranthi Kuna/Indian Institute of Technology, Kharagpur, Amaranatha Reddy Muppireddy/Indian Institute of Technology, Kharagpur, Arghya Deb/Indian Institute of Technology, Kharagpur

3113



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Innovations in Asphalt Mixtures: Exploring the Role of Recycled Materials and Other Additives

Heena Dhasmana, Louisiana State University, presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design

Formulation Optimization and Performance Evaluation of Zeolite-Based, Temperature-Mixed, Flame Retardant Modified Asphalt (TRBAM-24-00993) - B697

Yangwei Tan/Nanjing University of Aeronautics and Astronautics, Jianguang Xie/Nanjing University of Aeronautics and Astronautics, Jinwei Xu/Nanjing University of Aeronautics and Astronautics

Balanced Mix Design for Asphalt Mixtures with High Reclaimed Asphalt Pavement and Rejuvenators (TRBAM-24-01182) - B677

Hussain Al Hatailah/University of Idaho, Emad Kassem/University of Idaho

Performance Characterization and Strength Development Investigation of Novel Warm Mix Polyurethane Prepolymer Modified Porous Asphalt (TRBAM-24-01427) - B682

Gaoyang Li/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Guoyang Lu/Hong Kong Polytechnic University, Ruiqi Chen/Hong Kong Polytechnic University, Xi Jiang/Hong Kong Polytechnic University

Assessing Recycled Binder Availability, Activity, and Contribution at Different Temperatures (TRBAM-24-01428) - B680

Rafaella Costa/North Carolina State University, Cassie Castorena/North Carolina State University

Impact of Non-Recyclable Plastics on Asphalt Binders and Mixtures (TRBAM-24-01825) - B675

Yusra Alhadidi/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign, Uthman Mohamed Ali/University of Illinois, Urbana-Champaign, Javier García Mainieri/University of Illinois, Urbana-Champaign, Brajendra Sharma/University of Illinois, Urbana-Champaign

Laboratory Performance Characterization of Polyolefin/Aramid Fibers and Synthetic Aramid Fibers Reinforced Asphalt Mixtures (TRBAM-24-02182) - B689

Ali Raza Khan/Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan University, Wade Lein/Rowan University

Characterizing the Fatigue and Thermal Cracking Performance of Fiber-Reinforced Asphalt Mixtures Using Digital Image Correlation (TRBAM-24-02201) - B688

Ali Raza Khan/Rowan University, Kazi Zahir Uddin/Rowan University, Ayman Ali/Rowan University, Behrad Koohbor/Rowan University, Yusuf Mehta/Rowan University, Wade Lein/Rowan University

Effect of High Polymer, Crumb Rubber, and Epoxy-Modified Asphalt Binders on Laboratory Performance of Open Graded Friction Course Mixtures (TRBAM-24-02210) - B693

Anas Abualia/Louisiana Department of Transportation and Development, Jun Liu/Louisiana Department of Transportation and Development, Louay Mohammad/Louisiana Department of Transportation and Development, Samuel Cooper, III/Louisiana Department of Transportation and Development, Samuel Cooper, Jr./Louisiana Department of Transportation and Development

Toward the Application of Recycled Asphalt Shingles in an Asphalt Mix as a Compaction Aid (TRBAM-24-02393) - B684

Maziar Mivehchi/University of California, Davis, Chi-Lin Chiang/University of California, Davis, Haifang Wen/University of California, Davis

Toward a Use of Waste Polyethylene in Asphalt Mixture as a Compaction Aid (TRBAM-24-02395) - B683

Chi-Lin Chiang/Washington State University, Maziar Mivehchi/Washington State University, Haifang Wen/Washington State University

(continued)

Performance Evaluation of Hybrid Hot Mix Asphalt Toward Balance Mix Design (TRBAM-24-02632) - B694

Muhammad Faizan Asghar/University of Louisiana, Lafayette, Sherbaz Khan/University of Louisiana, Lafayette, Mohammad Khattak/University of Louisiana, Lafayette

Optimal Foaming Parameters for Waste Tire Crumb Rubber Asphalt and Its Pavement Performance Evaluation (TRBAM-24-03017) - B698

Zhe Hu/Chang'an University, Mingliang Zhang/Chang'an University, Jiupeng Zhang/Chang'an University, Qinggang Wang/Chang'an University

Workability of Low-Density Polyethylene-Modified Asphalt Mixtures: A Statistical Analysis of Particle Kinematics (TRBAM-24-03715) - B673

Shuai Yu/Pennsylvania State University, University Park, Jubair Musazay/Pennsylvania State University, University Park, CHENG ZHANG/Pennsylvania State University, University Park, Pengsen Hu/Pennsylvania State University, University Park, Shihui Shen/Pennsylvania State University, University Park

Laboratory Evaluation of Plant-Produced Recycled Plastic Modified Asphalt Mixtures Using the Dry Process (TRBAM-24-03750) - B685

Maede Mottaghi/National Center for Asphalt Technology (NCAT), Chen Chen/National Center for Asphalt Technology (NCAT), Fan Yin/National Center for Asphalt Technology (NCAT), Randy West/National Center for Asphalt Technology (NCAT), Adam Taylor/National Center for Asphalt Technology (NCAT)

Mechanical Properties and Performance of High-Recycled Content Mixtures Designed Using Alternative Approaches (TRBAM-24-03818) - B681

Mayzan Isied/University of Texas, Tyler, Douglas Mocelin/University of Texas, Tyler, Jaime Preciado/University of Texas, Tyler, Pablo Vestena/University of Texas, Tyler, Shane Underwood/University of Texas, Tyler, Youngsoo Kim/University of Texas, Tyler, Cassie Castorena/University of Texas, Tyler

Evaluating the Impact of Variability of the Source of Polyethylene on the Design of Plastic Modified Asphalt Mixtures (TRBAM-24-03923) - B687

V.Sushanth Revelli/Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan University, Ben Cox/Rowan University, Wade Lein/Rowan University

Evaluation of Polypropylene Addition Methods to Enhance the Performance of High Reclaimed Asphalt Pavement Recycled Mixtures Modified by Soybean Oil as Recycling Agent (TRBAM-24-03946) - B696

Nitish Bastola/University of Nebraska, Lincoln, Braden Olson/University of Nebraska, Lincoln, Jamilla Teixeira/University of Nebraska, Lincoln, Hamzeh Haghshenas/University of Nebraska, Lincoln

Influence of Non-Melting Waste Plastics on Volumetric Properties and Performance of Asphalt Mixtures (TRBAM-24-03965) - B686

V.Sushanth Revelli/Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan University, Ben Cox/Rowan University, Sadie Casillas/Rowan University

Evaluation of Performance of Dry Blended Modified Asphalt Mixtures on Egyptian Mixes (TRBAM-24-04353) - B678

Mona Khafagy/Khalifa University of Science and Technology, Ahmed Faheem/Khalifa University of Science and Technology, Ahmed Abdalla/Khalifa University of Science and Technology, Nagui Riad/Khalifa University of Science and Technology

Self-Healing Characteristics of PVA Fiber-Reinforced Hot Mix Asphalt for Enhanced Pavement Durability (TRBAM-24-05109) - B695

Hassan Afridi/University of Louisiana, Lafayette, Mohammad Khattak/University of Louisiana, Lafayette

Toughening Epoxy Asphalt Mixtures for Recycling Reclaimed Asphalt Pavement Cracking Resistance Evaluation Using Acoustic Emission (TRBAM-24-05152) - B679

Hao Yu/No Organization, Yulou Fan/No Organization, Yixin Zhou/No Organization, Houzhi Wang/No Organization, Jun Yang/No Organization

Impact of Plastic-Graphene on Asphalt Mixture Performance Parameters (TRBAM-24-05462) - B674

Uthman Mohamed Ali/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign, Hasan Ozer/University of Illinois, Urbana-Champaign, Thomas Bennert/University of Illinois, Urbana-Champaign, Yusra Alhadidi/University of Illinois, Urbana-Champaign, Ashraf Alrajhi/University of Illinois, Urbana-Champaign, Samuel Castro/University of Illinois, Urbana-Champaign



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Impact of Aggregates, Fillers, and Mastics on Asphalt Mixture Performance and Design

James Wurst, Ingevity, presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design

Evaluating of Mix Ingredients and Properties on the Fracture Behavior of Asphalt Mixes with Semicircular Bending Test (TRBAM-24-00141) - B691

Mohammad Hoseinpour-Lonbar/University of Tehran, Mohammad Zia Alavi/University of Tehran, Massoud Palassi/University of Tehran

Porous Asphalt Performance in Cold Regions: A Case Study of Chicago, Illinois (TRBAM-24-00414) - B701

Renan Santos Maia/University of Illinois, Urbana-Champaign, Yujia Lu/University of Illinois, Urbana-Champaign, Ramez Hajji/University of Illinois, Urbana-Champaign

Development of the Criteria for Optimum Filler-Binder Ratio in an Asphalt Mix Based on Fatigue Performance (TRBAM-24-00212) - B692

Mohit Chaudhary/Indian Institute of Technology, Roorkee, Nikhil Saboo/Indian Institute of Technology, Roorkee, Ankit Gupta/Indian Institute of Technology, Roorkee

Improved Dominant Aggregate Size Range-Based Index for Hot Mix Asphalt Rutting Evaluation: Consideration of Interstitial Aggregates Component and High-Service Temperature Bitumen Properties (TRBAM-24-00981) - B690

Mohamad Yaman Taha Fares/Michigan State University, Stefano Marini/Michigan State University, Mohamed Suhoothi/Michigan State University, Ahmad Albdour/Michigan State University, Michele Lanotte/Michigan State University

Composition Design and Mixture Properties of Water-Retaining, Semi-Flexible Pavement Based on Alkali-Activated Slag System Incorporating Superabsorbent Polymers (TRBAM-24-03256) - B700

Meng Guo/Beijing University of Technology, Pengcheng Wei/Beijing University of Technology, Xiuli Du/Beijing University of Technology

Improving the Durability of 12.5 mm Open Graded Friction Course Using 9.5 mm Nominal Maximum Aggregate Size Gradation and High Polymer Modified Binder (TRBAM-24-03886) - B703

Trung Tran/National Center for Asphalt Technology (NCAT), Chen Chen/National Center for Asphalt Technology (NCAT), Nam Tran/National Center for Asphalt Technology (NCAT), Adam Taylor/National Center for Asphalt Technology (NCAT), Fan Yin/National Center for Asphalt Technology (NCAT), Donald Watson/National Center for Asphalt Technology (NCAT), James Musselman/National Center for Asphalt Technology (NCAT), Gregory Sholar/National Center for Asphalt Technology (NCAT), Howard Moseley/National Center for Asphalt Technology (NCAT)

Optimizing Stone-Mastic Asphalt Sustainability Through the Use of Inferior Quality Local Aggregates (TRBAM-24-04257) - B704

Javier García Mainieri/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

A Mechanistic-Based Machine Learning Approach for Correlating Asphalt Mixture Compaction with Aggregate Gradation (TRBAM-24-04360) - B702

Tianhao Yan/Turner-Fairbank Highway Research Center, FHWA, Yuxiang Wan/Turner-Fairbank Highway Research Center, FHWA, Mugurel Tuross/Turner-Fairbank Highway Research Center, FHWA, Qizhi He/Turner-Fairbank Highway Research Center, FHWA, Jia-Liang Le/Turner-Fairbank Highway Research Center, FHWA, Mihai Marasteanu/Turner-Fairbank Highway Research Center, FHWA



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Advancements in Cold Recycling: Techniques, Challenges, and Sustainable Solutions

Michael Vrtis, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design

Factors Affecting the Development of Cracking Resistance Gradient in Bitumen Emulsion-Based, Cold In-Place Recycling Mixtures Over Curing (TRBAM-24-01532) - B706

Zili Zhao/Southeast University, Jiwang Jiang/Southeast University, Fujian Ni/Southeast University, Jingling Wang/Southeast University, Lan Zhou/Southeast University

Effects of Water in Emulsified Mixture at the Time of Grouting on Mechanical Properties of Cold Mix Based Semi-Flexible Pavement Composite Material (TRBAM-24-01725) - B705

Xing Cai/Hong Kong Polytechnic University, Prabin Ashish/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Zhifei Tan/Hong Kong Polytechnic University, Hainian Wang/Hong Kong Polytechnic University

Evaluation of Cracking Potential of Emulsion Treated Base Layer Mixes Using Indirect Tension Test Parameters (TRBAM-24-02209) - B709

Jithin Kurian Andrews/Saintgits College of Engineering, Vishnu Radhakrishnan/Saintgits College of Engineering, Reebu Zachariah Koshy/Saintgits College of Engineering, C.S.R.K. Prasad/Saintgits College of Engineering

Design, Placement, Laboratory, and Field Evaluation of Rejuvenated Cold Recycled Asphalt Mixtures (TRBAM-24-04582) - B707

Elizabeth Turochy/Auburn University, Benjamin Bowers/Auburn University

The Influence of Aggregate Gradations on the Mechanical Response of Cold Central Plant Recycled Bituminous Mixtures (TRBAM-24-06150) - B708

Amarjeet Tiwari/IIT Madras: Indian Institute of Technology Madras, Arpan Ghosh/IIT Madras: Indian Institute of Technology Madras, Bhanoj Dokku/IIT Madras: Indian Institute of Technology Madras, Dheeraj Bonagiri/IIT Madras: Indian Institute of Technology Madras, Stephane Charnot/IIT Madras: Indian Institute of Technology Madras, Murali Krishnan/IIT Madras: Indian Institute of Technology Madras

3117



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Concrete Pavement Technology and Performance

Tamim Khan, FERROVIAL SERVICES, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Concrete Pavements, Standing Committee on Concrete Pavement Construction and Rehabilitation

Finite Element Modeling of Jointed Plain Concrete Pavements Under Rolling Forklift Tire (TRBAM-24-00289) - B710

Ajayshankar Jagadeesh/Delft University of Technology: Technische Universiteit Delft, Saranga Premarathna/Delft University of Technology: Technische Universiteit Delft, Kumar Anupam/Delft University of Technology: Technische Universiteit Delft, Cor Kasbergen/Delft University of Technology: Technische Universiteit Delft, Sandra Erkens/Delft University of Technology: Technische Universiteit Delft

A Preliminary Study for the Factors Affecting the Pavement ME Predictions for the Concrete Test Road in Florida (TRBAM-24-00666) - B711

Issa Issa/Atlas Technical Consultants Inc, Shahbaz Khan/Atlas Technical Consultants Inc, James Greene/Atlas Technical Consultants Inc, Charles Holzschuher/Atlas Technical Consultants Inc

Machine Learning Approaches for the Layers Temperature Prediction in Lightweight Cellular Concrete Subbase Pavement (TRBAM-24-01189) - B712

Adnan Khan/Southeast University, Abimbola Oyeyi/Southeast University, Ju Huyan/Southeast University, Weiguang Zhang/Southeast University, Susan Tighe/Southeast University, Hanglin Cheng/Southeast University

Optimization of Continuously Reinforced Concrete Pavement to Truck Platoon Loading (TRBAM-24-01426) - B713

Mohsen Talebsafa/Site Technologies, Stefan Romanoschi/Site Technologies, Yazeed Jweihan/Site Technologies

Enhancing the Abrasion Resistance of Cement Concrete Pavement Through In Situ Precipitation of Hydroxyapatite (TRBAM-24-02091) - B714

Fan Yang/Tongji University, Xin Qian/Tongji University, HongDuo Zhao/Tongji University, Mengxiao Li/Tongji University, Heng Yang/Tongji University, Chenguang Jia/Tongji University, Jianming Ling/Tongji University

Rigid Pavement Faulting Prediction for Wet No Freeze Zone Using Artificial Neural Network (TRBAM-24-03870) - B715

Prashanta Acharjee/University of Texas, Tyler, Prudviraj Mutyala/University of Texas, Tyler, Mena Souliman/University of Texas, Tyler

Characteristics of Polyurethane Foam Used to Repair Concrete Pavements in Tennessee (TRBAM-24-05899) - B716

Tito Nyamuhokya/Texas A&M Transportation Institute, Mbaki Onyango/Texas A&M Transportation Institute, Fortunatus Mawazo/Texas A&M Transportation Institute, Samson Udeh/Texas A&M Transportation Institute

Accounting for Early Age Behavior in Built-In Curling Models for Jointed Plain Concrete Pavements (TRBAM-24-06230) - B717

Lev Khazanovich/University of Pittsburgh, Sushobhan Sen/University of Pittsburgh, Kathryn Kennebeck/University of Pittsburgh

The Solution of an Infinite Thin Plate on an Elastic Half-Space Foundation with Horizontal Friction (TRBAM-24-06440) - B718

Linyan Cheng/Tongji University, Zhiming Tan/Tongji University

Concrete Overlay Performance on US58 in Virginia (TRBAM-24-05156) - B719

M. Shabbir Hossain/Virginia Department of Transportation, Girum Merine/Virginia Department of Transportation

3118



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Fatigued by Fatigue Cracking: Asphalt Pavement Solutions to Improve Cracking

Nicole Elias, University of Nevada, Reno, presiding

Lance Malburg, NACE / Dickinson County Road Commission, presiding

Sponsored By Standing Committee on Design and Rehabilitation of Asphalt Pavements

Come to this poster session to learn how to get over your fatigue of fatigue cracking! Solutions and innovative research are presented for cracking in asphalt pavements and asphalt overlays over concrete pavements.

Future Cracking Performance Evaluation of Asphalt Pavements Based on IDEAL-CT Parameters (TRBAM-24-00145) - B722

Aaron Leavitt/Texas A&M University, Amy Martin/Texas A&M University, Edith Arámbula-Mercado/Texas A&M University

Investigation of Interlayer Bonding Performance Between Asphalt Concrete Overlay and Portland Cement Concrete Using an Inclined Shear Fatigue Test (TRBAM-24-00603) - B723

Tian Jin/Tongji University, Yue Hu/Tongji University, Ruikang Yang/Tongji University, Liping Liu/Tongji University, Lijun Sun/Tongji University

Predicting Pavement Service Life Benefits of Geosynthetics Integration in Nevada (TRBAM-24-03062) - B724

Julissa Larios Rodriguez/University of Nevada, Reno, Adam Hand/University of Nevada, Reno, Elie Hajj/University of Nevada, Reno, Nick Weitzel/University of Nevada, Reno, Thomas Van Dam/University of Nevada, Reno, Peter Sebaaly/University of Nevada, Reno

Development of a Framework for Structural Design of Long-Lasting Porous Asphalt Pavement for High-Traffic Volume Roadways (TRBAM-24-03599) - B725

Abhary Eleyedath/Rowan University, Gabriel Becerril Jr./Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan University

Scaled Sensitivity of Pavement Mechanistic-Empirical Transfer Function Coefficients for Flexible and Rigid Pavements (TRBAM-24-03796) - B726

Syed Waqar Haider/Michigan State University, Rahul Raj Singh/Michigan State University, Hamad Bin Muslin/Michigan State University, Faizan Lali/Michigan State University, Kirk Dolan/Michigan State University

Prediction of Alligator Cracking Index for Asphalt Overlay Pavements in Louisiana Using Markov Chain Models (TRBAM-24-04515) - B727

Hang Lu/Louisiana Department of Transportation and Development, Zhong Wu/Louisiana Department of Transportation and Development, yilong Liu/Louisiana Department of Transportation and Development

Performance Evaluation of Interlayers in Mitigating Reflective Cracking of Composite Pavements Under Mixed Mode Loading (TRBAM-24-00456) - B728

Afaq Durrani/University of Louisiana, Lafayette, Mohammad Khattak/University of Louisiana, Lafayette

Enhancement of Creep Compliance Input Level Two for AASHTOWare Pavement Mechanistic-Empirical Design (TRBAM-24-02795) - B729

Abu Sufian/Applied Research Associates, Inc., Hyung Suk Lee/Applied Research Associates, Inc., Harold Von Quintus/Applied Research Associates, Inc., Wouter Brink/Applied Research Associates, Inc., Brendan Neunaber/Applied Research Associates, Inc., Peter Ro/Applied Research Associates, Inc.

On the Impact of Delivery Vehicles on Pavement Performance in Residential Areas: A Case Study in Evanston, Illinois (TRBAM-24-00898) - B721

Callahan Skiles/Northwestern University, Jing Yu/Northwestern University, Pablo Durango-Cohen/Northwestern University



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Responding to Natural and Humanmade Disasters of Different Scales: Our Society and Our Efforts

Diana Herriman, FEMA, presiding

Xianfeng Yang, University of Maryland, College Park, presiding

Sponsored By Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity

This poster session includes efforts from researchers and practitioners to address challenges that arise in emergency preparedness, response, and recovery. Presentations cover a wide range of emergencies: natural hazards (such as hurricanes and wildfires), transportation network disruptions (such as subway/rail incidents), public health crises (such as the pandemic), human trafficking, and other topics.

Systematic Review and Research Gaps for Wildfire Evacuations: Transportation Modes, Networks, and Planning (TRBAM-24-00111) - B600

Syeda Narmeen Zehra/University of Alberta, Stephen Wong/University of Alberta

Strengthening Public Transit Equity in Evacuation Planning Through a Community-Centered Approach (TRBAM-24-00209) - B601

Veronica Wambura/University of Alberta, Stephen Wong/University of Alberta

Equitable Transportation and Resilience Hubs: Analysis of Underserved Population Needs, Usage, and Travel (TRBAM-24-00245) - B602

Thyanne Ciriaco/University of Alberta, Syeda Narmeen Zehra/University of Alberta, Veronica Wambura/University of Alberta, Stephen Wong/University of Alberta

Pre-Disaster, Self-Evacuation Transport Network Design Under Uncertain Demand and Connectivity Reliability: A Novel Bi-Level Programming Model (TRBAM-24-00273) - B604

JUNXIANG XU/UNSW Sydney, Divya Nair/UNSW Sydney

Evacuation Needs of Homeless People in Waikiki, O'ahu (TRBAM-24-00547) - B605

Karl Kim/University of Hawaii, Farnaz Kaviari/University of Hawaii, Cuong Tran/University of Hawaii, David Marasco/University of Hawaii, Eric Yamashita/University of Hawaii

An Extended Floor Field CA Model for Pedestrian Emergency Evacuation Considering Panic Emotion (TRBAM-24-00758) - B607

Bingxin Cao/Beijing University of Technology, Yongxing Li/Beijing University of Technology, Yanyan Chen/Beijing University of Technology, Xiaoxia Yang/Beijing University of Technology, Zhilu Yuan/Beijing University of Technology

Infrastructure-Less, VANET-Based Routing Systems: A High-Level, Agent-Based Modeling and Simulation Approach for Urban Network (TRBAM-24-00830) - B608

Jad Sari El Dine/American University of Beirut, Harith Abdulsattar/American University of Beirut, Hassan Artail/American University of Beirut, Zhao Zhang/American University of Beirut

Human Trafficking Awareness Training and Response Procedure Template for Transit Agencies (TRBAM-24-00860) - B609

Jodi Godfrey/University of South Florida, Lisa Staes/University of South Florida

Exploring the Effectiveness of Evacuation Strategies for Communities with Different Ratios of Volume of Background Traffic and Capacity of Evacuation Roads to the Number of Evacuees (TRBAM-24-01094) - B610

Pengshun Li/University of California, Berkeley, Bingyu Zhao/University of California, Berkeley, Kenichi Soga/University of California, Berkeley, Louise Comfort/University of California, Berkeley

Evaluation of Community-Level Benefits for Regional Contraflow Strategy During Disaster Evacuation (TRBAM-24-01631) - B615

Md Ashrafal Imran/University of Texas, Arlington, Kate Hyun/University of Texas, Arlington, Mehrdad Arabi/University of Texas, Arlington

Crash Trends and Severity During Mass Evacuations and Reentry: A Comparison of Emergency and Non-Emergency Periods (TRBAM-24-02215) - B620

Peiyang Xu/Embry Riddle Aeronautical University, Amelia Lawson/Embry Riddle Aeronautical University, Kai Liu/Embry Riddle Aeronautical University, Ye Gao/Embry Riddle Aeronautical University, Scott Parr/Embry Riddle Aeronautical University, Zhao Zhang/Embry Riddle Aeronautical University, Brian Wolshon/Embry Riddle Aeronautical University

Social Vulnerabilities and Wildfire Evacuations: A Case Study of the 2019 Kincade Fire (TRBAM-24-02234) - B621

Yuran Sun/University of Florida, Ana Forrister/University of Florida, Erica Kuligowski/University of Florida, Ruggiero Lovreglio/University of Florida, Thomas Cova/University of Florida, Xilei Zhao/University of Florida

(continued)

Optimizing Urban Emergency Facility Allocation Considering the Uncertainties of Road Network Conditions and Human Mobility (TRBAM-24-02236) - B544

Gong Huatian/Tongji University, Xiaoguang Yang/Tongji University, Zang Jingru/Tongji University, Yang Aji/Tongji University, Yang Xia/Tongji University

Satellite Imagery–Based Hurricane Debris Assessment: Model Development and Application in Rural Florida (TRBAM-24-02490) - B540

Richard Antwi/Florida A&M University-Florida State University, Samuel Takyi/Florida A&M University-Florida State University, Eren Ozguven/Florida A&M University-Florida State University, Kathy Volcy/Florida A&M University-Florida State University, Md. Shaharier Alam/Florida A&M University-Florida State University, Kyusik Kim/Florida A&M University-Florida State University, Mark Horner/Florida A&M University-Florida State University, Marcia Mardis/Florida A&M University-Florida State University

Social Optimal Disaster Relief Distribution with Mobile Beneficiaries with Homogeneous Needs (TRBAM-24-02492) - B542

Sofía Pérez-Guzmán/Georgia Institute of Technology, Jose Holguin-Veras/Georgia Institute of Technology

Effective Strategies for Emergency Evacuation in Subway Stations: A Simulation-Based Study (TRBAM-24-02718) - B543

Amir Hossein Salarian/Iran University of Science and Technology, Morteza Bagheri/Iran University of Science and Technology, Afshin Shariat Mohaymany/Iran University of Science and Technology

Highway System Recovery Times from Disruptions by Natural Hazards (TRBAM-24-02768) - B550

Amy Kim/University of British Columbia, Mujeeb Rahman/University of British Columbia

Resilience-Based Urban Rail Transit Network Recovery Strategy (TRBAM-24-02838) - B551

Kangrui Zhang/Beijing Jiaotong University, Yang Yang/Beijing Jiaotong University, Tengyuan Zhang/Beijing Jiaotong University, Yadi Zhu/Beijing Jiaotong University

Strengthening Community Resilience by Modeling Transportation and Electric Power Network Interdependencies (TRBAM-24-02926) - B612

Tasnuba Binte Jamal/University of Central Florida, Omar Abdul-Aziz/University of Central Florida, Pallab Mozumder/University of Central Florida, Samiul Hasan/University of Central Florida

Post-Disaster Traffic Micro-Circulation System Design for Traffic Organization Optimization (TRBAM-24-03019) - B552

Gao Xueyi/Harbin Institute of Technology, Yusheng Ci/Harbin Institute of Technology, Lili Zhang/Harbin Institute of Technology, Lina Wu/Harbin Institute of Technology

A Review of the Impact of COVID-19 on Novel Last-Mile Delivery Methods (TRBAM-24-03232) - B553

Katherine Enders/University of Texas, Austin, Junfeng Jiao/University of Texas, Austin, Evan Ruby/University of Texas, Austin

Statewide Corridor Evacuation Response and Re-Entry Behaviors in Florida During Hurricane Irma (TRBAM-24-03294) - B554

Xin Wang/Inner Mongolia University, Yuan Zhu/Inner Mongolia University, Hong Yang/Inner Mongolia University, Kun Xie/Inner Mongolia University

A Micro-Macro Approach to Modeling the Flocking of Crowd Dynamics (TRBAM-24-03430) - B560

Haoyang Liang/Tongji University, Yun Ye/Tongji University, Jian Sun/Tongji University

Evacuation in Motion: Harnessing Disaster Evolution for Effective Dynamic Emergency Response (TRBAM-24-03431) - B570

Hassan Idoudi/Universite Gustave Eiffel, Weixin Li/Universite Gustave Eiffel, Mostafa Ameli/Universite Gustave Eiffel, Marta González/Universite Gustave Eiffel, Mahdi Zargayouna/Universite Gustave Eiffel

Translating Social Media Crisis Narratives into Road Network Utilization Metrics: The Case of COVID-19 and the 2020 Oklahoma Ice Storm (TRBAM-24-03452) - B618

H M Imran Kays/University of Oklahoma, Khondhaker Al Momin/University of Oklahoma, Menziwokuhle Bandise Thwala/University of Oklahoma, K.K. "Muralee" Muraleetharan/University of Oklahoma, Arif Mohaimin Sadri/University of Oklahoma

Community-Based Behavioral Understanding of Crisis Activity Concerns Using Social Media Data: A Study of the 2023 Canadian Wildfires in New York City (TRBAM-24-03454) - B619

Khondhaker Al Momin/University of Oklahoma, MD Sami Hasnine/University of Oklahoma, Arif Mohaimin Sadri/University of Oklahoma

Contribution of Network Redundancy to Reducing Criticality of Road Links (TRBAM-24-03536) - B562

Eduardo Allen Binet/University of Auckland, Seosamh Costello/University of Auckland, Theunis Henning/University of Auckland

(continued)

Long-Term Settlement Choice Model for Refugees' Humanitarian Aid Routes Management in the Fukushima Nuclear Disaster (TRBAM-24-03659) - B564

Rena Koseki/University of Tokyo, Kiri Fukutani/University of Tokyo, Eiji Hato/University of Tokyo

Understanding Social Impacts of Major Disruptions from the Perspective of Destination Access (TRBAM-24-03689) - B563

Manika Rana Bhat/Louisiana Transportation Research Center (LTRC), Ruijie Bian/Louisiana Transportation Research Center (LTRC), Tara Tolford/Louisiana Transportation Research Center (LTRC), Hany Hassan/Louisiana Transportation Research Center (LTRC)

Modeling Human–Fire–Agent Interactions for Subway Fire Evacuation: A Case Study in Lumu Station of Suzhou Subway (TRBAM-24-03741) - B572

Zhe Li/Soochow University, Weike Lu/Soochow University, Yong Zhang/Soochow University, Chuan Sun/Soochow University, Hao Huang/Soochow University

Understanding Hurricane Evacuation Behavior from Facebook Data: A Case Study of Pinellas County, Florida, During Hurricane Ian (TRBAM-24-03920) - B613

Md. Mobasshir Rashid/University of Central Florida, Jeremy Waugh/University of Central Florida, Samiul Hasan/University of Central Florida

The Potential of Using Sport Activity Vehicles in Evacuating Vulnerable Population During Tornado Early Warning: A Case Study of Tuscaloosa County, Alabama (TRBAM-24-04174) - B573

Riffat Islam/University of Alabama, Emmanuel Adanu/University of Alabama, Jun Liu/University of Alabama, Steven Jones/University of Alabama

Systematic Review of Electric Vehicles, Resilience, and Evacuations (TRBAM-24-04189) - B603

Mohammad Hossein Babaei/University of Alberta, Stephen Wong/University of Alberta

Understanding Wildfire Evacuation Challenges for Communities with Limited Egress Options: Integrating Models of Fire, Communications, Traffic, and Empirical Observations (TRBAM-24-04236) - B611

Bingyu Zhao/Vienna University of Technology, Kenichi Soga/Vienna University of Technology, Louise Comfort/Vienna University of Technology, Pengshun Li/Vienna University of Technology, Yanglan Wang/Vienna University of Technology, Drew Gomberg/Vienna University of Technology

Development of a Microsimulation-Based Mass Evacuation Model for Persons Needing Mobility Assistance (TRBAM-24-04562) - B574

Abdul Wasay Memon/Dalhousie University, Muhammad Habib/Dalhousie University

Network-Wide Evacuation Traffic Prediction in a Rapidly Intensifying Hurricane from Traffic Detectors and Facebook Movement Data: A Deep Learning Approach (TRBAM-24-04919) - B614

Md. Mobasshir Rashid/University of Central Florida, Rezaur Rahman/University of Central Florida, Samiul Hasan/University of Central Florida

Intelligent Traffic Systems for Evacuation Management: Enhancing Existing Solutions Through Unmanned Aerial Vehicles (TRBAM-24-05031) - B582

Guanhao Xu/Oak Ridge National Laboratory, Zejiang Wang/Oak Ridge National Laboratory, Jianfei Chen/Oak Ridge National Laboratory

The Impact of Debris Removal Post-Wildfires on Pavement Fatigue and Rutting Lives: Case Studies of California's Camp and Carr Fires (TRBAM-24-05396) - B583

Ali Zarei/University of California, Davis, Changmo Kim/University of California, Davis, Ali Butt/University of California, Davis, Rongzong Wu/University of California, Davis, Jeremy Lea/University of California, Davis, Jessica Erdahl/University of California, Davis, Somayeh Nassiri/University of California, Davis

Sequencing Concurrent Recovery Projects from Disruption via a Network Flow Approach (TRBAM-24-05526) - B592

Yiyang Peng/Hong Kong Polytechnic University, Min Xu/Hong Kong Polytechnic University, Guoyuan Li/Hong Kong Polytechnic University, Anthony Chen/Hong Kong Polytechnic University

Community Resilience: The Potential of Peer-to-Peer Transportation Sharing (TRBAM-24-05609) - B593

Zhengyang Li/University of Washington, Anthony Chen/University of Washington, Katherine Idziorek/University of Washington, Cynthia Chen/University of Washington

Resource-Sharing Behavior During Flooding Events: A Latent Class Analysis to Guide Community-Based Relief Distribution (TRBAM-24-05703) - B584

Chi-Ya Chou/Northwestern University, Elisa Borowski/Northwestern University, Amanda Stathopoulos/Northwestern University

Enhancing Post-Disaster Recovery Planning: A Framework for Integrating Non-Motorized Transportation (TRBAM-24-05823) - B594

Daniel Patterson/Cambridge Systematics, Chengbo Ai/Cambridge Systematics, Eleni Christofa/Cambridge Systematics, Bryan Remache-Patino/Cambridge Systematics, Suseel Indrakanti/Cambridge Systematics, Efthymia Kostopoulou/Cambridge Systematics, Guilherme Leao/Cambridge Systematics

Finding Critical Transitions of the Post-Disaster Recovery Using the Sensitivity Analysis of Agent-Based Models (TRBAM-24-05834) - B530

Sangung Park/Purdue University, Jiawei Xue/Purdue University, Satish Ukkusuri/Purdue University

Significance of Traffic Loading for Evacuation and Percolation-Based Control Strategies (TRBAM-24-05219) - B531

Ruqing Huang/University of Tennessee, Knoxville, Lee Han/University of Tennessee, Knoxville, Hao Zhou/University of Tennessee, Knoxville

Spatial Accessibility to Shelters Report: A Case Study of Hurricane Irma (TRBAM-24-05292) - B541

Jieya Yang/Florida State University, Eren Ozguven/Florida State University

Rapid Integrated Damage Assessment Using Google Street View and 360-Degree Imagery (TRBAM-24-05992) - B606

Karl Kim/University of Hawai'i, Manoa, Eric Yamashita/University of Hawai'i, Manoa, Jaeho Choi/University of Hawai'i, Manoa, Mike Vorce/University of Hawai'i, Manoa, Dylan Faraone/University of Hawai'i, Manoa

Evaluating Critical Network Links for Hurricane Evacuation: A Comparative Analysis of Link-Based and User-Based Metrics Using GPS-Based Data (TRBAM-24-06033) - B616

Mehrdad Arabi/University of Texas, Arlington, Kate Hyun/University of Texas, Arlington, Stephen Mattingly/University of Texas, Arlington, Md Ashraful Imran/University of Texas, Arlington

A data-driven approach to predict decision point choice during normal and evacuation wayfinding in multi-story buildings (TRBAM-24-06216) - B617

Yan Feng/Delft University of Technology, Panchamy Krishnakumari/Delft University of Technology

Greasing the Wheels: Transportation in Human Trafficking Policy and Its Implications for Transit Riders (TRBAM-24-06251) - B532

Shayna Goldsmith/University of Texas, Austin, Gian-Claudia Sciara/University of Texas, Austin

3120



Tuesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Systems, Enterprise, and Cyber Resilience Research Highlights, Advances, and Core Considerations (Competition)

Kaveh Bakhsh Kelarestaghi, Amazon, presiding

Sponsored By Standing Committee on Systems, Enterprise, and Cyber Resilience

This poster session and competition will display highlighted research in the area of systems, enterprise, and cyber resilience. Select committee members and friends will be on hand to review and discuss with posters key questions and qualities of findings for ranking and selection for poster awards that will culminate after the TRB 2024 Annual Meeting.

Resilient Transportation Assessment and Enhancement Research Status and Prospects: Theory and Technology (P24-20450) - B533

Yuzhe Jiang/Tongji University

Human Attitudes, Perceptions, and Acceptance of Autonomous Vehicle Cyber Risks (P24-20451) - B520

Rae Zimmerman/New York University

Unveiling the Stealthy Threat: Analyzing Slow Drift GPS Spoofing Attacks for Autonomous Vehicles in Urban Environments and Enabling the Resilience (TRBAM-24-05066) - B521

Sagar Dasgupta/University of Alabama, Abdullah Ahmed/University of Alabama, Mizanur Rahman/University of Alabama, Thejesh Bandi/University of Alabama

Deep Reinforcement Learning-Based Stealthy Attack Modeling in Mixed Traffic Flow (TRBAM-24-01758) - B523

Yangjiao Chen/Georgia Institute of Technology, Chaojie Wang/Georgia Institute of Technology, Srinivas Peeta/Georgia Institute of Technology

Analytical Characterization of Cyberattacks on Adaptive Cruise Control Vehicles (TRBAM-24-02396) - B524

Shian Wang/University of Texas, El Paso, Mingfeng Shang/University of Texas, El Paso, Raphael Stern/University of Texas, El Paso

Modeling and Detecting Falsified Vehicle Trajectories Under Data Spoofing Attacks (TRBAM-24-02886) - B510

Jun Ying/Purdue University, Yiheng Feng/Purdue University, Qi Chen/Purdue University, Z. Mao/Purdue University

(continued)

A Comparative Analysis of the Robustness of Multimodal Comprehensive Transportation Network Considering Mode Transfer (TRBAM-24-01822) - B511

Yongtao Zheng/Southeast University, Jialiang Xiao/Southeast University, Han Chen/Southeast University, Xuedong Hua/Southeast University

A Comparative Analysis for the Robustness of Multimodal Comprehensive Transportation Network: From the Perspectives of Infrastructure and Operation (TRBAM-24-03819) - B512

Jialiang Xiao/Southeast University School of Transportation, Yongtao Zheng/Southeast University School of Transportation, Xuanrong Ji/Southeast University School of Transportation, Xuedong Hua/Southeast University School of Transportation

Railroad Resiliency Following an OT Cyberattack (TRBAM-24-00082) - B513

Todd Ellis/Hatch

Enhancing Vehicular Platoon Stability in the Presence of Communication Cyberattacks: A Reliable Longitudinal Cooperative Control Strategy (TRBAM-24-04917) - B514

Zihao Li/Texas A&M University, Yang Zhou/Texas A&M University, Yunlong Zhang/Texas A&M University

Experimental Validation of Sensor Fusion-based GNSS Spoofing Attack Detection Framework for Autonomous Vehicles (TRBAM-24-06417) - B522

Sagar Dasgupta/University of Alabama, Kazi Hassan Shakib/University of Alabama, Mizanur Rahman/University of Alabama

Two-Layer, Blockchain-IPFS Information Sharing Model in Precast Construction: Whole Supply Chain Perspective (TRBAM-24-05566) - B500

SHISHU DING/Shanghai Jiao Tong University, Hao Hu/Shanghai Jiao Tong University, Wen Wang/Shanghai Jiao Tong University

Unveiling the Gap: A Survey-Based Analysis of the Misunderstanding Between Technology Readiness and Maturity for State Departments of Transportation (TRBAM-24-04496) - B501

Amit Tripathi/Iowa State University, Roy Sturgill/Iowa State University, Hala Nassereddine/Iowa State University, Gabriel Dadi/Iowa State University

Exploring Antifragility in Traffic Networks: Anticipating and Gaining from Disruptions with Reinforcement Learning (TRBAM-24-03990) - B502

Linghang Sun/ETH Zurich, Michail Makridis/ETH Zurich, Alexander Genser/ETH Zurich, Cristian Axenie/ETH Zurich, Margherita Grossi/ETH Zurich, Anastasios Kouvelas/ETH Zurich

Measuring the Unemployment Rate During the COVID-19 Pandemic in Different U.S. Transportation Sectors (TRBAM-24-03673) - B503

Behzad Rouhanizadeh/University of New Orleans, Elnaz Safapour/University of New Orleans

Dynamic Resource Allocation for Connected and Automated Vehicles' Cybersecurity (TRBAM-24-03084) - B504

Yiyang Wang/Intel Corp, Shurui Zhang/Intel Corp, Neda Masoud/Intel Corp, Khojandi Anahita/Intel Corp

Smartwatches in Transportation: Unleashing Innovations and Advancements: A Comprehensive Systematic Review (TRBAM-24-05064) - B534

Eazaz Sadeghvaziri/Mercer University, Ramina Javid/Mercer University

3097

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 204C

On Track to the Future: Electrification, Train Control, and Neural Networks

Jeffrey Schultz, David Evans and Associates, Inc., presiding

Sponsored By Standing Committee on Railroad Operating Technologies

This session will feature three papers from around the world discussing advances in railway operating technologies as well as examining the uses of different operating technologies. These speakers from academia will discuss their findings on four different topics: Choice of Current and Wind Speed Prediction for Railroad Network with Spatial-Temporal Graph Neural Network, Research on the interoperability of CBTC and CTCS-2 in rail transit, and Railway Signal Digitalization with ERTMS and PTC, Industry 4.0 Expectations and Reality. Please join us to learn more about these exciting advances in the rail industry.

Choice of Current and Voltage for North American Commuter Rail Electrifications (TRBAM-24-00003)

John Allen/No Organization

Railway Signal Digitalization with ERTMS and PTC: Industry 4.0 Expectations and Reality (TRBAM-24-00262)

Steven Harrod/Technical University of Denmark

(continued)

Wind Speed Prediction for Railroad Network with Spatial-Temporal Graph Neural Network (TRBAM-24-01722)

Yujie Huang/Shanghai Jiao Tong University, Zhipeng Zhang/Shanghai Jiao Tong University, Wenqiang Zhao/Shanghai Jiao Tong University

3121

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Salon B

What's New at the National Highway Traffic Safety Administration, Part 1 (Part 2, Session 3178)

Chou-Lin Chen, National Highway Traffic Safety Administration (NHTSA), presiding

Sponsored By Safety and Operations Group

This is the first in a series of two panels presenting new research findings from the National Highway Traffic Safety Administration (NHTSA). This panel of staff from NHTSA's National Center for Statistics and Analysis will present data and analyses on recent fatality trends, injuries by sex, race and ethnicity traffic safety data, data tools, occupant protection surveys, and micromobility and transportation equity.

National Highway Traffic Safety Administration Highlights (P24-21386)

Sophie Shulman/National Highway Traffic Safety Administration (NHTSA)

NCSA Updates: Bipartisan Infrastructure Law Implementation, State Electronic Data Collection Grant Program, and Crash Investigation Sampling System Expansion (P24-21358)

Chou-Lin Chen/National Highway Traffic Safety Administration (NHTSA)

Recent Fatality Trends (P24-21359)

Rajesh Subramanian/National Highway Traffic Safety Administration (NHTSA)

New National Highway Traffic Safety Administration Fact Sheet on Traffic Fatalities by Race and Ethnicity (P24-21361)

Leah Reish/National Highway Traffic Safety Administration (NHTSA)

Updates to the National Highway Traffic Safety Administration Data Tools (P24-21362)

Anders Longthorne/National Highway Traffic Safety Administration (NHTSA)

Redesign of the National Highway Traffic Safety Administration Occupant Protection Surveys (P24-21363)

Lacey Werth/National Highway Traffic Safety Administration (NHTSA)

Micromobility and Transportation Equity (P24-21385)

Tristan Coughlin/National Highway Traffic Safety Administration (NHTSA)

3122

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 102B

Operating Outside the Norm: How to Manage the Unplanned

Robert Brydia, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Freeway Operations

Whether you're a seasoned professional or simply looking to expand your knowledge, this session promises to be a valuable opportunity to learn from experts as we explore the strategies and techniques required to thrive when operating outside the norm. Discover strategies for proactive planning, resource allocation, and ensuring the safety of your community when nature throws its worst at you; learn effective coordination techniques to minimize disruptions to daily life and commerce when facing unexpected road closures due to catastrophic events; and hear about innovative solutions for optimizing transportation flow, enhancing public safety, and creating a positive experience for attendees for special events in smaller communities.

The Buffalo Blizzard of 2022 (P24-20984)

Athena Hutchins/Niagara International Transportation Technology Coalition

Highway 401 Closure: Tanker Explosion (P24-20999)

Philip Masters/Parsons

Game Day: Big City Traffic in a College Town (P24-21000)

Debbie Albert/Texas A&M Transportation Institute

I-95 Bridge Emergency Response (P24-21325)

David Adams/Pennsylvania Department of Transportation

3123

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Salon A

Managed Lanes: Practices, Policies, and Strategies

Brian Swindell, HDR, presiding

Sponsored By Standing Committee on Managed Lanes

Best Practices for Maintaining an High-Occupancy Vehicle Emphasis for Managed Lanes Projects (TRBAM-24-00891)

Kerri Snyder/ICF, Nick Wood/ICF, Eric Schreffler/ICF, Sarah Lettes/ICF, Catherine Duffy/ICF, Chris Simek/ICF

Optimizing Dedicated Lanes for Connected Automated Trucks in Mixed Traffic Flow on Multi-Lane Freeways: A Shared Strategy Approach (TRBAM-24-01156)

Xiao Sang/Southwest Jiaotong University, Kangning Hou/Southwest Jiaotong University, Can Liu/Southwest Jiaotong University, Fangfang Zheng/Southwest Jiaotong University, Xiaobo Liu/Southwest Jiaotong University, Sifeng Li/Southwest Jiaotong University

Impact of a Dedicated Lane Policy on Travel Time Delay in Mixed Traffic (TRBAM-24-05235)

Chenguang Zhao/Hong Kong University, Huan Yu/Hong Kong University, Xiaotong Sun/Hong Kong University

Traffic Performance and Safety Impact of Managed Lane Design Strategies in a Mixed Driver-Operated and Autonomous Vehicular Fleet (TRBAM-24-05472)

Jana Sarran/Carleton University, Yasser Hassan/Carleton University

3124

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Salon C

Emerging Traffic Simulation Trends

Andrew Berthaume, OST-R/Volpe Center, presiding

Sponsored By Standing Committee on Traffic Simulation

Dynamic Lane Assignment and Signal Timing Collaborative Optimization for Incident-Affected Intersections (TRBAM-24-03259)

Jiawen Wang/University of Shanghai for Science and Technology, Yuli Chen/University of Shanghai for Science and Technology, Yang Feng/University of Shanghai for Science and Technology, Jing Zhao/University of Shanghai for Science and Technology

Bi-Level Calibration for Agent-Based Dynamic Traffic Simulations Using Diverse Data Fusion (TRBAM-24-04652)

Maryam Samaei/Universite Gustave Eiffel, Mostafa Ameli/Universite Gustave Eiffel, Jon Davis/Universite Gustave Eiffel, Sean McQuade/Universite Gustave Eiffel, Jonathan Lee/Universite Gustave Eiffel, Benedetto Piccoli/Universite Gustave Eiffel, Alexandre Bayen/Universite Gustave Eiffel

Leveraging Difference Reward in Multi-Agent Systems at City-Scale Networks Using Mesoscopic Simulation (TRBAM-24-05115)

Diogo Rodrigues/University of Porto, Rosaldo Rossetti/University of Porto

Optimized Road Network Development with Comparison of Microsimulation and Traffic Assignment (TRBAM-24-05369)

Fei Wu/Precision Systems, Inc., Jianhe Du/Precision Systems, Inc., Paul Schonfeld/Precision Systems, Inc., Hesham Rakha/Precision Systems, Inc.

3125

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 103A

A Mix of Analysis Approaches in Truck Safety

Robert Scopatz, VHB, presiding

Sponsored By Standing Committee on Truck and Bus Safety

Commercial Truck Risk Assessment and Factor Analysis Based on Vehicle Trajectory and In-Vehicle Monitoring Data (TRBAM-24-05097)

Xuesong Wang/Tongji University, Xiaowei Tang/Tongji University, Tianxiang Fan/Tongji University, Yanru Zhou/Tongji University

(continued)

Traffic Operation Risk Measurement and Its Influencing Factors Analysis Using the SHAP Interpretation Method for Intercity Buses (TRBAM-24-05179)

Meiping Yun/Tongji University, Peiyu Lu/Tongji University, Xiaojie Zhu/Tongji University

An Investigation of Relationships Between Aberrant Driving Behaviors and Crash Risk Among Long-Haul Truck Drivers Traveling Across India: A Structural Equation Modeling Approach (TRBAM-24-01627)

Balamurugan Shandhana Rashmi/National Institute of Technology, Tiruchirappalli, Dr Sankaran Marisamynathan/National Institute of Technology, Tiruchirappalli

Analysis of Single-Vehicle Large Trucks Crashes on Rural Roads: Accounting for Unobserved Heterogeneity (TRBAM-24-02746)

Muhammad Faisal Habib/North Dakota State University, Diomo Motuba/North Dakota State University

3126

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 150B

Travel Data Users Forum: Measuring Teleworking and Its Impact

Michael Fontaine, Virginia Transportation Research Council, presiding

Sponsored By Standing Committee on Urban Transportation Data and Information Systems

The COVID-19 pandemic resulted in large changes in how employers view telework, creating significant changes in regional travel and employment patterns. Measuring and assessing the impacts of teleworking of a metropolitan or regional scale remains a challenge as planning agencies adjust models and methods to define and account for the "new normal" post pandemic. This interactive session will discuss how we can measure telework, including issues in assessing impacts on travel patterns and downtown areas. This discussion provides an opportunity for the transportation data user community to learn about teleworking trends and data, as well as share their own experiences. Come ready to ask questions and share your own stories!

Overview and Researcher Perspective (P24-20152)

David Schrank/Texas A&M Transportation Institute

Researcher Perspective (P24-20151)

Patricia Mokhtarian/Georgia Institute of Technology

Metropolitan Planning Organization Perspective (P24-20153)

Kanti Srikanth/Metropolitan Washington Council of Governments

Census Bureau Perspective (P24-20154)

Brian Mckenzie/U.S. Census Bureau

3127 CM (1.75)

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 151A

Pathways to Decarbonizing Urban Transportation: Highlights from the Innovations in Travel Analysis and Planning Conference

Xuesong Zhou, Arizona State University, presiding

Rosella Picado, WSP, presiding

Sponsored By Section - Transportation Planning and Analysis, Standing Committee on Transportation Planning Analysis and Application, Standing Committee on Traveler Behavior and Values, Standing Committee on Transportation Network Modeling, Standing Committee on Transportation Demand Forecasting

Since the 1950s, long-range transportation planning has taken a "predict and provide" approach that forecasts future travel demand and evaluates proposed projects starting from that forecast. More recently, planners have argued for a "decide and provide" built around a vision for the transportation system we want. One manifestation of that approach is states adopting GHG reduction targets. This practitioner-focused session will present the results of the analyses that transportation agencies have conducted to identify the most effective pathways of achieving GHG or VMT reduction targets. It features presentations from the 2023 TRB Innovations in Travel Analysis in and Planning Conference and selected speakers that build upon that theme.

The Need for New Approaches in Planning for Transportation and Climate: A Research and Policy Perspective (P24-20849)

Gretchen Goldman/Office of the Secretary of Transportation (OST)

(continued)

From Predict and Provide to Decide and Provide: The Evolving Role of Analysis in Long-Range Transportation Planning (P24-20506)

Charlene Rohr/Mott MacDonald, LLC

Oregon Transportation Plan: Case Studies of Utilizing Scenario Planning in an Era of Rapid Change and Uncertainty (P24-20507)

Adam Argo/Oregon Department of Transportation, Tara Weidner/Oregon Department of Transportation, Jonathan Slason/Resource Systems Group, Inc. (RSG)

Shortening a Long-Range Model: Which Policies Matter Most for Climate? (P24-20508)

Suzanne Childress/Puget Sound Regional Council (PSRC), Brice Nichols/Puget Sound Regional Council (PSRC), Brian Lee/Puget Sound Regional Council (PSRC)

A Mode Shift Feasibility Assessment for Setting Vehicle Miles Traveled Reduction Targets (P24-20509)

Jonathan Ehrlich/Metropolitan Council, Matthew Bhagat-Conway/University of North Carolina, Gregory Erhardt/University of Kentucky

Developing Sustainable Community Strategies for Achieving Greenhouse Gas Reduction Targets in California (P24-20514)

Annie Nam/Southern California Association of Governments

Perspectives from Future Leaders (P24-20515)

Mohammad Abbasi/Arizona State University, Siwei Hu/University of California, Irvine, Myriam Zakhem/Southern Methodist University, Amy Lee/University of California, Los Angeles

3128

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 150A

Revolutionary Instrument or Another Tool in the Toolbox: Ten Years of Smartphone Travel Surveys

Stacey Bricka, MacroSys Research and Technology, presiding

Sponsored By Standing Committee on Travel Survey Methods

Introduction to Session (P24-20423)

Zachary Patterson/Concordia University

Overview of the Role That Smartphones Play in Travel Data Collection After Their First Decade (P24-20422)

Eric Miller/University of Toronto

Evaluating Data from a 7-Day, Smartphone-Based Travel Survey (P24-20420)

Kenneth Joh/Metropolitan Washington Council of Governments

Ohio's Travel Survey Innovation History and Current Smartphone Use (P24-20421)

Rebekah Straub/Ohio Department of Transportation

It Is Complicated: The Metro Vancouver Experience with Smartphone Surveys (P24-20472)

Ilan Elgar/TransLink

3129 CM (1.75)

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 152B

Evolving Consumer Choices, Smartphones, Remote Work, Information and Communication Technology, and Mobility

Venu Garikapati, National Renewable Energy Laboratory (NREL), presiding

Sponsored By Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices

The session focuses on how Information and Communication Technologies (ICT) interact with existing and emerging mobility systems. In particular, papers included in the session look at theoretical and empirical contributions related to autonomous, shared and smart mobility, their potential for de-carbonization of transportation systems and their links to travel behavior and other sectors (e.g. energy consumption and public health).

Household Vehicle Ownership in the Post-COVID-19 Era: Relationships with Work Patterns and Attitudes Toward Teleworking (TRBAM-24-05262)

Ilsu Kim/Georgia Institute of Technology, Patricia Mokhtarian/Georgia Institute of Technology, Giovanni Circella/Georgia Institute of Technology

Investigating Channel Choice Behavior for Grocery Shopping Using Machine Learning Methods (TRBAM-24-03943)

Afsana Chowdhury/Florida International University, Ibukun Titiloye/Florida International University, Md Al Adib Sarker/Florida International University, Xia Jin/Florida International University

On the Selection of Workplace in the Post-COVID Era Using Attitudinal Factors (TRBAM-24-00683)

Alireza Dianat/University of Toronto, Khandker Habib/University of Toronto

Where and How Often Are Consumers Eating Out?: Implications for Transportation, Public Health, and Food Service Fields (TRBAM-24-02039)

Angela Haddad/University of Texas, Austin, Aupal Mondal/University of Texas, Austin, Chandra Bhat/University of Texas, Austin

3130

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 151B

Nontraditional Pathways to Leadership

Melrose Pan, Oak Ridge National Laboratory, presiding

Sponsored By Standing Committee on Strategic Management

The conventional route to leadership within transportation agencies typically entails a gradual progression, resulting in a landscape characterized by uniformity. However, the industry has undergone significant transformations, giving rise to non-traditional leaders. In this roundtable, participants will share their journeys to leadership roles, highlighting the unique experiences that have shaped their perspectives.

Embedding Social Science in Transportation Planning and Engineering (P24-20680)

Liz Williams/Massachusetts Department of Transportation

Advancing equity and inclusion (P24-20681)

Allison Dane Camden/Office of the Secretary of Transportation (OST)

Career Growth at the Texas Department of Transportation (P24-20682)

Brandye Hendrickson/Texas Department of Transportation

Transportation and Technology: Preparing for the Future (P24-20683)

Nathan Higgins/Slalom

3131 CM (1.75)

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 152A

Communicating Concepts to the Public Competition

Sarah Parkins, WSP, presiding

Lloyd Brown, HDR, presiding

Sponsored By Standing Committee on Public Engagement and Communications

Why don't they understand? Transportation professionals often find it challenging to communicate critical transportation topics to a non-technical audience. Since 2007, TRB's annual "Communicating Concepts with the Public" competition has highlighted real-life examples of new and innovative communication methods being used in transportation public engagement and outreach to communicate complex information to the public in "kitchen-table" terms they can easily understand. The competition seeks entries in three categories: planning & projects, policy, and operations. This session includes presentations from the competition winner and three runners-up entries.

Transportation Modernization Act Communications Campaign (P24-20336)

Stephen Townsend/Tennessee Department of Transportation, Jennifer Schultz/HNTB Corporation

Metro's Experience LIVE!: Engagement for the Better Bus Network Redesign (P24-20337)

Lisa Schooley/Washington Metropolitan Area Transit Authority, Alanna McKeeman/Foursquare Integrated Transportation Planning

Overcoming the Fear of Change Through Communication and Temporary Pavement Striping (P24-20338)

Matt Simpson/Kentucky Transportation Cabinet, Candice Wallace/Kentucky Transportation Cabinet

Arizona Department of Transportation's I-10 Broadway Curve Improvement Project Ready to Rubble: The Ultimate Bridge Takedown Event (P24-20339)

Marcy McMacken/Arizona Department of Transportation, Amy Ritz/Arizona Department of Transportation, Nicole Moon/WSP

3132

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 156

Homelessness Within the Right-of-Way

Christopher Kramer, Nossaman LLP, presiding

Sponsored By Standing Committee on Eminent Domain and Land Use, Standing Committee on Environmental Issues in Transportation Law, Standing Committee on Tort Liability and Risk Management

The issue of displaced persons occupying "temporary" encampments within highway right-of-way has increased in frequency and complexity. Can these encampments be allowed without unacceptable risks to the travelling public or the displaced persons? Can issues of public safety in terms of sanitation, crime, or mental health be addressed? If the occupants of these encampments are involuntarily displaced, do they have rights under Uniform Act? A very interesting discussion of these issues from multiple levels of government is the goal of this session.

The Use of Public Nuisance Laws to Relocate Homeless Encampments (P24-20449)

Jami Schmalz/City of Phoenix

Are Public Safety and Equity Mutually Exclusive? (P24-20466)

Bernadette Duran-Brown/Nossaman LLP

Do the Informally Housed Fall Under the Uniform Act? (P24-20467)

Christopher Kramer/Nossaman LLP

3133

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 204AB

Bridge Instrumentation Applications: Innovation, Weigh-in-Motion, and Impacts

David Kosnik, CTL Group, presiding

Sponsored By Standing Committee on Testing and Evaluation of Transportation Structures

TBD

Evaluation of a Load Cell-Based Bridge Weigh-in-Motion System (TRBAM-24-00729)

Shengyi Shi/Texas A&M University, Matthew Yarnold/Texas A&M University, Stefan Hurlebaus/Texas A&M University, John Mander/Texas A&M University

Development of Non-Fracture Critical Steel Box Straddle Caps (P24-20488)

Todd Helwig/University of Texas, Austin

Bridge Strike Detection System and Post-Event Assessment Methods (P24-20663)

Ozan Celik/Geocomp, Inc., Marybeth Miceli/Miceli Infrastructure Consulting, LLC

Rapid Response for Ensuring Safety Following Bridge Hits (P24-20447)

Maqbool Mohammed/Stantec

3134

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 202A

Next Steps in Seismic Research and Bridge Element Performance

Monique Head, University of Delaware, presiding

Stuart Bennion, WSP, presiding

Sponsored By Standing Committee on Seismic Design and Performance of Bridges, Subcommittee on Geoseismic Issues of Bridges (with AKG70), Standing Committee on Foundations of Bridges and Other Structures

This lectern session highlights recent advancements and next steps in seismic research and bridge element performance from the committee's call for papers. The scope of the TRB Standing Committee on the Seismic Design and Performance of Bridges (AKB50) is concerned with the performance of transportation structures during earthquakes and development of improved seismic design and retrofitting practices.

Cone Penetration Test-Based Liquefaction Analysis of Northeast Arkansas (TRBAM-24-04677)

Rupesh Mahat/Arkansas State University, Zahid Hossain/Arkansas State University

Pseudo-Static Cyclic Test on Skewed Integral Abutment-Pile-Soil System (TRBAM-24-03191)

QiuHong Zhao/Tianjin University, Youqun Wang/Tianjin University, Kui Gui/Tianjin University, Qinlong Weng/Tianjin University, Fuyun Huang/Tianjin University

Seismic Shear Strength of Hollow-Core Composite Bridge Columns (TRBAM-24-06155)

Mohanad Abdulazeez/Missouri University of Science and Technology, Mohamed ElGawady/Missouri University of Science and Technology

Fragility Analysis of a Multi-Span Precast Concrete Girder Bridge in the Pacific Northwest and Cascadia

Subduction Zone Under Long Duration Earthquakes (TRBAM-24-04580)

Shaymaa Obayes/University of Delaware, Monique Head/University of Delaware

3135



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 201

Digitalization and Construction Management: Streamlining Data Integration and Embracing Emerging Technologies

Richard Unkefer, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Construction Management

Join us for an engaging session where industry experts from state Departments of Transportation and Technology Providers will delve into the cutting-edge landscape of digital construction management and the integration with 3D design for a more effective digital project delivery. The session will explore innovative approaches to digitalization and data integration, highlight the most valuable technologies currently in use for construction management, and provide insights into the horizon of emerging technologies that are reshaping the industry's future.

Panel Member (P24-21006)

Matthew Miller/Iowa Department of Transportation

Panel Member (P24-21007)

James Preston/Topcon Positioning Systems, Michael Carris/Trimble Inc.

Panel Member (P24-21008)

Trisha Stefanski/Minnesota Department of Transportation

Panel Member (P24-21171)

Scott Fernald/Granite Construction

3136

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 207A

Hydrology and Hydraulics in the Transportation Environment

Thomas Knight, South Carolina Department of Transportation, presiding

Sponsored By Standing Committee on Hydrology, Hydraulics, and Stormwater

(continued)

Protect Grants (P24-21181)

Eric Brown/Federal Highway Administration (FHWA)

Post-Wildfire Flows and Transportation Infrastructure: Risks, Analysis, and Costs (P24-21182)

Steven Griffin/Colorado Department of Transportation

National Weather Service Inundation Mapping and Atlas 15 Extreme Precipitation (P24-21183)

Mark Glaudemans/National Weather Service

Methods Implemented in StreamStats for Estimating Daily Streamflows for Ungaged Locations in Iowa (P24-21184)

Peter McCarthy/U.S. Geological Survey

3137

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 207B

Application of Geophysics for Material Characterization

Robert Bachus, Geosyntec Consultants, Inc., presiding

Sponsored By Standing Committee on Soil and Rock Properties and Site Characterization, Subcommittee on Geophysics

Ground-Penetrating Radar Wave Response Simulation of Pipe Leakage in Subgrade Soil of Urban Roads with Couple of Leakage and Radio Frequency (TRBAM-24-01879)

Yunfeng Fang/Southeast University, Tao Ma/Southeast University, Zheng Tong/Southeast University

Application of Electrical Resistivity and Induced Polarization for Identification and Erosion Assessment in Fine-Grained Soils: A Case Study (TRBAM-24-01060)

Mostafa Ebrahimi/Southern Illinois University, Edwardsville, Abdolreza Osouli/Southern Illinois University, Edwardsville, Roohollah Farzalizadeh/Southern Illinois University, Edwardsville, Heather Shoup/Southern Illinois University, Edwardsville

Post-Failure Highway Slope Evaluation Using Coupled Geophysical and Geospatial Approach (TRBAM-24-00032)

Masoud Nobahar/LTRC: Louisiana Transportation Research Center, Mostafa Ebrahimi/LTRC: Louisiana Transportation Research Center, Rakesh Salunke/LTRC: Louisiana Transportation Research Center, Mohammad Sadik Khan/LTRC: Louisiana Transportation Research Center, Farshad Amini/LTRC: Louisiana Transportation Research Center

3D Full Waveform Tomography of SPT Seismic Wavefields in Karst Florida Limestone (TRBAM-24-00799)

Khiem Tran/University of Florida, Majid Mirzanejad/University of Florida, David Horhota/University of Florida, Scott Wasman/University of Florida

Nonlinear Interpretation of Resilient Modulus Parameters Considering Incremental Static and Dynamic Loading (TRBAM-24-05805)

Adrian Archilla/University of Hawaii, Phillip Ooi/University of Hawaii, Saroj Pathak/University of Hawaii

3138

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 209AB

Evaluation of Performance of Transportation Earthworks

Edward Hoppe, Virginia Department of Transportation, presiding

Daniel Alzamora, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Transportation Earthworks

Non-Destructive Evaluation of Mechanically Stabilized Earth Wall Using Ground-Penetrating Radar and Spectral Analysis of Surface Waves (TRBAM-24-06176)

Avipriyo Chakraborty/Jackson State University, Sayedul Kibria/Jackson State University, Mohammad Sadik Khan/Jackson State University, Md Fahimuzzaman Khan/Jackson State University, Ian La Cour/Jackson State University

Forensic Investigation of a Cracked Highway Embankment Pavement in Louisiana: A Case Study (TRBAM-24-05533)

Jesse Rauser/LTRC: Louisiana Transportation Research Center, Gavin Gautreau/LTRC: Louisiana Transportation Research Center, Masoud Nobahar/LTRC: Louisiana Transportation Research Center, Tyson Rupnow/LTRC: Louisiana Transportation Research Center

Failure Analysis and Recommendations for Improving Mechanically Stabilized Earth Retaining Wall Design and Construction : A Case Study from Tennessee (TRBAM-24-00338)

Hossein Alimohammadi/Terracon Consultants, Inc., Ashfaq Memon/Terracon Consultants, Inc.

(continued)

Freeze-Thaw Degradation of Plastic Soils and Resultant Surficial Slope Instability (P24-20762)

Tejo Bheemasetti/University of Arizona, Calvin Tohm/South Dakota School of Mines and Technology, Bret Lingwall/South Dakota School of Mines and Technology

A Case Study on Instrumenting and Monitoring Geosynthetic-Reinforced, Pile-Supported, Mechanically Stabilized Earth Wall Built Over Soft Soil (TRBAM-24-02051)

Murad Abu-Farsakh/Louisiana Department of Transportation and Development, MohammadAli Izadifar/Louisiana Department of Transportation and Development, Shengli Chen/Louisiana Department of Transportation and Development

3139

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 202B

Sustainable Alternative Binders for Flexible Pavements

Michael Elwardany, FAMU-FSU College of Engineering, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement, Subcommittee on Sustainable and Resilient Pavements

As the flexible pavement community redoubles effort towards increasing sustainability and reducing carbon emissions surrounding production of asphalt pavement, focus has increased on the use of sustainable alternative binders, in which conventional petroleum-based bitumen is partially or fully replaced by lower carbon alternatives. In this session, recent and past research, developments, and implementations of such material will be reviewed by a panel of expert presenters from various parts of the industry, with an aim to synthesize and present key technical findings from recent events on this topic.

Ten Years of Alternative Binders Discussions: Introduction and Highlights from 2012 Workshop (P24-20698)

Robert Kluttz/Kraton Polymers

International Efforts to Promote Alternative Binders: Takeaways from the Association of Asphalt Paving Technologists Webinar and Beyond (P24-20700)

Lorena Garcia Cucalon/Kraton Polymers

Lessons Learned at the Industry Level from Petersen Asphalt Research Conference (P24-20702)

Jean-Pascal Planche/Western Research Institute, Yogesh Kumbarger/Western Research Institute

A World of Biomaterials: Challenges and Perspective (P24-20704)

Kamilla Vasconcelos/Universidade de Sao Paulo

3140

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 102A

Advances in Cementitious Materials and Concretes

Nishant Garg, University of Illinois, Urbana-Champaign, presiding

Christopher Jones, Kansas State University, presiding

Sponsored By Standing Committee on Advanced Concrete Materials and Characterization

Engineering Performance, Economic, and Carbon Footprint Analysis of Biochar-Incorporated Concrete with Natural and Recycled Aggregate (TRBAM-24-05727)

Islam Orynbassarov/University of Nebraska, Lincoln, Temirlan Barissov/University of Nebraska, Lincoln, Seunghee Kim/University of Nebraska, Lincoln, Jiong Hu/University of Nebraska, Lincoln

Incorporation of Cellulose Nanocrystals Synthesized from Rice Husk in Engineered Cementitious Composites (TRBAM-24-04104)

Marwa Hassan/Louisiana State University, Andrea Gavilanes/Louisiana State University, Hassan Noorvand/Louisiana State University, Gabriel Arce/Louisiana State University, Tyson Rupnow/Louisiana State University

One-Part, Alkali-Activated Slag and Fly Ash for Low-Carbon Cementitious Mixtures: Mix Design and Sensitivity Analysis of Key Mix Design Parameters (TRBAM-24-03853)

In Kyu Jeon/Texas A&M University, College Station, Yong-Rak Kim/Texas A&M University, College Station, Dallas Little/Texas A&M University, College Station, Jong Suk Jung/Texas A&M University, College Station

Feasibility of Sprayable Engineered Cementitious Composites Using Natural Sand and a Hybrid Fiber System: The Effect of Silica Fume and Shrinkage Reducing Admixture (TRBAM-24-04307)

Gabriel Arce/Virginia Department of Transportation, Mary Sharifi/Virginia Department of Transportation

(continued)

Insights on the Effect of Sand and Fiber Type on the Properties of Metakaolin-Based Engineered Geopolymer Composites (TRBAM-24-03781)

Ruwa AbuFarsakh/Louisiana Department of Transportation and Development, Gabriel Arce/Louisiana Department of Transportation and Development, Hassan Noorvand/Louisiana Department of Transportation and Development, Sujata Subedi/Louisiana Department of Transportation and Development, Marwa Hassan/Louisiana Department of Transportation and Development

3141

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 101

Pavement Structural Evaluations: Traffic Speed Deflection Device Developments

Gabriel Bazi, pulsus, llc, presiding

Sponsored By Standing Committee on Pavement Structural Testing and Evaluation

Impact of Pavement Stiffness on Performance of Traffic Speed Deflection Measurements (TRBAM-24-01317)

Mahsa Beizaei/HVJ Associates, Inc., Sergio Rocha/HVJ Associates, Inc., Cesar Tirado/HVJ Associates, Inc., Soheil Nazarian/HVJ Associates, Inc., Gonzalo Rada/HVJ Associates, Inc.

The Evaluation of the Effect of Structural Condition on Surface Deterioration for Flexible Pavements Using Traffic Speed Deflection Device (TRBAM-24-02829)

Xiaoyang Jia/Tennessee Department of Transportation, Di Zhu/Tennessee Department of Transportation

Estimation of Concrete Pavement Joints' Load Transfer Efficiency from Traffic Speed Deflection Data by Deflection Velocity Profile Matching (TRBAM-24-03695)

Martin Scavone/ARRB Systems, Samer Katicha/ARRB Systems, Eugene Amarrh/ARRB Systems, Gerardo Flintsch/ARRB Systems

A Pilot Study to Incorporate Network-Level Structural Condition into Agency Pavement Management Practices (TRBAM-24-04823)

Angello Murekye/Virginia Polytechnic Institute, Samer Katicha/Virginia Polytechnic Institute, Ernesto Urbaez/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute, Brian Diefenderfer/Virginia Polytechnic Institute

3142

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 103B

Pollinator Habitat Conservation Along the Roadways and an Update on Saving At-Risk Bumblebees

Jennifer Hopwood, Xerces Society for Invertebrate Conservation, presiding

Dan Salas, Stantec, presiding

Caroline Hernandez, University of Illinois, Chicago, presiding

Sponsored By Standing Committee on Roadside Maintenance Operations, Standing Committee on Environmental Analysis and Ecology, Standing Committee on Landscape and Environmental Design

Jennifer Hopwood will share information on the Pollinator Habitat Conservation along Roadways project. NCHRP Project 25-59 looked at successful practices and lessons learned from states where pollinator species are listed; the results are 16 regional guides and associated tools to share this knowledge and to show how to implement integrated pollinator habitat programs. The results are show on a website. Dan Salas and Caroline Hernandez's presentation cover the achievements of the Monarch CCAA over the last 3 years and an overview of the proposed bumble bee agreement. Voluntary conservation, motivations for non-traditional conservation partners, and how to provide input or feedback on the proposed bumble bee agreement will be discussed.

Buzzworthy: An Update on the Nationwide Conservation Agreement for At-Risk Bumblebees (P24-20613)

Dan Salas/Stantec, Caroline Hernandez/University of Illinois, Chicago

Integration of Weed-Suppressive Bacteria with Herbicides to Reduce Exotic Annual Grasses and Wildfires on Roadsides (P24-20618)

Cathy Ford/Idaho Transportation Department

3143

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 209C

Pavement Management System Use and Cost Impacts

Phillip Clements, South Dakota Department of Transportation, presiding

Sponsored By Standing Committee on Pavement Management Systems

State of Practice for Pavement Management Systems Currently Being Used in Massachusetts (TRBAM-24-02185)

Walaa Mogawer/University of Massachusetts, Dartmouth, Alexander Austerman/University of Massachusetts, Dartmouth,

Kevin Stuart/University of Massachusetts, Dartmouth

Cost-Effective Pavement Management System for Municipal Road Networks (TRBAM-24-05411)

Christian Hecht/Rowan University, Surya Teja Swarna/Rowan University, Parth Bhavsar/Rowan University, Yusuf

Mehta/Rowan University, Taha Bouhsine/Rowan University

Application of Greenroads Rating System and Life-Cycle Assessment in Informing the State of the Practice in Sustainable Roadway Construction (TRBAM-24-06163)

Milad Zokaei Ashtiani/Carbon Leadership Forum, Stephen Muench/Carbon Leadership Forum

Utility Cut Impact Assessment and Fee Development Using Pavement Management System (TRBAM-24-06459)

Debaroti Ghosh/Nichols Consulting Engineers, Sharlan Dunn/Nichols Consulting Engineers, Lisa Petersen/Nichols Consulting Engineers

3144

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 206

Performance of Bridge Preservation Treatments

Michael Brown, Wiss, Janney, Elstner Associates, presiding

Sponsored By Standing Committee on Bridge Preservation, Standing Committee on Structures Maintenance

Bridge owners face continuing challenges in identifying the most effective methods for preserving the critical elements of their structures and quantifying the performance and benefits of those preservation actions. The session will comprise four papers that explore bridge preservation through periodic bridge washing of weathering steel elements, installation of link slabs for deck joint elimination, application of substructure coating systems and deployment of scour mitigation systems.

Data Supporting the Effectiveness of Bridge Washing on Bridge Performance (TRBAM-24-02016)

Jennifer McConnell/University of Delaware, Harry Shenton/University of Delaware, Tian Bai/University of Delaware

Evaluation of Link Slab Performance on Texas Highway Bridges (TRBAM-24-04363)

Andrew Pearson/Texas A&M University, Anna Birely/Texas A&M University, Matthew Yarnold/Texas A&M University,

Stefan Hurlbaas/Texas A&M University

Assessment of the Adhesion Performance of Coating Materials on Different Prepared Surfaces of Bridge Substructure (TRBAM-24-04684)

Anol Mukhopdhyay/Texas A&M Transportation Institute, Abhijit Mistri/Texas A&M Transportation Institute, Pranav

Pradeep Kumar/Texas A&M Transportation Institute

A-Jacks Scour Mitigation Case Studies (TRBAM-24-04743)

Matthew Stovall/Contech Engineered Solutions LLC, Chris Thornton/Contech Engineered Solutions LLC

3145

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 146B

Advancing Policy, Research, and Practice Around Air Travel for Passengers That Use Mobility Devices

Judy Shanley, Easterseals, presiding

Sponsored By Standing Committee on Accessible Transportation and Mobility, Standing Committee on Aviation Administration and Policy

Proposed federal regulations pave the way for air travel reforms for individuals with disabilities, including the ability of passengers to bring mobility devices onboard an aircraft. Additionally, the passenger Bill of Rights under the Air Carrier Access Act provides a framework for legal protections. Research regarding wheelchair securement onboard an aircraft affirms the feasibility of wheelchair securement systems for passenger use in aircraft cabins (NAS, 2021). This forum is a discussion about passenger ability to stay in their wheelchairs as they travel. Presenters will share content about governmental actions and policy recommendations to build a research agenda around air travel for individuals with disabilities.

Presentation 1 (P24-21409)

Livaughn Chapman

Presentation 2 (P24-21410)

Michele Erwin/All Wheels Up

Presentation 3 (P24-21411)

Stephanie Lanza-Efthimiou/JetBlue Airways

Presentation 4 (P24-21412)

Jeff Gardlin/Federal Aviation Administration (FAA)

Presentation 5 (P24-21413)

Eliane Catilina/U.S. Department of Transportation Office of the Under Secretary for Policy

3146

CM (1.75)

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 146C

Electric Vehicle Incident Response: Strategies and Best Practices

Josie Gray, HNTB Corporation, presiding

Scott Parr, Embry Riddle Aeronautical University, presiding

Sponsored By Section - Transportation Systems Resilience, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Transportation Safety Management Systems, Standing Committee on Traffic Law Enforcement

As the adoption of electric vehicles (EVs) continues to grow worldwide, it is crucial for emergency responders, public safety officials, and the automotive industry to develop effective incident response strategies specific to EVs. While the benefits of EVs are clear, understanding how to respond effectively to incidents involving these vehicles is crucial. This session aims to provide valuable insights into traffic incident management for crashes involving electric vehicles, including passenger extraction considering high-voltage components and EV fire suppression.

National Transportation Safety Board Electric Vehicle Fire Investigations: An Update of Emergency Response Recommendations and Current Investigations (P24-20442)

Thomas Barth/National Transportation Safety Board (NTSB)

Fire Safety of Batteries and Electric Vehicles (P24-20448)

Adam Barowy/Fire Safety Research Institute

Navigating the Future of Transportation: Addressing Electric Vehicle Incidents and Automated Driving Challenges (P24-20871)

Patrick Durham/StacheD Training

3147



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 146A

Connecting Communities with Clean Mobility

Karl Simon, U.S. Environmental Protection Agency (EPA), presiding

Debs Schrimmer, U.S. Department of Energy (DOE), presiding

Sponsored By Section - Transportation and Sustainability, Standing Committee on Air Quality and Greenhouse Gas Mitigation, Standing Committee on Transportation Energy, Standing Committee on Alternative Fuels and Technologies

The U.S. National Blueprint for Transportation Decarbonization is a landmark strategy for cutting all GHG emissions from the transportation sector by 2050. In order to achieve this we need to avoid/reduce travel through climate-smart land use decisions, shift travel modes toward shared and active transportation, and improve technology through cleaner and more efficient vehicles and fuel. Shifting travel modes is one of the more challenging strategies, necessitating behavior change while working in geographies built to accommodate the personal vehicle over all other modes. This session will focus on mode shift projects that have worked to provide clean mobility services to increase access to clean transportation in an equitable manner.

Update on the National Blueprint for Transportation Decarbonization (P24-20795)

Karl Simon/U.S. Environmental Protection Agency (EPA)

California Air Resources Board Perspective (P24-20796)

Sydney Vergis/California Air Resources Board (CARB)

AJW Perspective (P24-21416)

Richard Kassel/AJW, Inc.

LA Metro Perspective (P24-20798)

Avital Shavit/Los Angeles County Transportation Authority (LACMTA)

Federal Transit Administration Perspective (P24-20797)

Christina Gikakis/Federal Transit Administration (FTA)

3148

CM (1.75)

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 140

Emerging Topics at the Housing–Development–Transportation Nexus

Michael Lawrence, Jack Faucett Associates, Inc., presiding

Sponsored By Standing Committee on Economic Development and Land Use

This session presents papers that investigate the interrelations between housing location, travel decisions, and transportation costs. Empirical evidence from national and international case studies on the topics of land use policies, COVID-19 pandemic responses, combined housing and transportation costs, and increasing levels of vehicle automation illustrate the inter-connectivity of the housing-transportation nexus.

What Local Travel Behavior and Land Use Say About the 15–30-Minute City in Montreal, Canada

(TRBAM-24-01868)

Carolyn Birkenfeld/McGill University, Ahmed El-Geneidy/McGill University

Investigating the Changes in Job and Housing Locations During COVID-19 Using Smart Card Data

(TRBAM-24-02699)

yu wang/University of Leeds, Charisma Choudhury/University of Leeds, Thomas Hancock/University of Leeds, Yacan Wang/University of Leeds

Choice or Constraint?: A Locally Tailored Assessment of Housing and Transportation Costs in Central Texas

(TRBAM-24-04085)

Minyu Situ/University of Texas, Austin, Alex Karner/University of Texas, Austin

Mobility, Energy, and Land Use Impacts of the Adoption of Connected and Automated Vehicle Technologies

(TRBAM-24-04458)

Joshua Auld/Argonne National Laboratory, Natalia Zuniga-Garcia/Argonne National Laboratory, Charbel Mansour/Argonne National Laboratory, Felipe de Souza/Argonne National Laboratory, Juan Caicedo/Argonne National Laboratory, Paul Waddell/Argonne National Laboratory

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 145B

Rail Transit Capacity and Quality of Service

P.S. Sriraj, University of Illinois, Chicago, presiding

Sponsored By Standing Committee on Transit Capacity and Quality of Service

This session includes four presentations on rail quality of service. Topics include rail passengers' willingness to wait and how to reduce their commuting stress, rail transit overcrowding, and service disruptions.

Modeling Urban Railway Passengers' Willingness to Wait Based on Latent Class Analysis (TRBAM-24-02086)

Hwan-Seung Lee/Myongji University, Ho-Chan Kwak/Myongji University, Eun-Seo Han/Myongji University, Ho-Chul Park/Myongji University

How to Relieve Rail Transit Passengers' Commuting Stress: A Shanghai Case Study (TRBAM-24-03730)

Haixiao Pan/Tongji University, Yuming Zheng/Tongji University, Xiyin Deng/Tongji University, Ailing Liu/Tongji University, Muzhao Yu/Tongji University

Joint Optimization of Metro Travel Reservation and Compartment Capacity Allocation for an Overcrowded Metro Line (TRBAM-24-00308)

qianhui Jiao/Southeast University, Jiulonghu, Qing Yu/Southeast University, Jiulonghu, Xuwu Chen/Southeast University, Jiulonghu, Long Cheng/Southeast University, Jiulonghu

Train Rescheduling of Urban Rail Transit Under Bi-Direction Disruptions in Operation Section (TRBAM-24-03130)

Yajie Sun/Beijing Jiaotong University, Weiteng Zhou/Beijing Jiaotong University, Yuxuan Long/Beijing Jiaotong University, Lei Qian/Beijing Jiaotong University, Baoming Han/Beijing Jiaotong University

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 145A

Unlocking Rural Mobility: A Journey Through Innovative Solutions Using Demand Response Services

Will Rodman, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Rural, Intercity Bus, and Specialized Transportation

Discover the future of rural mobility in our session focusing on transformative on-demand transit solutions. Delve into a case study from Nolanville, Texas, showcasing how on-demand transit benefits older adults and people with disabilities. Explore sustainable transportation through a timebank perspective, highlighting community resilience. Quantify the advantages of pre-booking in demand-responsive systems, enhancing efficiency and passenger experience. Witness a DRT-Bus intermodal rural transit powered by Mobility-as-a-Service, revolutionizing rural mobility. Join us for practical insights and innovative strategies reshaping rural transportation within a concise and enlightening session.

A DRT-Bus Intermodal Rural Transit Operation Powered by Mobility-as-a-Service Applying Differentiated Dispatch Priorities (TRBAM-24-00687)

Kwangho Baek/University of Minnesota, Twin Cities, Alireza Khani/University of Minnesota, Twin Cities

Quantifying the Benefits of Pre-Booking in Demand-Responsive Systems Based on Real-World Scenarios (TRBAM-24-01226)

Chengqi Lu/Technische Universität Berlin, Tilmann Schlenther/Technische Universität Berlin, Simon Meinhardt/Technische Universität Berlin, Kai Nagel/Technische Universität Berlin

A Sustainable Demand Responsive Transportation System from the Timebank Perspective (TRBAM-24-02250)

Jyun-Han Tsai/National Dong Hwa University, Cheng-Chieh Chen/National Dong Hwa University

The Benefits of On-Demand Transit for Older Adults and People with Disabilities in Rural America: A Natural Experiment Study in Nolanville, Texas (TRBAM-24-02840)

Andong Chen/Texas A&M University, Wei Li/Texas A&M University, Marcia Ory/Texas A&M University, Jiahe Bian/Texas A&M University, Muhammad Usman/Texas A&M University, Xinyue Ye/Texas A&M University, Bahar Dadashova/Texas A&M University, Xiao Li/Texas A&M University, Quan Sun/Texas A&M University, Muyang Li/Texas A&M University

3151

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 144C

Why Fund Passenger Rail?

James Zumwalt, David Evans and Associates, Inc., presiding

DJ Mitchell, DJM2 Consultancy LC, presiding

Sponsored By Standing Committee on Passenger Rail Transportation

This session aims to broaden the concept of passenger rail self-sufficiency beyond farebox revenue to include the ways it provides the most direct value. Congressman Seth Moulton's office will speak to the legislative intent of the BIL monies, and there will also be a look at how this money will hit the ground with a holistic attitude of how to spend it at the local level from the North Carolina Department of Transportation. A private industry view of how public investments make sense in private networks by BNSF Railway, and finally a review of private investments in passenger rail investments that make sense, and where public monies also came into play by Florida's Brightline.

The Need for Federal Passenger Rail Funding (P24-21579)

Seth Moulton/U.S. House of Representatives

Brightline's Private Passenger Rail Business Model (P24-21580)

Brian Kronberg/Brightline

North Carolina DOT's Approach to Passenger Rail Expansion: Maximizing Benefits for Local Communities (P24-21581)

Troy Creasy/North Carolina Department of Transportation

BNSF Public Passenger Rail Projects (P24-21582)

Richard Scott/BNSF Railway

3152

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 144AB

Resilience in the Track Structure

Stephen Wilk, Association of American Railroads, presiding

Arthur de O. Lima, University of Illinois, Urbana-Champaign, presiding

Sponsored By Standing Committee on Railroad Infrastructure Design and Maintenance

Railways continue to be subject to increased loading and environmental demands while the available time for maintenance is shorten by increased traffic. Proper resilience of the track infrastructure is critical in ensuring railway safety, improving reliability, and extending lifespans. This session will cover inspection systems, finite element modeling, case studies, and sensing techniques exploring topics related to measuring, improving, monitoring, and maintaining resiliency in the track structure.

Utilizing Vertical Track Deflection Data to Classify Track Component Condition (P24-21080)

Joseph Palese/University of Delaware, Christopher Hartsough

Implementing Distributed Acoustic Sensing with Existing Fiber Cables for Railroad Subsoil Characterization (TRBAM-24-04628)

Yuliang Zhou/Pennsylvania State University, Hai Huang/Pennsylvania State University, Anish Poudel/Pennsylvania State University

Recent Case Studies on Track Resiliency and Performance (P24-21081)

Yin Gao/MxV Rail

Enhancing Railroad Turnout Performance Through Geometry and Elasticity Optimization (P24-21082)

Jaeik Lee/University of Illinois, Urbana-Champaign

3154

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 147B

The Latest in Trucking Industry Research

Daniel Haake, Cambridge Systematics, presiding

Sponsored By Standing Committee on Trucking Industry Research

Come learn more about how trucking researchers are creating practice-ready research. In this session you will learn about Green Transportation, Distracted Driving, Truck Trip Chains, and Route Preferences.

Electrifying Middle-Mile Truck Fleets with Minimal Infrastructure Requirements (TRBAM-24-02861)

Xuanke Wu/University of South Carolina, Qi Luo/University of South Carolina, Yuche Chen/University of South Carolina

Are Truck Drivers More Distracted Than Other Drivers?: An Observational Study in New Jersey

(TRBAM-24-03712)

Ahmed Hasan/Rowan University, Deep Patel/Rowan University, Md. Arifuzzaman Nayeem/Rowan University, Mohammad Jalayer/Rowan University

Toward the Adoption of Green Freight Transport Practices in an Infant Market: An Analysis of Carriers'

Behavior on Electric Trucks (TRBAM-24-05040)

Nhu Nguyen/Kochi University of Technology, Hiroaki Nishiuchi/Kochi University of Technology, Nguyen Mai/Kochi University of Technology, Ngoc An/Kochi University of Technology, Tu Sua/Kochi University of Technology

Identify Trucks Route Choice Preference Among Long Haul, Medium Haul, and Short Haul (TRBAM-24-05431)

Zhengtao Qin/Tongji University, Quan Yuan/Tongji University, Tong Xiao/Tongji University

3155

CM (1.75)

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 143C

Hot Topics in Aviation System Planning

Jennifer Kim, Woolpert, Inc., presiding

Sponsored By Standing Committee on Aviation System Planning

This session will provide various perspectives on traditional state airport system planning, from an airport, state, and regional perspective. This session will share how an airport authority operates two different sized airports and the decision-making process in a multi-airport system; present a state agency's perspective on taking on a multi-phased statewide program that consolidates the state's aviation activities into one platform; shed light on how a regional authority leverages federal funding for regional system planning for airports across states; and provide an update on the Bipartisan Infrastructure Law (BIL) funding from the Federal Aviation Administration's perspective.

Airport Planning (P24-20847)

Mike Maynard/Jviation

State System Planning (P24-20755)

Joshua Duplantis/Louisiana Department of Transportation and Development

Regional System Planning (P24-20754)

Timothy Canan/Metropolitan Washington Council of Governments

3156

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 143AB

Airfield Pavements: Rehabilitation and Reconstruction Techniques, Warm Mix Asphalt with Reclaimed Asphalt Pavement, and a Deep Learning Model for Detecting Pavement Distress

George Nowak, Hatch, presiding

Sponsored By Standing Committee on Aircraft/Airport Compatibility

Full-Scale Pavement Evaluation of Airfield Runway Reconstruction with Full Depth Reclamation Technique (TRBAM-24-00877)

Victor Garcia/U.S. Army Engineer Research and Development Center, Jeremy Robinson/U.S. Army Engineer Research and Development Center, Ester Tseng/U.S. Army Engineer Research and Development Center, Jeb Tingle/U.S. Army Engineer Research and Development Center

(continued)

Laboratory and Field Performance: An Evaluation of Cracking of Airfield Warm Mix Asphalts with Recycled Asphalt Pavement at the National Airport Pavement and Materials Research Center (TRBAM-24-05079)

Dario Batioja Alvarez/Applied Research Associates, Inc., Hasan Kazmee/Applied Research Associates, Inc., Navneet Garg/Applied Research Associates, Inc.

ACRP Graduate Research Award: Impact of Sea Level Rise Induced Hazards on Airfield Pavement Performance (TRBAM-24-03061)

Xiao Chen/Rutgers University, Hao Wang/Rutgers University

ACRP Graduate Research Award Paper: Cold Recycling Technology for Airfield Pavement Rehabilitation Practices (TRBAM-24-04816)

Saed Aker/Arizona State University, Hasan Ozer/Arizona State University

A Weakly-Supervised Deep Learning Model for End-to-End Detection of Airfield Pavement Distress (TRBAM-24-06248)

Liming Liu/Tongji University, Hongren Gong/Tongji University, Lin Cong/Tongji University, Zefeng Tao/Tongji University

3157

Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, 147A

Inland Waterways Resiliency and Impact on Agriculture Supply Chains

Mark Berndt, Quetica, LLC, presiding

Sponsored By Standing Committee on Inland Water Transportation, Standing Committee on Agriculture and Food Transportation

The inland waterway system is critical to domestic and national supply chains; it provides a cost-effective conduit for agricultural commodities to be distributed across the globe. In recent years the inland waterway system and agricultural supply chains have faced challenges prompted by climate change, infrastructure failures, and other disruptions. This panel will provide insights into future system resiliency from a variety of key perspectives.

Carrier Perspective on Inland Water System Resiliency (P24-20738)

Martin Hettel/American Commercial Lines, Inc.

An Update on the Effects of Recent Extreme Weather Conditions on Barge Grain Movements and Freight Rates (P24-20740)

Richard Henderson/U.S. Department of Agriculture (USDA)

How Inland Waterway Investments Can Help Support a Resilient Agricultural Supply Chain (P24-20739)

Eric Singley/U.S. Army Corps of Engineers (USACE)

Resilience Considerations at the Intersection of Transportation and Agriculture: Examples from the U.S. Inland Waterway System (P24-21120)

Janey Camp/University of Memphis

Perspectives on the Upcoming Water Resources Development Act Reauthorization (P24-21121)

Thomas Lynch/The Fertilizer Institute

3158



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Ballroom A

State DOT CEO Roundtable: Envisioning and Realizing the Next Era of America's Transportation Infrastructure

Carlos Bracerias, Utah Department of Transportation, presiding

Sponsored By Executive Committee

This session will feature the continuing efforts taking place under NCHRP's "Collective and Individual Actions to Envision and Realize the Next Era of America's Transportation Infrastructure." The vision seeks to create a transportation system focused on connecting communities, moving people and goods, and meeting customer needs at all scales—from local to global—delivered as a partnership between state DOTs and other public, private, and civic organizations. Specifically, the session will examine the second phase of this major state DOT effort by focusing on pilots of the proposed "moonshot" concepts and the next steps ahead.

Panel Discussion (P24-21193)

Tracy Larkin Thomason/Nevada Department of Transportation, Nancy Daubenger/Minnesota Department of Transportation, Marc Williams/Texas Department of Transportation, Bradley Wiefelich/Michigan Department of Transportation

3159



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Pedestrian Safety and Behavior

Patrick Singleton, Utah State University, presiding

Sponsored By Standing Committee on Pedestrians

Pedestrian safety research including analysis of crash trends over time, nighttime conditions, and disparities in safety.

Darkness and Death in the United States: Walking Distances Across the Nation by Time of Day and Time of Year (TRBAM-24-00590) - B696

Maithreyi Vellimana/University of Texas, Austin, Kara Kockelman/University of Texas, Austin

Safety Evaluation of Alternatives for Installing Pedestrian Signals Under Side Street Green Operation (TRBAM-24-02391) - B697

Olin Green/University of Connecticut, John Ivan/University of Connecticut, Marisa Auguste/University of Connecticut, Kai Wang/University of Connecticut

Nighttime Pedestrian Safety in Disadvantaged Communities: Application of Artificial Intelligence Techniques (TRBAM-24-02574) - B698

Sheikh Usman/The University of Tennessee Knoxville, Asad Khattak/The University of Tennessee Knoxville, A. Latif Patwary/The University of Tennessee Knoxville

Factors Associated with Pedestrian Fatalities in Darkness, 2010–2020 (TRBAM-24-02989) - B701

Robert Schneider/University of Wisconsin, Milwaukee, Rebecca Sanders/University of Wisconsin, Milwaukee, Bryan Walter/University of Wisconsin, Milwaukee, Natalie Marshall/University of Wisconsin, Milwaukee, William Henning/University of Wisconsin, Milwaukee

Uncovering Patterns of Road Safety Perception in Child Pedestrians: A Latent Class Analysis Perspective (TRBAM-24-03436) - B699

Bivina Rajendran/Maulana Azad National Institute of Technology Bhopal, Neelima Vijay/Maulana Azad National Institute of Technology Bhopal, Siddhartha Rokade/Maulana Azad National Institute of Technology Bhopal

Assessment of the Safety Benefits of Heads Up Display Warning Under Pedestrian Crossing Event in the Connected Environment (TRBAM-24-03626) - B700

Yu Zhang/Beijing University of Technology, Yang Bian/Beijing University of Technology, Xiaohua Zhao/Beijing University of Technology, Xuewei Li/Beijing University of Technology

Temporal Changes in the Crash Trends in Florida During the COVID-19 Pandemic: The Case of Pedestrian Related Crashes at Intersections (TRBAM-24-04322) - B703

Natalia Barbour/University of Central Florida College of Engineering and Computer Science, Mohamed Abdel-Aty/University of Central Florida College of Engineering and Computer Science, Samgyu Yang/University of Central Florida College of Engineering and Computer Science, Jaeyoung Lee/University of Central Florida College of Engineering and Computer Science

Enhancing Pedestrian Safety Near Bus Stops: Integrating Statistical and Machine Learning Approaches (TRBAM-24-04701) - B704

Mohammad Anis/Texas A&M University, Srinivas Geedipally/Texas A&M University

How to Solve Urban Pedestrian Safety Risks: Start with Arterials (TRBAM-24-06211) - B705

Saurav Parajuli/University of Tennessee, Knoxville, Christopher Cherry/University of Tennessee, Knoxville

Addressing Pedestrian Safety at Night Through Safe Roads and Safe Speeds: Results from a Comprehensive Literature Review (TRBAM-24-04928) - B702

Rebecca Sanders/Safe Streets Research & Consulting, Robert Schneider/Safe Streets Research & Consulting, Bryan Walter/Safe Streets Research & Consulting, Natalie Marshall/Safe Streets Research & Consulting, William Henning/Safe Streets Research & Consulting

Impact of Socio-Demographic and Neighborhood Characteristics on Safety Perception of Active Mobility in Accra, Ghana (TRBAM-24-05981) - B706

Sunday Okafor/University of Alabama, Tuscaloosa, Emmanuel Adanu/University of Alabama, Tuscaloosa, Jeffrey Bullard/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

(continued)

Safety Analysis of the Pedestrian Street-Crossing Behavior Distracted by Mobile Phone Usage: Evidence from Field Observation in Nanjing (TRBAM-24-03591) - B707

Mingyu Hou/Southeast University, Chenzhu Wang/Southeast University, Jiahao Shen/Southeast University, Boran Zhang/Southeast University, Haoyang Li/Southeast University, Said M Easa/Southeast University, Jianchuan Cheng/Southeast University

Pedestrian Crash Injury Patterns in Recent 6 Years: A Comparative Study of Children and Non-Children in CRSS (TRBAM-24-05163) - B708

Zifei Wang/University of Michigan, Huizhong Guo/University of Michigan, Brian Lin/University of Michigan, Fred Feng/University of Michigan, Feng Zhou/University of Michigan, Rini Sherony/University of Michigan, Shan Bao/University of Michigan

Association of Intersection Geometric and Crash-Related Attributes with Elderly Pedestrian-Involved Crashes (TRBAM-24-06095) - B709

Ming-heng Wang/Taiwan Police College

3160



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Automation, Technology, and Pedestrian Interactions

Priyanka Alluri, Florida International University, presiding

Sponsored By Standing Committee on Pedestrians, Subcommittee on Pedestrian Research, Subcommittee on Pedestrian and Autonomous Vehicle Interactions

Autonomy Bias: A Deception Experiment to Isolate the Effect of Vehicle Autonomy on Perceptions of Pedestrian Comfort and Safety (TRBAM-24-00567) - B710

Gurdiljot Gill/University of British Columbia, Alexander Bigazzi/University of British Columbia, Jordi Honey-Rosés/University of British Columbia, Emily Bardutz/University of British Columbia

Will Automated Vehicles Encourage More Jaywalking?: Results from a Stated Preference Experiment (TRBAM-24-00577) - B711

Xiaoxia Dong/University of Pennsylvania, Erick Guerra/University of Pennsylvania, Ricardo Daziano/University of Pennsylvania

Are You Distracted and Stressed Waiting on the Sidewalk to Cross?: Application of Immersive Virtual Reality, Autonomous Vehicles, and Artificial Intelligence (TRBAM-24-02353) - B712

Anae Sobhani/Tongji University, Ziwei Dong/Tongji University, Ting Fu/Tongji University, Behnaz Raouf Hassanzadeh/Tongji University, Julia Sendula/Tongji University, Amir Mahdi Khabooshani/Tongji University

Impact of Slip Lanes on Pedestrian Safety at Roundabouts Considering Autonomous Vehicles (TRBAM-24-02362) - B713

Norran Novat/Western Michigan University, Valerian Kwigizile/Western Michigan University, Jun-Seok Oh/Western Michigan University

Autonomous Intelligent Anomaly Detection of Tactile Paving Using Quadrupedal Robot (TRBAM-24-03852) - B714

Lunpeng Li/Tongji University, Yishun Li/Tongji University, Chenglong Liu/Tongji University, Difei Wu/Tongji University, Yuchuan Du/Tongji University

Transformer-Based Model for Predicting Trajectories in Autonomous Vehicle–Pedestrian Conflicts: A Proactive Approach to Road Safety (TRBAM-24-05520) - B716

Maged Shoman/University of British Columbia, Tarek Sayed/University of British Columbia, Suliman Gargoum/University of British Columbia

OASIS: Automated Assessment of Urban Pedestrian Paths at Scale (TRBAM-24-05606) - B715

Yuxiang Zhang/University of Washington, Suresh Devalapalli/University of Washington, Sachin Mehta/University of Washington, Cole Anderson/University of Washington, Anat Caspi/University of Washington

Assessing Vehicle–Pedestrian Interaction Behavior in Different Environments Using Markov Game Modeling (TRBAM-24-00693) - B717

Gabriel Lanzaro/University of British Columbia, Tarek Sayed/University of British Columbia

Predictive Models for Understanding Vehicle–Pedestrian Interactions in Shared Spaces (TRBAM-24-00768) - B718

Eleni Mantouka/National Technical University of Athens (NTUA), Emmanouil Kampitakis/National Technical University of Athens (NTUA), Panagiotis Fafoutellis/National Technical University of Athens (NTUA), Eleni Vlahogianni/National Technical University of Athens (NTUA)

(continued)

Assessing the Role of Time Pressure and Compliance Behavior in Risk Associated with Pedestrian Crashes: A Simulator-Based Approach (TRBAM-24-01164) - B722

Apurwa Dhoke/Indian Institute of Technology, Roorkee, Pushpa Choudhary/Indian Institute of Technology, Roorkee

Variations in Attention and Preferences While Walking on an Urban Street Open or Closed to Vehicles in Staunton, Virginia (TRBAM-24-01324) - B720

Carreen de Cardenas/University of Virginia, Austin Angulo/University of Virginia, Andrea Saglio/University of Virginia, Ben Gering/University of Virginia, James Barnes/University of Virginia, Luca Cian/University of Virginia, Andrew Mondschein/University of Virginia, T. Donna Chen/University of Virginia

A Following and Overtaking Behavior Model and Measure of Pedestrian System Order (TRBAM-24-01751) - B719

Bilu Li/Tsinghua University, Zheng Li/Tsinghua University, Rui Zhou/Tsinghua University, Shifei Shen/Tsinghua University

Prediction of Vehicular Yielding Intention While Approaching a Pedestrian Crosswalk (TRBAM-24-01890) - B724

Kaliprasana Muduli/Indian Institute of Technology, Roorkee, Indrajit Ghosh/Indian Institute of Technology, Roorkee

Deep Reinforcement Learning–Based Pedestrian Trajectory Generation: Incorporating Social Context (TRBAM-24-03593) - B721

Syed Mostaquim Ali/University of Western Ontario, Saumya Gupta/University of Western Ontario, Mohamed Zaki/University of Western Ontario

Multimodal Pedestrian Trajectory Prediction Method with Dynamic Iterative Mechanism: Considering the Interaction of Pedestrians, Vehicles, and Environment (TRBAM-24-03899) - B726

Zhuping Zhou/NanJing University of Science and Technology, Changji Yuan/NanJing University of Science and Technology, Ruiyao Tang/NanJing University of Science and Technology

A Dependent Hidden Markov Model-Based Approach for Pedestrian Crossing Intention Prediction: Considering Multivariate Interactions (TRBAM-24-03901) - B727

Zhuping Zhou/NanJing University of Science and Technology, Zixu Wang/NanJing University of Science and Technology, Yang Liu/NanJing University of Science and Technology

Evaluating Safety and Compliance of Pedestrian Crossings in Rural Contexts: A Before and After Study of Rectangular Rapid Flash Beacons and LED-Embedded Signs (TRBAM-24-04417) - B725

Parsa Pezeshknejad/University of Vermont, Dana Rowangould/University of Vermont

A Comparison of Visual Scanning Behavior of Pedestrians at Signalized and Unsignalized Intersections Through an Outdoor Study Paradigm (TRBAM-24-06210) - B723

Kudurupaka Krishna/Indian Institute of Technology, Roorkee, Pushpa Choudhary/Indian Institute of Technology, Roorkee

Identifying Active Transport from Spontaneous Data Source with Natural Language Processing (TRBAM-24-00046) - B728

Teng Li/Monash University, Zhuo Chen/Monash University, Alexa Delbosc/Monash University

Modeling Adjacent Levels of Pedestrian–Vehicle Conflict Severity at Fixed-Cycle Intersections Using Computer Vision (TRBAM-24-05236) - B730

Panick Kalambay/University of North Carolina, Charlotte, Srinivas Pulugurtha/University of North Carolina, Charlotte

Modeling Pedestrian Near-Crash Events at Rectangular Rapid Flashing Beacons Controlled Intersection Using Video Analytics and Long Short-Term Memory Neural Networks (TRBAM-24-06029) - B731

Panick Kalambay/University of North Carolina, Charlotte, Srinivas Pulugurtha/University of North Carolina, Charlotte

Risk-Informed Pedestrian Crossing Intention Prediction: A Risk Imaging and Joint Transformer Approach (TRBAM-24-05077) - B729

Bowen Liu/Southeast University, Zhibin Li/Southeast University, Meng Li/Southeast University, wei zhou/Southeast University, Di Han/Southeast University

3161



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Pedestrian Accessibility, Walkability, and Design

Kevin Manaugh, McGill University, presiding

Sponsored By Standing Committee on Pedestrians

Weekend Transit and Walking Accessibility to Social, Cultural, and Recreational Destinations: A GIS Analysis of Knoxville, Tennessee (TRBAM-24-00099) - B732

Eilish Bennett/University of Tennessee, Knoxville, Jing Guo/University of Tennessee, Knoxville, Candace

Brakewood/University of Tennessee, Knoxville

Investigating Utility-Based Walking Accessibility: Equity Across Different User Groups (TRBAM-24-01690) - B734

Jiaqi Liu/Hong Kong University, Zheng Liang/Hong Kong University, Yue Huai/Hong Kong University, Hong Lo/Hong Kong University

(continued)

A Novel Link-Based Approach for Measuring Walking Accessibility (TRBAM-24-01713) - B735

Zheng Liang/Hong Kong University, Hong Lo/Hong Kong University, Ka NG/Hong Kong University, Kay Axhausen/Hong Kong University

A Multiple Membership, Multi-Level Model for the Relationship Between Walking Accessibility and Pedestrian Safety of Metro System (TRBAM-24-02716) - B736

Manman Zhu/Hong Kong Polytechnic University, N.N. Sze/Hong Kong Polytechnic University, Haojie Li/Hong Kong Polytechnic University

A New Approach of Assessing LOS at Signalized Midblock Crosswalks (TRBAM-24-00962) - B737

Sandeep Manthirikul/Indian Institute of Technology, Roorkee, Udit Jain/Indian Institute of Technology, Roorkee, Ankit Kathuria/Indian Institute of Technology, Roorkee

A 10-Year Study of Changes in Pedestrian Activities (2013–2022) in the City of Sydney, Australia: From Pre-Pandemic Normal to Post-Pandemic Recovery (TRBAM-24-01412) - B738

Fatemeh Nourmohammadi/University of New South Wales, Zahra Nourmohammadi/University of New South Wales, Tanapon Lilasathapornkit/University of New South Wales, Meead Saberi/University of New South Wales

A Walker's Paradise Is Not a Driver's Hell: Evaluating the Causal Effect of Temporary Road Pedestrianization on Traffic Conditions of Surrounding Roads (TRBAM-24-01672) - B747

Giancarlos Parady/University of Tokyo, Makoto Chikaraishi/University of Tokyo, Yuki Oyama/University of Tokyo

A Joint Model Approach to Estimate Pedestrian Exposure Accounting for Expected Pedestrian Activity Levels (TRBAM-24-01956) - B733

Jakob Wiegand/Kittelson & Associates, Inc., Asif Mahmud/Kittelson & Associates, Inc., Vikash Gayah/Kittelson & Associates, Inc.

Perceived Barriers Toward Transportation Walking for Mississippi Adults (TRBAM-24-02622) - B755

Yuanyuan Zhang/University of Southern Mississippi, Zikai Zhou/University of Southern Mississippi

Overcoming Barriers by Businesses to Road Pedestrianisation in Singapore (TRBAM-24-03325) - B739

Wong Jie/Singapore University of Technology and Design, Ruth Poh/Singapore University of Technology and Design, Koh Wee/Singapore University of Technology and Design, Xin Yang/Singapore University of Technology and Design, Samuel Chng/Singapore University of Technology and Design

Installing and Maintaining Sidewalks: A Review of 12 Municipalities' Policies and Practices (TRBAM-24-04290) - B742

Karin Goins/UMass Chan Medical School, Katherine Kraft/UMass Chan Medical School, Rebecca Bucklin/UMass Chan Medical School, Eleni Christofa/UMass Chan Medical School, Yochai Eisenberg/UMass Chan Medical School, Kurt Heischmidt/UMass Chan Medical School, Christina McDonough/UMass Chan Medical School, Christiaan Abildso/UMass Chan Medical School

Reliability Analysis of Pedestrian Crossing Sight Distance at Two-Way Stop-Control Intersections (TRBAM-24-04378) - B740

Sadia Karim/Toronto Metropolitan University, Said M Easa/Toronto Metropolitan University, Shrinivas Arkatkar/Toronto Metropolitan University, Ninad Gore/Toronto Metropolitan University

Pedestrian Impedance Factors and Americans with Disabilities Act Mobility Mode Shortest Path Routing in ST-CTN/G-MAP (TRBAM-24-04906) - B744

Randall Guensler/Georgia Institute of Technology, Angshuman Guin/Georgia Institute of Technology, Jorge A. Laval/Georgia Institute of Technology, Natalie Smusz-Mengelkoch/Georgia Institute of Technology, Siddharth Sivakumar/Georgia Institute of Technology, Tanner Passmore/Georgia Institute of Technology, Fizzy Fan/Georgia Institute of Technology, Hongyu Lu/Georgia Institute of Technology

Under the Influence of Parents: A Longitudinal Study of Children's Walking (TRBAM-24-04982) - B743

Kyuri Kim/Portland State University, Jennifer Dill/Portland State University

Designing Pedestrian Zones Within City Center Networks Considering Policy Objective Trade-Offs (TRBAM-24-05011) - B748

Yuki Oyama/Shibaura Institute of Technology, Soichiro Murakami/Shibaura Institute of Technology, Makoto Chikaraishi/Shibaura Institute of Technology, Giancarlos Parady/Shibaura Institute of Technology

Improving Pedestrian Mobility at Continuous Flow Intersections (TRBAM-24-05558) - B745

Ishtiaq Ahmed/McCormick Taylor, Guangchuan Yang/McCormick Taylor, Christopher Cunningham/McCormick Taylor, Shannon Warchol/McCormick Taylor

Where to Implement Leading Pedestrian Intervals: An Examination of Turning Vehicle–Pedestrian Crashes at Signalized Intersections (TRBAM-24-05971) - B749

Faria Raha/Northern Arizona University, Anthony Eschen/Northern Arizona University, Steven Gehrke/Northern Arizona University, Edward Smaglik/Northern Arizona University, Brendan Russo/Northern Arizona University

An Analysis of Walking Frequency Before and After the Pandemic (TRBAM-24-05715) - B750

Hyunjun Hwang/University of Texas, Austin, Angela Haddad/University of Texas, Austin, Irfan Batur/University of Texas, Austin, Shobhit Saxena/University of Texas, Austin, Ram Pendyala/University of Texas, Austin, Chandra Bhat/University of Texas, Austin

Modeling Pedestrian Route Choice in Touristic Area Using Prism-Constrained Reinforcement Learning Models: A Case Study of Dogo District (TRBAM-24-06068) - B752

Takashi Owaki/Toyota Central R&D Labs., Inc., Takayoshi Yoshimura/Toyota Central R&D Labs., Inc., Risa Kobayashi/Toyota Central R&D Labs., Inc., Eiji Hato/Toyota Central R&D Labs., Inc.

Navigating Urban Access: Examining the 15-Minute City Concept in Chicago (TRBAM-24-06455) - B753

Fatemeh Janatabadi/George Mason University, Nazanin Morshedlou/George Mason University, Alireza Ermagun/George Mason University

Outcome-Based Equity Analysis for Sidewalk and Trail Programming (TRBAM-24-04168) - B754

Laura Ghosh/Loudoun County Transportation, Danielle McCray/Loudoun County Transportation, Jakob Youngblood/Loudoun County Transportation, Katelyn Widness/Loudoun County Transportation, Eloisa Thring/Loudoun County Transportation

3162



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Vehicle-Highway Automation, Part 1 (Part 2, Session 3229; Part 3, Session 4028)

Kakan Dey, Michigan State University, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation

Assessing Readiness of Self-Driving Vehicles (TRBAM-24-00397) - B655

Mary Cummings/George Mason University

Integrating Vehicle Trajectory Planning and Arterial Traffic Management to Facilitate Eco-Approach and Departure Deployment (P24-21076) - B656

Hao Liu/University of California, Berkeley, Alex Kurzhanskiy/University of California, Berkeley, Wanshi Hong/Lawrence Berkeley National Laboratory, Xiao-Yun Lu/University of California, Berkeley

Distributed Trajectory Optimization of Connected and Automated Vehicles at Signal-Free Intersections (TRBAM-24-00220) - B781

Francesco Vitale/Aalto University, Claudio Roncoli/Aalto University

Is a Robot Car Still a Car?: Consumer Perceptions of Fully Automated Vehicles and Automobility in Canada (TRBAM-24-00232) - B772

Viviane Gauer/Simon Fraser University, Jonn Aksen/Simon Fraser University, Zoe Long/Simon Fraser University

The OpenCDA Open-Source Ecosystem for Cooperative Driving Automation Research (TRBAM-24-02225) - B657

Runsheng Xu/University of California, Los Angeles, Hao Xiang/University of California, Los Angeles, Xu Han/University of California, Los Angeles, Xin Xia/University of California, Los Angeles, Zonglin Meng/University of California, Los Angeles, Chia-Ju Chen/University of California, Los Angeles, Camila Correa-Jullian/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

A Novel Pedestrian Collision Avoidance Strategy for Autonomous Vehicles: Considering the Multimodal Pedestrian Trajectory and Spatio-Temporal Potential Risk (TRBAM-24-03882) - B686

Zhuping Zhou/NanJing University of Science and Technology, Zhenlin Yue/NanJing University of Science and Technology, Molan Ouyang/NanJing University of Science and Technology

The Potential Impact on Highway Traffic Flow of Regulatory Constraints on Automated Vehicle Lane Changing (TRBAM-24-04213) - B653

Konstantinos Mattas/JRC: European Commission Joint Research Centre, Giovanni Albano/JRC: European Commission Joint Research Centre, Michail Makridis/JRC: European Commission Joint Research Centre, Sandor Vass/JRC: European Commission Joint Research Centre, Riccardo Donà/JRC: European Commission Joint Research Centre, Biagio Ciuffo/JRC: European Commission Joint Research Centre

Rear-End Collision Risk Estimation for Autonomous Vehicles Under Mixed Traffic Scenario Using Real-World Perception Data (TRBAM-24-04406) - B659

Md Tanvir Ashraf/Michigan State University, Kakan Dey/Michigan State University

Are Fully Automated Vehicles a “Gift of Time” or “Flaming Ball of Wreckage”? Investigating Consumer Perceptions of Benefits and Concerns (TRBAM-24-04764) - B782

Viviane Gauer/Simon Fraser University, Jonn Aksen/Simon Fraser University, Zoe Long/Simon Fraser University

(continued)

A Novel, Nonlinear, Car-Following Model for Automated Vehicle: Development, Calibration, and Validation (TRBAM-24-04804) - B662

Ke Ma/University of Wisconsin, Madison, Zhitong Huang/University of Wisconsin, Madison, Chengyuan Ma/University of Wisconsin, Madison, Peng Zhang/University of Wisconsin, Madison, Xiaopeng (Shaw) Li/University of Wisconsin, Madison, Amir Ghiasi/University of Wisconsin, Madison, John Hourdos/University of Wisconsin, Madison, Rachel James/University of Wisconsin, Madison, Gene McHale/University of Wisconsin, Madison

Toward a Large-Scale Fused and Labeled Data Set of Human Pose While Interacting with Robots in Shared Urban Areas (TRBAM-24-05162) - B668

Elahe Sherafat/Toronto Metropolitan University, Bilal Farooq/Toronto Metropolitan University

Initial Indications of Safety of Driverless Automated Driving Systems (TRBAM-24-05951) - B669

Jiayu Chen/University of California, Berkeley, Steven Shladover/University of California, Berkeley

GaVa: Graph-Attention Mechanism and Vision-Aware Trajectory Prediction for Autonomous Driving (TRBAM-24-06110) - B677

Shangqian Liu/University of Macau, Haicheng Liao/University of Macau, Huanming Shen/University of Macau, Zhenning Li/University of Macau, Xuesong Wang/University of Macau, Ziyuan Pu/University of Macau, Shengbo Li/University of Macau, Chengzhong Xu/University of Macau

Advanced Driver Assistance Systems and Automated Driving System Modeling Gaps (TRBAM-24-06190) - B652

Qianwen Li/University of Wisconsin, Madison, Xiaopeng (Shaw) Li/University of Wisconsin, Madison, Keke Long/University of Wisconsin, Madison, Ke Ma/University of Wisconsin, Madison, Zhitong Huang/University of Wisconsin, Madison, Rachel James/University of Wisconsin, Madison, Amir Ghiasi/University of Wisconsin, Madison, Gene McHale/University of Wisconsin, Madison, John Hourdos/University of Wisconsin, Madison

Pilot Low-Speed Automated Driving System Performance Compared to the European Type-Approval Regulation Requirements for Automated Driving Systems (TRBAM-24-02195) - B663

Sandor Vass/European Commission Joint Research Centre, Riccardo Donà/European Commission Joint Research Centre, Konstantinos Mattas/European Commission Joint Research Centre, Bálint Tóth/European Commission Joint Research Centre, Áron Heé/European Commission Joint Research Centre, Giulia Morandin/European Commission Joint Research Centre, Maria Cristina Galassi/European Commission Joint Research Centre, Biagio Ciuffo/European Commission Joint Research Centre

Advancing Crash Investigation with Connected and Automated Vehicle Data: Insights from a Survey of Law Enforcement (TRBAM-24-02430) - B784

Meredith King/Arcadis, Muhammad Adeel/Arcadis, Sheikh Usman/Arcadis, Asad Khattak/Arcadis

Media Representations of Automated Vehicle Crashes: Analyzing Crash Narratives Through Text Mining (TRBAM-24-02469) - B774

Meredith King/Arcadis, Asad Khattak/Arcadis

Autocorrelation-Based Platooning Intensity for Connected and Autonomous Vehicles in a Mixed Traffic Environment (TRBAM-24-02944) - B658

Peilin Zhao/Nanyang Technological University, Yiik Diew Wong/Nanyang Technological University, Feng Zhu/Nanyang Technological University

Proactive Longitudinal Control of Connected and Autonomous Vehicles with Lane-Change Management for Human-Driven Vehicles (TRBAM-24-00540) - B783

Yongyang Liu/Georgia Institute of Technology, Anye Zhou/Georgia Institute of Technology, Yu Wang/Georgia Institute of Technology, Srinivas Peeta/Georgia Institute of Technology

Trajectory Shaper: A Backup Solution for Cooperative Platooning Control (TRBAM-24-00835) - B780

Anye Zhou/Oak Ridge National Laboratory, Zejiang Wang/Oak Ridge National Laboratory, Adian Cook/Oak Ridge National Laboratory, Srinivas Peeta/Oak Ridge National Laboratory

Optimal Infrastructure Investment Planning for Autonomous Road Vehicles (TRBAM-24-00946) - B773

Sahar Dehghan/Isfahan University of Technology, Ahmadreza Talebian/Isfahan University of Technology, Sabyasachee Mishra/Isfahan University of Technology

Radar Enlighten the Dark: Enhancing Low-Visibility Perception for Automated Vehicles with Camera-Radar Fusion (TRBAM-24-01096) - B649

Can Cui/Purdue University, Yunsheng Ma/Purdue University, Juanwu Lu/Purdue University, Ziran Wang/Purdue University

Multi-Anticipation Control of Connected and Automated Vehicles in Heterogeneous Platoons Considering the Stochasticity of Human Driving (TRBAM-24-01141) - B770

Ying Luo/Beijing University of Technology, Yanyan Chen/Beijing University of Technology, Jian Zhang/Beijing University of Technology, Kaiming Lu/Beijing University of Technology



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Highway Capacity and Quality of Service: Interrupted Flow

Bastian Schroeder, Kittelson & Associates, Inc., presiding

Sponsored By Standing Committee on Highway Capacity and Quality of Service

Real Entrance Capacity of a Single-Lane Roundabout Due to Congestion on the Circular Lane

(TRBAM-24-00224) - B680

Werner Brilon/Ruhr-Universität, Bochum, Ning Wu/Ruhr-Universität, Bochum

Planning Application for Mobility Assessment of Intersection Forms in Intersection Control Evaluation

(TRBAM-24-00310) - B689

Nagui Roupail/Kittelson & Associates, Inc., Burak Cesme/Kittelson & Associates, Inc., Bastian Schroeder/Kittelson & Associates, Inc.

Approach Saturation Headways at All-Way Stop Control Intersections: Empirical Investigation

(TRBAM-24-01319) - B688

Ahmed Al-Kaisy/Montana State University, Dorukhan Doruk/Montana State University

Motivations and Constraints for Rural Cycling Based on User Perception: Recommendations for Bicycle

Analysis Procedures (TRBAM-24-01130) - B678

Ana Moreno/Technical University of Munich, Yangqian Cai/Technical University of Munich, Santiago

Linares-Ramirez/Technical University of Munich, Scott Washburn/Technical University of Munich, Ahmed

Al-Kaisy/Technical University of Munich, Jorge Barrios/Technical University of Munich, Bastian Schroeder/Technical University of Munich

A Systematic, Data-Driven Framework for Evaluating Changes on Traffic Corridors (TRBAM-24-01574) - B681

Mostafa Khatami/Queensland University of Technology, Krishna Behara/Queensland University of Technology, Chelsea

Home/Queensland University of Technology, David Gyles/Queensland University of Technology, Frans

Dekker/Queensland University of Technology, Ashish Bhaskar/Queensland University of Technology, Alexander

Paz/Queensland University of Technology

A Queueing Model and Capacity Analysis for Reservation-Based, Autonomous Intersections (TRBAM-24-01599) -

B682

Zhihong Yao/Southwest Jiaotong University, Yingying Zhao/Southwest Jiaotong University, Haoran Jiang/Southwest

Jiaotong University, Yunxia Wu/Southwest Jiaotong University

Assessing the Performance Evaluation Methodology of Urban Street Facilities for Motorized Vehicles in the

Highway Capacity Manual Using Connected Vehicle Data (TRBAM-24-02615) - B683

Jianyuan Xu/University of Nevada, Reno, Zong Tian/University of Nevada, Reno, Aobo Wang/University of Nevada, Reno,

Andrew Jayankura/University of Nevada, Reno

Increasing the Capacity of Signalized Intersections with Unconventional Designs of Shared Right-Turn Lanes

(TRBAM-24-02729) - B684

Zilin Shen/Tongji University, Chunhui Yu/Tongji University, Wanjing Ma/Tongji University

Saturation Flow Assessment of Truck Traffic During Queue Dissipation at Signalized Intersection

(TRBAM-24-03617) - B685

Prasanta Bhuyan/National Institute of Technology, Rourkela, Sujeet Sahoo/National Institute of Technology, Rourkela

Validating the Highway Capacity Manual Free-Flow Speed Constant for Urban Arterials (TRBAM-24-04712) -

B672

Ernest Tufuor/Auburn University, Marcus Januario/Auburn University

Estimating Permitted Left-Turn Capacity Considering Lane Numbers: A Mathematical Simulation Framework

(TRBAM-24-04934) - B673

Min-Ci Sun/Texas A&M University, Yunlong Zhang/Texas A&M University

Beyond the Peak: An All-Day Operations Performance Measure Framework for Intersection and Corridor

Evaluation (TRBAM-24-04977) - B679

Michael Alston/Kittelson & Associates, Inc., Sophia Semensky/Kittelson & Associates, Inc., Bastian Schroeder/Kittelson

& Associates, Inc., Conor Semler/Kittelson & Associates, Inc., Meredyth Sanders/Kittelson & Associates, Inc.

An Ensemble Feed Forward Long Short-Term Memory Neural Network for Real-Time Queue Length Estimation

and Prediction at Signalized Intersections (TRBAM-24-05063) - B674

Wanuji Abewickrema/University of Queensland, Mehmet Yildirimoglu/University of Queensland, Jiwon Kim/University of Queensland

Measuring Parking Gap Acceptance and Maneuvering Time in a Developing Country: The Case of Doha, Qatar (TRBAM-24-05620) - B664

Khaled Shaaban/Utah Valley University, Ali Badran/Utah Valley University

Measuring the Impact of On-Street Parking on Multi-Lane Roads (TRBAM-24-05698) - B654

Khaled Shaaban/Utah Valley University, Ali Badran/Utah Valley University

Evaluating Electric Cars' Penetration Impact on Traffic Operations at Multi-Lane Urban Roads Under Mixed Traffic Conditions: A Micro-Simulation Based Approach (TRBAM-24-05706) - B675

Madhumita Paul/Indian Institute of Technology, Kharagpur, Perumal Vedagiri/Indian Institute of Technology, Kharagpur

Queue Length-Based Priority Strategy for Multi-Lane Unsignalized Intersection Under Mixed Traffic Environment (TRBAM-24-05724) - B665

Brian Kim/Seoul National University, Yang-Jun Joo/Seoul National University, Junhee Choi/Seoul National University, Dong-Kyu Kim/Seoul National University

On the Level of Service Criteria of Urban Arterials for Heterogeneous and Undisciplined Traffic Streams (TRBAM-24-06488) - B650

Afzal Ahmed/NED University of Engineering and Technology, Farah Khan/NED University of Engineering and Technology, Syed Rizvi/NED University of Engineering and Technology, Muhammad Ahmed/NED University of Engineering and Technology, Durr Shahwar/NED University of Engineering and Technology, Muhammad Adnan/NED University of Engineering and Technology

Improving signalized intersection's capacity through the randomness of saturation flow rate (TRBAM-24-06497) - B651

Dianchao Lin/Fuzhou University, Qishan, Li Li/Fuzhou University, Qishan, Shu Chen/Fuzhou University, Qishan

3164



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Highway Capacity and Quality of Service: Uninterrupted Flow

Bastian Schroeder, Kittelson & Associates, Inc., presiding

Sponsored By Standing Committee on Highway Capacity and Quality of Service

Analyzing the Effect of the Platoon Size of Connected Vehicles on Traffic Capacity of Mixed Traffic Flow (TRBAM-24-00249) - B690

Yangsheng Jiang/Southwest Jiaotong University, Yuqin Ma/Southwest Jiaotong University, Tingting Ren/Southwest Jiaotong University, Hongwu Li/Southwest Jiaotong University, Zhihong Yao/Southwest Jiaotong University

Capacity Model for Long Freeway Weaving Segments in Germany (TRBAM-24-00371) - B691

Alexander Brandenburg/Ruhr University, Bochum, Justin Geistefeldt/Ruhr University, Bochum

Machine Learning Approach for Estimating Passenger Car Equivalency Factors Using Crowdsourced Data (TRBAM-24-02856) - B692

Adrian Cottam/Auburn University, Xiaofeng Li/Auburn University, Yao-Jan Wu/Auburn University

Level of Service in Merge and Diverge Segments in Freeways in Brazil (TRBAM-24-03470) - B693

Raquel Carneiro/Companhia Paulista de Parcerias, José Setti/Companhia Paulista de Parcerias

Modeling Crash Clearance Duration for Ohio Freeways Using a Hybrid Neural Network and Mixture Model Approach (TRBAM-24-04915) - B694

Meshack Mihayo/Cleveland State University, Emmanuel Kidando/Cleveland State University, Boniphace Kutela/Cleveland State University, Angela Kitali/Cleveland State University, Jacqueline Jenkins/Cleveland State University

Informed Along the Road: Roadway Capacity Driven Graph Convolution Network for Network-Wide Traffic Prediction (TRBAM-24-05248) - B687

Zilin Bian/New York University, Dachuan Zuo/New York University, Jingqin Gao/New York University, Kaan Ozbay/New York University, Zhenning Li/New York University

Data-Driven Approach to Forecasting Congestion Growth Rate on California Freeways (TRBAM-24-05925) - B695

Siavash Shojaat/California Department of Transportation, Zhongren Wang/California Department of Transportation, Bahman Moghimi/California Department of Transportation



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Advancements in Processing, Understanding, and Using Weigh-in-Motion Data

Andrew Nichols, Virginia Department of Transportation, presiding
Ioannis Tsapakis, Texas A&M Transportation Institute, presiding
Olga Selezneva, Applied Research Associates, Inc., presiding
Deborah Walker, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Highway Traffic Monitoring, Subcommittee on Weigh-in-Motion

Weigh-in-Motion Design and Results on the MnROAD Mainline: Past and Future Vision (TRBAM-24-01361) - B643

Joseph Podolsky/Minnesota Department of Transportation, Emil Bautista/Minnesota Department of Transportation

Feasibility of Using Portable Weigh-in-Motion Systems for Truck Axle Load Data Collection on Secondary Highways (TRBAM-24-02437) - B644

Phani Kumar Patnala/University of Manitoba, Michael Olfert/University of Manitoba, Jonathan Regehr/University of Manitoba

Bayesian Inference-Based Truck Re-Identification for Asset Management of Highway Network Systems (TRBAM-24-04143) - B646

Kidus Admassu/Microsoft Corporation, Jerome Lynch/Microsoft Corporation, Tierra Bills/Microsoft Corporation

The Development of a Practical Procedure for Data-Driven, Weigh-in-Motion Equipment Calibration Scheduling to Ensure Data Accuracy and Consistency Over Time (TRBAM-24-02591) - B645

Olga Selezneva/Applied Research Associates, Inc., Dean Wolf/Applied Research Associates, Inc., Deborah Walker/Applied Research Associates, Inc.

Development and Field Validation of a Rotation-Based Bridge Weigh-in-Motion System Leveraging Computer Vision for Robust Axle Detection (TRBAM-24-05940) - B647

Farhad Huseynov/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu, Enes Karaaslan/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu, Gustavo Diaz/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu, Mahta Zakaria/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu, Necati Catbas/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu, Tolga Ercan/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu, Haluk Laman/Izmir Institute of Technology: Izmir Yuksek Teknoloji Enstitusu

Tire Width-Based Screening at a Weigh-in-Motion Preclearance Site (P24-21419)

Dan O'Reilly/IRD, Inc.

Use of Weigh-In-Motion for Road Safety Applications in North America (P24-21420)

Tom Der/IRD, Inc.



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Advances in Traffic Monitoring Research and Practice

Ioannis Tsapakis, Texas A&M Transportation Institute, presiding
John Ash, University of Cincinnati, presiding
Mayuree Binjolkar, University of Washington, presiding

Sponsored By Standing Committee on Highway Traffic Monitoring, Subcommittee on Weigh-in-Motion, Joint Subcommittee on Bicycle and Pedestrian Data (with AED10, AED20, AEP25, ACH10, and ACH20), Subcommittee on Highway Traffic Monitoring Research

As the technologies used for monitoring traffic continue to advance, analytical challenges arise to ensure that data meet customer needs. These advances also open up new application areas. This session presents research focused on new data collection technologies, analysis techniques, and applications.

Roadside Units Location Optimization for Traffic Control Application: An Integer Linear Program Approach (TRBAM-24-06056) - B630

Eleonore Fauchet/Université Gustave Eiffel, Pierre-Antoine Laharotte/Université Gustave Eiffel, Matthieu Guillot/Université Gustave Eiffel, Maxime Gueriau/Université Gustave Eiffel, Nour-Eddin El Faouzi/Université Gustave Eiffel

3D Object Detection and High-Resolution Traffic Parameters Extraction Using Low-Resolution LiDAR Data (TRBAM-24-05814) - B640

Linlin Zhang/University of Missouri, Columbia, Xiang Yu/University of Missouri, Columbia, Armstrong Aboah/University of Missouri, Columbia, Yaw Adu-Gyamfi/University of Missouri, Columbia

Optimizing Traffic Monitoring Camera Locations: A Mathematical Modeling Approach (TRBAM-24-04905) - B639

Dhiraj Khanal/Southern Illinois University, Edwardsville, Xin Chen/Southern Illinois University, Edwardsville, Yan Qi/Southern Illinois University, Edwardsville

Massachusetts Vehicle Census: Leveraging Vehicle Registration and Inspection Data to Create a State-Wide Longitudinal Driver Behavior Data Set (TRBAM-24-04471) - B637

Liz Williams/Massachusetts Bay Transportation Authority (MBTA), Joaquin Osio-Norgaard/Massachusetts Bay Transportation Authority (MBTA), Michael Melencio/Massachusetts Bay Transportation Authority (MBTA), Hongyi Wang/Massachusetts Bay Transportation Authority (MBTA), Shruti Venkatesh/Massachusetts Bay Transportation Authority (MBTA), Karl Meakin/Massachusetts Bay Transportation Authority (MBTA), Conor Gately/Massachusetts Bay Transportation Authority (MBTA), Heather Davis/Massachusetts Bay Transportation Authority (MBTA)

A Lane-Based, Origin-Destination Vehicle Counts in Weaving Area Using Field Video Data (TRBAM-24-04245) - B636

Mei Qiu/Indiana University Purdue University Indianapolis, Wei Lin/Indiana University Purdue University Indianapolis, Stanley Chien/Indiana University Purdue University Indianapolis, Lauren Christopher/Indiana University Purdue University Indianapolis, Yaobin Chen/Indiana University Purdue University Indianapolis

A Multi-Criteria Planning Framework for Regional Intersection Improvement Using Telematic Data of Connected Vehicles (TRBAM-24-04138) - B635

Swastik Khadka/University of Texas, Arlington, Peirong (Slade) Wang/University of Texas, Arlington, Pengfei (Taylor) Li/University of Texas, Arlington

Data Checks for Bicycle and Pedestrian Counts (TRBAM-24-03099) - B634

Amanda Glazer/University of California, Berkeley, Philip Stark/University of California, Berkeley, Md Mintu Miah/University of California, Berkeley, Krista Nordback/University of California, Berkeley, Julia Griswold/University of California, Berkeley, Alexander Skabardonis/University of California, Berkeley

A Novel Lightweight Vehicle Detection Method Based on Efficient Convolution and Fine-Pooling Structure (TRBAM-24-02455) - B633

Tiandong Xu/Northeast Forestry University, Lin Zhao/Northeast Forestry University

Unveiling Speed Patterns Using Spatio-Temporal Data: Motorway Patrol Drivers Case Study (TRBAM-24-02259) - B632

Katerina Koliou/National Technical University of Athens (NTUA), Ioanna Spyropoulou/National Technical University of Athens (NTUA)

Estimating the Operational Capacity with Transition Boundary Between the Steady and Congested States Using Dedicated Short-Range Communication Data (TRBAM-24-05264) - B648

Eun Lee/Université Gustave Eiffel, Euntak Lee/Université Gustave Eiffel

Empirical Study of Bicycle Traffic Characteristics Relevant for Microscopic Simulation (TRBAM-24-00104) - B631

Guillermo Pérez Castro/Linköping University, Fredrik Johansson/Linköping University, Johan Olstam/Linköping University

Freewheeling: What Six Locations, 61,000 Trips, and 242,000 Miles in Colorado Reveal About How E-Bikes Improve Mobility Options (TRBAM-24-04724) - B638

Cemal Akcicek/National Renewable Energy Laboratory (NREL), Zack Aemmer/National Renewable Energy Laboratory (NREL), K. Shankari/National Renewable Energy Laboratory (NREL), Andrew Duvall/National Renewable Energy Laboratory (NREL)



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Safe and Smart Transportation Systems Powered by Artificial Intelligence

Yuanchang Xie, University of Massachusetts, Lowell, presiding

Sponsored By Standing Committee on Artificial Intelligence and Advanced Computing Applications

Artificial Intelligence (AI) has ignited a wide array of innovative applications across various domains, including traffic signal control, autonomous vehicle management, road user behavior modeling and prediction, road user detection and tracking, safety data modeling, car-following, lane-changing behavior simulation, and LiDAR data processing, among others. Furthermore, Large Language Models (LLMs) have demonstrated their potential in automating the analysis of crash reports and data sourced from the internet. In this comprehensive session, we will showcase the latest advancements in AI applications for making transportation systems safer, smarter, and more efficient.

Machine Learning–Driven Dynamic Trajectory Planning to Support Human-Like Automated Driving for Stop-Controlled Local Roads (TRBAM-24-05633) - A113

Dong Nian/University of Cincinnati, Zhixia Li/University of Cincinnati, Yingfan Gu/University of Cincinnati, Robert Kluger/University of Cincinnati, Heng Wei/University of Cincinnati, Wei Lin/University of Cincinnati

Fusion of Data from High- and Low-Reliability Sources for Macroscopic Fundamental Diagram Estimation (TRBAM-24-06445) - A100

Lu Bai/Southeast University, S.C. Wong/Southeast University, Pengpeng Xu/Southeast University, Wai Wong/Southeast University, Pan Liu/Southeast University, Andy Chow/Southeast University, William Lam/Southeast University, Wei Ma/Southeast University

Identifying Traffic Risk Hotspots Using Spatial-Temporal Network Kernel Density Estimation: A Novel Optimal Parameter Selection Method with Dual Data Set Validation (TRBAM-24-03685) - A162

Shengtai Yao/Tsinghua University, Huiping Li/Tsinghua University, Xiao Hu/Tsinghua University, Klaus Hermann/Tsinghua University, Ke Zhang/Tsinghua University, Yunxuan Li/Tsinghua University, Meng Li/Tsinghua University

Enhancing Car-Following Performance in Traffic Oscillations Using Expert Demonstration Reinforcement Learning (TRBAM-24-00746) - A140

Meng Li/Southeast University, Zhibin Li/Southeast University

A Novel, Temporal, Multi-Gate, Mixture-of-Experts Approach for Vehicle Trajectory and Driving Intention Prediction (TRBAM-24-01090) - A250

Renteng Yuan/Southeast University, Mohamed Abdel-Aty/Southeast University, Qiaojun Xiang/Southeast University, zijin wang/Southeast University, Ou Zheng/Southeast University

Bridging the Domain Gap for Multi-Agent Perception (TRBAM-24-02189) - A200

Runsheng Xu/University of California, Los Angeles, Jinlong Li/University of California, Los Angeles, Xiaoyu Dong/University of California, Los Angeles, Hongkai Yu/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Distracted Driving Recognition Based on Fine-Tuning Contrastive Language-Image Pre-Training Model with Multi-Layer Perceptron Classifier (TRBAM-24-03574) - A163

Huansong Zhang/Southeast University, Jiulonghu, Yuhe Chen/Southeast University, Jiulonghu, Rui Zhang/Southeast University, Jiulonghu, Yongjun Shen/Southeast University, Jiulonghu

A Dynamic-Confidence 3D Multi-Object Tracking Method Based on Spatio-Temporal Association (TRBAM-24-05999) - A102

Ruihao Zeng/The University of Sydney, Mohsen Ramezani/The University of Sydney

A Deep Learning Approach to Detect and Classify Heavy-Duty Trucks in Satellite Images (TRBAM-24-04461) - A131

Xingwei Liu/University of California, Irvine, Yiqiao Li/University of California, Irvine, Langting Sizemore/University of California, Irvine, Xiaohui Xie/University of California, Irvine, Jun Wu/University of California, Irvine

Multimodal Interaction-Aware 2D Vehicle Trajectory Prediction Based on Diffusion Graph Convolutional Networks (TRBAM-24-05764) - A272

Keshu Wu/University of Wisconsin, Madison, Yang Zhou/University of Wisconsin, Madison, Haotian Shi/University of Wisconsin, Madison, Xiaopeng (Shaw) Li/University of Wisconsin, Madison, Bin Ran/University of Wisconsin, Madison

Exploring the Intersection of Artificial Intelligence and Transportation: A Text Mining Perspective (TRBAM-24-02481) - A213

Surendrabikram Thapa/Virginia Tech: Virginia Polytechnic Institute and State University, Debanjan Datta/Virginia Tech: Virginia Polytechnic Institute and State University, Aditi Manke/Virginia Tech: Virginia Polytechnic Institute and State University, Abhijit Sarkar/Virginia Tech: Virginia Polytechnic Institute and State University

(continued)

ChatGPT for General Transit Feed Specification: From Words to Information (TRBAM-24-05906) - A103

Saipraneeth Devunuri/University of Illinois, Urbana-Champaign, Shirin Qiam/University of Illinois, Urbana-Champaign, Lewis Lehe/University of Illinois, Urbana-Champaign

Trajectory Prediction Model Based on Spatio-Temporal Features Disentangled Learning (TRBAM-24-00436) - A252

Ruiyi Wang/No Organization, Fan Ding/No Organization, Huachun Tan/No Organization, Yanchao Zhang/No Organization, Huiting Peng/No Organization, Qixing Wan/No Organization

Uncertainty-Aware Multi-Object Detection and Tracking Using Roadside 3D Point Clouds (TRBAM-24-06458) - A151

Kun Chen/Tongji University, Cong Zhao/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

A Predictive Approach for Sybil Attack Detection for a Waiting Time-Based Adaptive Traffic Signal Controller (TRBAM-24-00024) - A253

Sinan Noman/University of Alabama, Travis Atkison/University of Alabama, Muhammad Sami Irfan/University of Alabama, Mizanur Rahman/University of Alabama

AOI2vec: Inferring Urban Traffic Trajectories with Connectivity Graph-Based Area of Interest Vectorization (TRBAM-24-01008) - A251

Yihang Li/Peking University, Liyan Xu/Peking University

Classifying Wrong-Way Driving Related Crashes Using a Deep Learning-Based Natural Language Processing Approach (TRBAM-24-01064) - A220

Emmanuel Kidando/Cleveland State University, Boniphace Kutela/Cleveland State University, Meshack Mihayo/Cleveland State University, Angela Kitali/Cleveland State University

Deep Learning-Based Vehicle Trajectory Reconstruction for Arterial Intersection Under Connected Vehicle Environment (TRBAM-24-01181) - A222

Mengyun Xu/Wuhan University of Technology, Chunping Li/Wuhan University of Technology, Jie Fang/Wuhan University of Technology, Tony Z. Qiu/Wuhan University of Technology

Re-Examination of Fuzzy Inference Systems for Discretionary Lane-Changing Decisions (TRBAM-24-01339) - A223

Ehsan Yahyazadeh Rineh/University of Texas, El Paso, Ruey Long Cheu/University of Texas, El Paso

An Open Framework for Vehicle Trajectory Extraction Utilizing Rotated Bounding Boxes (TRBAM-24-01621) - A263

Xinkai Ji/Southeast University, Peipei Mao/Southeast University, Yu Han/Southeast University, Pan Liu/Southeast University

A Graph-Based Approach for Connecting Vehicle Trajectories from Multiple Uncrewed Aerial Vehicles (TRBAM-24-01622) - A262

Xinkai Ji/Southeast University, Yu Han/Southeast University, Peipei Mao/Southeast University, Pan Liu/Southeast University

A Joint Spatio-Temporal Prediction and Image Confirmation Model for Vehicle Trajectory Concatenation with Low Detection Rates (TRBAM-24-01770) - A141

Ruyi Feng/Southeast University, Zhibin Li/Southeast University, Yan Ding/Southeast University, Bowen Liu/Southeast University

Platooning and Speed Harmonization to Improve Efficiency on Large-Scale Highway Networks Using Machine Learning (TRBAM-24-01872) - A201

Anoop Sathyan/University of Cincinnati, Kelly Cohen/University of Cincinnati, Jiaqi Ma/University of Cincinnati

Improving Offline Map-Matching via a Trajectory Representation Learning Method with Diffusion-Based Trajectory Generation (TRBAM-24-02297) - A211

Jiayin Zhu/Tongji University, Zhengyi Ma/Tongji University, Yan Li/Tongji University, Xihan Cao/Tongji University, Zhixuan Xiao/Tongji University, Haoran Yang/Tongji University, Ye Li/Tongji University, Genwang Liu/Tongji University

Graph Neural Networks to Simulate Flexible Pavement Responses Using 3D Finite Element Analysis Data (TRBAM-24-02315) - A212

Qingwen Zhou/Wayne State University, Imad Al-Qadi/Wayne State University

A Physics-Guided, Learning-Based Method for Adaptive Cruise Control on Urban Networks (TRBAM-24-03127) - A203

Lakshman Ramkumar/University of Utah, Tian Zhao/University of Utah, Yun Yuan/University of Utah

Monocular Surveillance Camera Based Accurate Multi-Vehicle Tracking and Speed Estimation Against Strong Image Vibrations (TRBAM-24-03144) - A202

Runze Yuan/University of Hawai'i, Manoa, Igor Lashkov/University of Hawai'i, Manoa, Guohui Zhang/University of Hawai'i, Manoa

(continued)

A Prediction Methodology of Driver Compliance Following Lane-Level Variable Speed Limit Based on Real-Time Trajectory Data of Real Site Experiment (TRBAM-24-03166) - A193
Hao Song/Tongji University, Junhua Wang/Tongji University, Ting Fu/Tongji University, Yiran Shao/Tongji University

Quadratic Programming Method for Vehicle Trajectory Imputation Using Fixed and Mobile Sensor Data (TRBAM-24-03230) - A192
Ximeng Fan/University of California, Irvine, Xuting Wang/University of California, Irvine, Wen-Long Jin/University of California, Irvine

A YOLOv5-Based Lightweight Model for Vehicles Detection in Congested Scenes (TRBAM-24-03415) - A183
Jia Li/Southeast University, Chenxi Lin/Southeast University, Bowen Xue/Southeast University, Xunming Yuan/Southeast University, Xiaojian Hu/Southeast University

A Hybrid Physics-Based and Data-Driven Approach to Car-Following Behavior Modeling and Analysis (TRBAM-24-03446) - A182
Yang Zhang/Southeast University, Qixiu Cheng/Southeast University, Ziyuan Gu/Southeast University, Zhiyuan Liu/Southeast University

EnsembleFollower: A Hybrid Car-Following Framework Based on Reinforcement Learning and Hierarchical Planning (TRBAM-24-03491) - A243
Xu Han/Hong Kong University, Guangzhou, Meixin Zhu/Hong Kong University, Guangzhou, Xianda Chen/Hong Kong University, Guangzhou, Pinlong Cai/Hong Kong University, Guangzhou, Xiaowen Chu/Hong Kong University, Guangzhou

Understanding the Determinants of Speeding Behavior by Using Machine Learning Technique (TRBAM-24-03525) - A173
Mithlesh Kumar/Indian Institute of Technology, Bombay, S.M.P Siddharth/Indian Institute of Technology, Bombay, Pravin Telang/Indian Institute of Technology, Bombay, P. Vedagiri/Indian Institute of Technology, Bombay

Deep Embedded Clustering Methods for Identifying Driving Safety Profiles from Trajectory Data (TRBAM-24-03549) - A172
Ankit Kumar Kushwaha/Indian Institute of Technology, Patna, Hardik Arora/Indian Institute of Technology, Patna, B. Anil Kumar/Indian Institute of Technology, Patna

A Criticality Guided Sampling Strategy for Test Scenarios Reduction for Driving Automation Validation (TRBAM-24-03588) - A230
Hugues Blache/University Gustave Eiffel, Pierre-Antoine Laharotte/University Gustave Eiffel, Nour-Eddin El Faouzi/University Gustave Eiffel

An Interaction-Based Model Combining Multi-Head Attention with Long Short-Term Memory for Trajectory Prediction in Multi-Vehicle Interaction Scenarios (TRBAM-24-03688) - A153
Jinpeng Wen/Purdue University, Tian Lei/Purdue University, Xiaohong Yin/Purdue University, Gaoyao Xiao/Purdue University, Qihua Zhan/Purdue University

STSAMI-GCN: Graph Convolution Network Combining Spatio-Temporal Self-Attention and Mutual Information for Pedestrian Trajectory Prediction (TRBAM-24-03851) - A152
Chungang Hu/NanJing University of Science and Technology, Zhuping Zhou/NanJing University of Science and Technology, Zhenlin Yue/NanJing University of Science and Technology, Changji Yuan/NanJing University of Science and Technology, Leyi Sun/NanJing University of Science and Technology

Generative Adversarial Network for Car-Following Trajectory (TRBAM-24-03911) - A273
Haotian Shi/Texas A&M University, Shuoxuan Dong/Texas A&M University, Yuankai Wu/Texas A&M University, Qinghui Nie/Texas A&M University, Yang Zhou/Texas A&M University, Bin Ran/Texas A&M University

Automatic Extraction of Relevant Road Infrastructure Using Connected Vehicle Data and Deep Learning Model (TRBAM-24-04022) - A231
Kojo Adu-Gyamfi/Iowa State University, Raghupathi Kandiboina/Iowa State University, Varsha Mouli/Iowa State University, Skylar Knickerbocker/Iowa State University, Hans Zachary/Iowa State University, Neal Hawkins/Iowa State University, Anuj Sharma/Iowa State University

Application of Text Mining Techniques on Narrative Reports of Pedestrian-Involved Crashes (TRBAM-24-04062) - A210
Anahita Kakhani/Bowman Consulting, Mohammad Jalayer/Bowman Consulting, Emmanuel Kidando/Bowman Consulting

Federated Multi-Agent Reinforcement Learning for On-Ramp Merging Control (TRBAM-24-04071) - A143
Chun Li/Xinjiang University, Zhizhou Wu/Xinjiang University, Yunyi Liang/Xinjiang University

Automatic Extraction and 3D Modeling of Real Road Scenes Using Uncrewed Aerial Vehicle Imagery and Deep Learning Semantic Segmentation (TRBAM-24-04080) - A142
Zhen Liu/Southeast University, Danyu Wang/Southeast University, Xingyu Gu/Southeast University

(continued)

An Equitable Signalized Arterial Origin-Destination Flow Estimation by a Fairness-Aware Artificial Intelligence (TRBAM-24-04112) - A133

Yaobang Gong/University of Maryland, College Park, Qinzhen Wang/University of Maryland, College Park, Xianfeng Yang/University of Maryland, College Park

Exploring Lane-Changing Behavior from an Overlooking Perspective: Deep Learning Analysis of Unmanned Aerial Vehicle Data (TRBAM-24-04209) - A132

Ruhan Pang/Inner Mongolia University, Yuan Zhu/Inner Mongolia University, Yaowei Sun/Inner Mongolia University, Qingwen Pu/Inner Mongolia University, Chao Sun/Inner Mongolia University

Work Zone Identification Using Connected Vehicle Data: Leveraging Shallow Learning Model (TRBAM-24-04529) - A232

Ashutosh Dumka/Iowa State University, Raghupathi Kandiboina/Iowa State University, Varsha Mouli/Iowa State University, Skylar Knickerbocker/Iowa State University, Neal Hawkins/Iowa State University, Anuj Sharma/Iowa State University

Unsupervised Learning-Based Classification of Driver Following Behavior in Agricultural Traffic (TRBAM-24-04560) - A233

Meenakshi Sumeet Arya/Iowa State University, Michelle Reyes/Iowa State University, Saeed Arabi/Iowa State University, Anuj Sharma/Iowa State University, Cara Hamann/Iowa State University

Aggressive Driving Identification for Connected Heavy-Duty Vehicle Under Naturalistic Driving Condition: A Context-Aware Attention Encoder-Decoder Model (TRBAM-24-04668) - A130

Kun Tang/NanJing University of Science and Technology, Tian Xu/NanJing University of Science and Technology, Tangyi Guo/NanJing University of Science and Technology

T2-Score: A Reputation Score with an Adaptive Q-Learning Based Trust Model to Avoid Malicious Mobility Data Endorsements in Blockchain Consensus (TRBAM-24-04759) - A120

Junaid Khan/Western Washington University, Fan Zuo/Western Washington University, Kaan Ozbay/Western Washington University

Exploration of Surface Temperature Forecasting via Recurrent Neural Networks Using a Minimal Parameter Set (TRBAM-24-05224) - A121

Adam Pedrycz/Campbell Scientific Canada, David Hammond/Campbell Scientific Canada, Dirk Baker/Campbell Scientific Canada

Toward Explainable and Scalable Motion Prediction with Recurrent Graph Transformer (TRBAM-24-05500) - A122

Juanwu Lu/Purdue University, Can Cui/Purdue University, Ziran Wang/Purdue University

Estimating the Representative Points of Vehicles in Real-Time Traffic Monitoring for Crash Studies (TRBAM-24-05561) - A123

Kijong Eom/Seoul National University, Jooyong Lee/Seoul National University, Byeonghun Park/Seoul National University, Justin Chang/Seoul National University

Pedestrian-Involved Traffic Signal Optimization Using Decentralized, Graph-Based, Multi-Agent Reinforcement Learning (TRBAM-24-05664) - A112

Vijayalakshmi K Kumarasamy/University of Tennessee, Chattanooga, Abhilasha Saroj/University of Tennessee, Chattanooga, Dalei Wu/University of Tennessee, Chattanooga, Yu Liang/University of Tennessee, Chattanooga, Michael Hunter/University of Tennessee, Chattanooga, Mina Sartipi/University of Tennessee, Chattanooga

Incident Hotspot Prediction in North Carolina Using Deep Learning Techniques (TRBAM-24-05799) - A110

Hiruni Niwunhella/North Carolina State University, Asya Atik/North Carolina State University, Leila Hajibabai/North Carolina State University

ChatGPT as the Transportation Equity Information Source for Scientific Writing (TRBAM-24-05882) - A221

Boniphace Kutela/Texas A&M Transportation Institute, Shoujia Li/Texas A&M Transportation Institute, Subasish Das/Texas A&M Transportation Institute, Jinli Liu/Texas A&M Transportation Institute, Mark Ngotonie/Texas A&M Transportation Institute

A Novel Cross-Domain Trajectory Matching Framework of Roadside Sensors Based on Spatio-Temporal Propagation Characteristics (TRBAM-24-05944) - A150

Yupeng Shi/Tongji University, Cong Zhao/Tongji University, Shiyu Wang/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

How Do Transportation Professionals Perceive the Impacts of Artificial Intelligence Applications in Transportation?: A Latent Class Cluster Analysis (TRBAM-24-06002) - A101

Yiheng Qian/University of Florida, Tejaswi Polimetla/University of Florida, Thomas W. Sanchez/University of Florida, Xiang Yan/University of Florida

(continued)

Training Vehicle Detection and Classification Models with Less Data: An Active Learning Approach (TRBAM-24-06207) - A240

Elizabeth Arthur/University of Missouri, Columbia, Tanner Muturi/University of Missouri, Columbia, Yaw Adu-Gyamfi/University of Missouri, Columbia

The Fusion-Gated Recurrent Unit Network: A Deep Learning Model for Future Bounding Box Prediction of Traffic Agents in Risky Driving Videos (TRBAM-24-02557) - A241

Muhammad Monjurul Karim/University of Washington, Seattle, Ruwen Qin/University of Washington, Seattle, Yin Hai Wang/University of Washington, Seattle

Mitigating the Bias for Traffic Visual Perception Systems Empowered by Learning Few-Shot Representations (TRBAM-24-03059) - A242

Hao Yang/University of Washington, Chenxi Liu/University of Washington, Meixin Zhu/University of Washington, Ruimin Ke/University of Washington, Yin Hai Wang/University of Washington

Pillar Attention Encoder for Adaptive Cooperative Perception (TRBAM-24-05721) - A111

Zhengwei Bai/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Matthew Barth/University of California, Riverside, Yongkang Liu/University of California, Riverside, Emrah Sisbot/University of California, Riverside, Kentaro Oguchi/University of California, Riverside

3168



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Public Lands Transportation Fellows: Trip Planning, Safety Planning, and Ensuring Infrastructure Resilience in a Changing Climate

Jaime Sullivan, Western Transportation Institute (WTI), presiding

Sponsored By Standing Committee on Transportation Needs of National Parks and Public Lands, Rural Transportation Issues Coordinating Council, Young Members Coordinating Council

Public Lands Transportation Fellows (PLTFs) provides fellowships to outstanding masters and doctoral graduates in a transportation-related field. The fellows are provided with a unique opportunity for career development and public service working directly with staff at Federal Land Management Agencies. Come to the session to learn about current PLTF projects.

Unearthing the Badlands: Beginning to Understand Erosion and Its Risks to Transportation Infrastructure in a Changing Climate (P24-20244) - A362

Ashley Kuhn/Western Transportation Institute (WTI)

North Cascades National Park Long-Term Access and Resilience Strategy: Planning for Sustainable Access to the Alpine (P24-20245) - A372

Patrick McMahon/Western Transportation Institute (WTI)

Know Before You Go: Understanding National Park Service Visitors' Trip Planning Expectations and Needs (P24-20246) - A373

Tristan Jilson/Western Transportation Institute (WTI)

Infrastructure Resilience to Climate Change on Public Lands of the Western United States (P24-20247) - A381

Hartman Rorick/Western Transportation Institute (WTI)

Two Case Studies in Data-Driven Decision Making for Public Lands Transportation Safety Planning (P24-20248) - A382

Michael Tormey/Western Transportation Institute

Old Trains Bring New Value to Cleveland and a National Park: A Case Study on the Cuyahoga Valley Scenic Railroad (P24-20266) - A383

Charles Gould/Western Transportation Institute

3169



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Multi-Federal Agency–Supported Research for Users of Public Lands

Rinal Chheda, No Organization, presiding

Sponsored By Standing Committee on Transportation Needs of National Parks and Public Lands

With seasonal visitation patterns, mandates to preserve natural resources, and millions of people enjoying their lands annually, public lands face unique transportation challenges that necessitate research to uncover potential solutions to address these issues. The Federal Lands Highway Division, part of the Federal Highway Administration, has created a research program through their Innovative Research Council (IRC) that funds research into complex transportation issues in public lands. This poster session highlights three IRC-funded projects that will benefit public lands and other agencies dealing with similar transportation challenges.

Planning and Data-Sharing Partnerships Between Public Land Management Agencies and Their Partners (P24-20521) - A353

Cole Grisham/Federal Highway Administration (FHWA), Benjamin Rasmussen/OST-R/Volpe Center

The Future of E-Bikes on Public Lands (P24-20522) - A363

Seth English-Young/Federal Highway Administration (FHWA), Jonah Chiarenza/OST-R/Volpe Center

Integrating Public Health and Equity in Transportation Planning for Federal Land Management Agencies (P24-20525) - A352

Amit Armstrong/Federal Highway Administration (FHWA), Benjamin Rasmussen/OST-R/Volpe Center

3170



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Environmental Analysis and Ecology Topics

Kris Gade, Arizona Department of Transportation, presiding

Meridith Krebs, Kimley-Horn and Associates, Inc., presiding

Sponsored By Standing Committee on Environmental Analysis and Ecology

This poster session will present a variety of topics relating to the scope of the Standing Committee on Environmental Analysis and Ecology.

AEP70 Standing Committee on Environmental Analysis and Ecology (P24-20399) - B600

Meridith Krebs/Kimley-Horn and Associates, Inc., Kris Gade/Arizona Department of Transportation

Federal Highway Administration Wildlife Crossing Program (P24-20406) - B610

Colleen Fletcher/Federal Highway Administration (FHWA), Daniel Buford/Federal Highway Administration (FHWA), Julianne Schwarzer/OST-R/Volpe Center

Navigating Wildlife-Related Funding Opportunities Under the Infrastructure Investment and Jobs Act (P24-20400) - B611

Renee Callahan/ARC Solutions, Marta Brocki/ARC Solutions

Wildlife Fencing Guide: Improving Wildlife Fencing to Reduce Wildlife Vehicle Collisions and Improve Habitat Connectivity (P24-20402) - B620

Steve Bega/Animex International, Steve Mars/Animex International

Improving Native Plant Outcomes Through Enhanced Coordination Between Transportation Agencies and the Restoration Community (P24-20407) - B621

Bethany Kunz/U.S. Geological Survey, John Isanhart/U.S. Department of the Interior (DOI)

Evaluation of the Palmiter Method for Erosion Control and Stream Management (P24-20403) - B622

Benjamin Sperry/Illinois Department of Transportation, Elizabeth Myers/Enviroscience, Inc.

A Streamlined and State-Specific Approach to Bat Consultation on Routine Transportation Projects in Georgia (P24-20408) - B623

Jason Morrell/Arcadis

Urban Growth and Its Impacts on Ecology and Hydrology: A Systematic Review (TRBAM-24-01318) - B624

Md. Mokhlesur Rahman/University of North Carolina, Chapel Hill, Sevgi Erdogan/University of North Carolina, Chapel Hill

(continued)

State College Area Connector Planning and Environmental Linkages Study: Centre County, Pennsylvania (P24-20404) - B625

Lori Cole/Johnson, Mirmiran, and Thompson, Inc., Mary Tinsman/Johnson Mirmiran and Thompson

Successful Outcomes from Recent Planning and Environmental Linkages in the Last Frontier: Accelerating Project Delivery Along Two Alaska Highway Corridors Through Collaborative Planning and Environmental Linkages Processes (P24-20401) - B626

Leslie Robbins/Jacobs

State Route 37 Corridor: Planning and Environmental Linkages Study (P24-20409) - B627

Jeff Berna/Jacobs, John Cook/ICF Jones & Stokes

Swapping LOS for VMT in Project-Level Environmental Impact Analysis: Trends and Challenges in California (TRBAM-24-06335) - B628

Jamey Volker/University of California, Davis, Rey Hosseinzade/University of California, Davis, Mira Evans/University of California, Davis

A Modeling Framework for Evaluating the Environmental, Health, and Equity Impact of Large-Scale U.S. Charging Infrastructure Deployment (P24-20405) - B629

Karen Ficenc/National Renewable Energy Laboratory (NREL), Xiaodan Xu/Lawrence Berkeley National Laboratory

3171



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Dwight David Eisenhower Transportation Fellowship Program Poster (Session 3)

Latoya Jones, Federal Highway Administration (FHWA), presiding

Sponsored By Section - Executive Management Issues

An opportunity to explore the topics undergraduate and graduate students are researching at institutions across the country. Dwight David Eisenhower Transportation Fellowship Program research presentations are selected by FHWA and are not reviewed by TRB standing committees.

Driving A-loan: Race and the Geography of Automobile Debt in California (P24-21223) - B500

Samuel Speroni/University of California, Los Angeles

Tales from the Trenches: Advancing Climate Action and Equity in Regional Transportation Planning (P24-21224) - B501

tamika butler/University of California, Los Angeles

Developing a Transferrable Equity and GIS-Based Methodology to Quantify How Extreme Weather Events Impact Coastal Communities' Quality of Life (P24-21225) - B502

Christopher Gerber/Auburn University

Bicycle Volume Estimation Monitoring via Bayesian Methods (P24-21226) - B503

Rachael Panik/Georgia Institute of Technology

Toward Improving Pedestrian Safety, Efficiency, and Comfort at Signalized Intersections (P24-21227) - B504

Amy Wyman/Oregon State University

Data Integration for Multimodal Freight Resilience Assessment (P24-21228) - B510

Kyle Bathgate/University of Texas, Austin

The Effect of Moisture on Resilient Modulus of Limestone and Limerock Used as Pavement Base Aggregates (P24-21229) - B511

Don Guy Biessan/Auburn University

Rational Artificial Intelligence Car-Following Model Enhanced by Reality (P24-21230) - B512

Tianyi Li/University of Minnesota, Twin Cities

A Tale of Two States: Exploring Accessibility to Community College in California and Texas (P24-21231) - B513

Aqshems Meten Nichols/University of California, Berkeley

Mitigating Liquefaction Risk for Transportation Infrastructure Using Microbially Induced Desaturation (P24-21232) - B514

Kayla Sorenson/Portland State University

Mapping the Equity Implications of Autonomous Vehicle Technology by Level of Automation (P24-21233) - B520

Christian Douglas/Georgia Institute of Technology

A Methodology for Resilience Improvement Investment Prioritization Using the Federal Emergency Management Agency National Risk Index (P24-21234) - B521

Lauren Gardner/Vanderbilt University

(continued)

Coordinating a Demand-Responsive Vehicle with Public Transit for Equitable Ridepooling Microtransit and Feeder Services (P24-21235) - B522

Rami Ariss/Carnegie Mellon University

How Do Municipalities and Stakeholders Evaluate and Analyze a Highway Removal or Mitigation Project? (P24-21236) - B523

Jay Arzu/University of Pennsylvania

Ship Happens!: Weather Disruptions and Container Shipping Networks (P24-21237) - B524

Remote Assistance for Automated Vehicles (P24-21238) - B530

Nicholas Britten/Virginia Polytechnic Institute

Novel Adaptive Structures for Urban Air Mobility (P24-21239) - B531

Drivers' Perceptions of Cyclists' Communication Cues (P24-21240) - B532

Enhanced Accounting for Item Cost Variability in AASHTOWare Project Software (P24-21241) - B533

Will Reichard/Georgia Institute of Technology

The Association Between Early Life Disadvantage and Engagement of Risky Driving Behavior (P24-21242) - B534

Lauren Roach/University of Kentucky

Artifact Misuse in Controller Area Network Intrusion Detection System Evaluation (P24-21243) - B540

Katrina Rosemond/University of Colorado, Colorado Springs

Quantifying Operational Concerns for Large Trucks Entering Congested Roundabouts (P24-21244) - B541

Logan Scott-Deeter/Oregon State University

Criminalizing Rights or Policing Wrongs?: The Role of Infrastructure in Policing Equity and Traffic Safety (P24-21245) - B542

Weijing Wang/University of California, Davis

Toward Older Adult Inclusive Mobilitiescapes (P24-21246) - B543

Alec Werner/Virginia Polytechnic Institute

Pedestrian Dynamics-Based Multiscale Modeling of Infectious Diseases Mitigation in Transportation Scenarios (P24-21247) - B544

Yuxuan Wu/Embry Riddle Aeronautical University

Advancing Pedestrian Autonomous Vehicle Safety Research: A Human-in-the-Loop Simulation Framework (P24-21248) - B550

Zizheng Yan/Old Dominion University

Infrastructure Justice: A Framework for Identifying and Addressing Injustices in Transportation Infrastructure Development (P24-21249) - B551

Collin Yarbrough/Southern Methodist University

The Effects of Ridesharing on Congestion Status: A Case Study in the City of Chicago (P24-21250) - B552

Yuneil Yeo/University of California, Berkeley

Evaluating the Mental and Physical Health Impacts of Micromobility Trips (P24-21251) - B553

Justin Darr/University of California, Davis

Nonlinear Advection-Diffusion Models of Traffic Flow: A Numerical Study (P24-21252) - B554

Dawson Do/University of California, Berkeley

Best Management Practices Maintenance Requirements to Ensure Protection of Edwards Aquifer Water Quality (P24-21262) - B560

Felicia Ellis/University of Texas, San Antonio

Associated CO2 Emissions Level 2 and Level 3 Charging in a Microgrid Setting: A Case Study in Southern California (P24-21253) - B562

Luis Fernando Enriquez-Contreras/University of California, Riverside

Exclusion from Activities and Transportation Modes by Disability and Income: Results from a Survey in California (P24-21254) - B563

Justin Flynn/University of California, Davis

Automated Identification of Transportation-Related Information in Social Media Using Natural Language Processing and Clustering Techniques (P24-21255) - B564

Gabriel Geffen/University of Arizona

A Method for Choosing Equitable Transit Service Reductions During a Crisis: A Case Study of the COVID-19 Pandemic (P24-21256) - B572

Jennifer Hall/University of Texas, Austin

(continued)

Examining Post-COVID Shifts in Working from Home (P24-21257) - B573

Yu Hong Hwang/University of California, Los Angeles

Quantifying the Efficiency and Efficacy of Purchase Incentives for Electric Vehicles (P24-21258) - B574

Parker King/University of Vermont

The Trade-Off Between Carbon Emission Reduction and Motor Fuel Tax Revenue: Assessing the Impact of Interest Rate Hikes (P24-21261) - B582

Yilun Lu/University of Texas, Arlington

Commuter Mode Choice and Associated Pedestrian Route Choice Behavior Research (P24-21259) - B583

Xiazhi Zhang/University of Hawai'i, Manoa

3172



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Designing and Assessing Public Transit Networks

James Bunch, Mead & Hunt, Inc., presiding

Sponsored By Standing Committee on Public Transportation Planning and Development, Standing Committee on Transit Management and Performance, Standing Committee on Innovative Public Transportation Services and Technologies

Imagine a city. What is its ideal transit network? Speak with these poster presenters to hear about ways to use levers such as equity, efficiency, destination access, and land use to inform public transportation network design and to measure effectiveness.

Quantification and Comparison of Hierarchy in Public Transport Networks (TRBAM-24-00419) - A320

Ziyulong Wang/Delft University of Technology, Ketong Huang/Delft University of Technology, Renzo Massobrio/Delft University of Technology, Alessandro Bombelli/Delft University of Technology, Oded Cats/Delft University of Technology

Transit Design: A Holistic Approach Considering Equity and Efficiency (TRBAM-24-02657) - A303

Sophie Pavia/Vanderbilt University, Shadi Tehrani/Vanderbilt University, Danushka Pandithage/Vanderbilt University, Rishav Sen/Vanderbilt University, Michael Wilbur/Vanderbilt University, Chandra Ward/Vanderbilt University, Paul Speer/Vanderbilt University, Philip Pugliese/Vanderbilt University, Ayan Mukhopadhyay/Vanderbilt University, Aron Laszka/Vanderbilt University, Samitha Samaranayake/Vanderbilt University, Abhishek Dubey/Vanderbilt University

A Data-Driven Framework for Natural Feature Profile of Public Transport Ridership: Insights from Suzhou and Lianyungang, China (TRBAM-24-04738) - A311

Haobo Sun/Southeast University School of Transportation, TianLi Tang/Southeast University School of Transportation

Revitalizing Public Transit in Low Ridership Areas: An Exploration of On-Demand Multimodal Transit Systems (TRBAM-24-05509) - A310

Jiawei Lu/Georgia Institute of Technology, Connor Riley/Georgia Institute of Technology, Krishna Murthy Gurumurthy/Georgia Institute of Technology, Pascal Van Hentenryck/Georgia Institute of Technology

Critical Node Identification in Bus-Metro Multi-Layer Network Considering Land Use (TRBAM-24-05538) - A312

Yuyang Zhou/Beijing University of Technology, Mengyao Zhang/Beijing University of Technology, Yanyan Chen/Beijing University of Technology

Constructing a Time-Dependent, Multi-Cost, Multimodal Network Model to Measure Accessibility in a Large-Scale Network (TRBAM-24-00718) - A313

Lindsay Graff/Carnegie Mellon University, Katherine Flanigan/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

3173



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Equitable Access and Transit Ridership

Peter Ohlms, Virginia Department of Transportation, presiding

Sponsored By Standing Committee on Public Transportation Planning and Development, Standing Committee on Transit Management and Performance, Standing Committee on Innovative Public Transportation Services and Technologies

How can we increase transit ridership? Is transit access (or job access, or rail transit access) equitable in a particular city? How did riders' travel behaviors change during the COVID-10 pandemic? Review findings related to these and other questions, then ask the poster presenters some questions of your own.

Equity Analysis of Rail Services for Intermodal Integration in the Metropolitan Areas of Porto (TRBAM-24-01359) - A291

Mudassar Shafiq/No Organization, António Couto/No Organization

Exploring the Heterogeneity in Transit Commuters' Risk Mitigation Behavior During the COVID-19 Pandemic in China (TRBAM-24-01620) - A292

Xinghua Li/Tongji University, Yueyi Yang/Tongji University, Yuntao Guo/Tongji University, Yingcong Sun/Tongji University, Dustin Souders/Tongji University, Tianpei Tang/Tongji University

Beyond Spatial Proximity: Understanding Segregation and Job Accessibility Among Racial and Low-Income Population in Chattanooga City (TRBAM-24-04508) - A302

Shadi Tehrani/Vanderbilt University, Chandra Ward/Vanderbilt University, Paul Speer/Vanderbilt University, Megan Crawford/Vanderbilt University, Abhishek Dubey/Vanderbilt University, Philip Pugliese/Vanderbilt University, Savannah Ward/Vanderbilt University

Ways of Increasing Transit Ridership: Lessons Learned from Successful Transit Agencies (TRBAM-24-04837) - A293

Justyna Kaniewska/University of Utah, Reid Ewing/University of Utah, S. Hassan Ameli/University of Utah, Nawshin Tabassum/University of Utah, Hannaneh Kalantari/University of Utah, Wookjae Yang/University of Utah, Noshin Promy/University of Utah

Spatial Heterogeneity of Horizontal and Vertical Demand Supply Equity on Public Transit (TRBAM-24-05741) - A300

Nayeon Kim/Chungbuk National University, Tai-jin Song/Chungbuk National University, Minsu Won/Chungbuk National University, Junho Hong/Chungbuk National University

Longitudinal Analysis of COVID-19 Impacts on Urban Transit: A Comparative Study of Subway and Taxi Ridership in New York City (TRBAM-24-03174) - A301

Dan Qiang/McGill University, Grant McKenzie/McGill University

3174



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Innovations in Transit Planning and Operations

Abubakr Ziedan, CDM Smith, presiding

Sponsored By Standing Committee on Public Transportation Planning and Development, Standing Committee on Transit Management and Performance, Standing Committee on Innovative Public Transportation Services and Technologies

Posters in this session will cover factors and methods of interest for public transportation planning and operations, including transit priority strategies, bus service effectiveness, how urban rail expansions affect road congestion, and achievements in European transit research and innovation.

Dynamic Effect of Subway Expansion on the Spatial and Temporal Distribution of Road Congestion (TRBAM-24-00259) - A280

Xiaolong Li/Hong Kong Polytechnic University, Xiaowen Fu/Hong Kong Polytechnic University, Daqing Gong/Hong Kong Polytechnic University

Public Transport Innovation: An Assessment and Outlook from European Research and Innovation Projects (TRBAM-24-03356) - A281

Marcin Stepniak/European Commission Joint Research Centre, Ilias Cheimariotis/European Commission Joint Research Centre, Konstantinos Gkoumas/European Commission Joint Research Centre

Spatial Heterogeneity of Bus Service Effectiveness and Its Factors: A Machine Learning Analysis (TRBAM-24-03824) - A282

Zili Tian/Tongji University, Jiaorong Wu/Tongji University, Xiang Liu/Tongji University, Hongyuan Wang/Tongji University, Yongqi Deng/Tongji University

Sustainable Development Strategies and Operational Suggestions for Public Transportation in Small and Medium-Sized Cities: Lessons from the Public Transport Priority Actions in Suzhou City (TRBAM-24-04130) - A283

Zhiyuan Mao/Nanjing Forestry University, Xingchen Yan/Nanjing Forestry University, Jun Chen/Nanjing Forestry University, Xiaofei Ye/Nanjing Forestry University, Tao Wang/Nanjing Forestry University, Yanqiu Zhang/Nanjing Forestry University

Prioritization of Strategies for Public Transport: A Multi-Criteria Intuitionistic Fuzzy TOPSIS Method (TRBAM-24-04600) - A290

Ayushi Shah/Sardar Vallabhbhai National Institute of Technology, Surat, Gaurang Joshi/Sardar Vallabhbhai National Institute of Technology, Surat, Manoranjan Parida/Sardar Vallabhbhai National Institute of Technology, Surat

3175



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Land Use, Transit-Oriented Development, and Transit Ridership

Jennifer Monaco, Virginia Department of Rail and Public Transportation, presiding

Sponsored By Standing Committee on Public Transportation Planning and Development, Standing Committee on Innovative Public Transportation Services and Technologies

The connection between transportation and land use is well-known. Dig deeper by examining posters that describe analyses of transit-oriented development, weekend ridership and land use, onboard crowding and new urbanism, and ride-hailing trips and the built environment.

Nonlinear Relationship Between the Built Environment and Metro Ridership on Weekends: A Case Study in Shanghai (TRBAM-24-00184) - A322

Bozhezi Peng/Shanghai Jiao Tong University, Yi Zhang/Shanghai Jiao Tong University, Chaoyang Li/Shanghai Jiao Tong University, Tao Wang/Shanghai Jiao Tong University

Ex-Post Assessment of Public Transport Onboard Crowding Induced by New Urban Development (TRBAM-24-00254) - A321

Anastasios Skoufas/KTH Royal Institute of Technology, Matej Cebecauer/KTH Royal Institute of Technology, Wilco Burghout/KTH Royal Institute of Technology, Erik Jenelius/KTH Royal Institute of Technology, Oded Cats/KTH Royal Institute of Technology

Urban Land Use Change Simulation Influenced by Transit-Oriented Development Based on RF-CA (TRBAM-24-00484) - A323

Qiaoling Fang/Kyushu University, Tomo Inoue/Kyushu University

An Evaluation of Transit-Oriented Development Using Analytic Network Process with 10D Approach (TRBAM-24-01209) - A333

Kadali Raghuram/National Institute of Technology Warangal, Ms. Reddi Rani Nagathathagari/National Institute of Technology Warangal, Saladi S.V. Subbarao/National Institute of Technology Warangal

Investigating the Nonlinear Effect of Built Environment Factors on the Public Transit Index Considering the Modifiable Areal Unit Problem by Machine Learning Method (TRBAM-24-01712) - A332

Zhenbao Wang/Hebei University of Engineering, Shuyue Liu/Hebei University of Engineering, Shihao Li/Hebei University of Engineering, Dong Liu/Hebei University of Engineering, Yanfang He/Hebei University of Engineering

Examining Nonlinear and Spatial Heterogeneity Relationships Between Ridehailing Trips and Urban Built Environments (TRBAM-24-05166) - A331

Zhuangbin Shi/Kunming University of Science and Technology, Chuanjiang Zhao/Kunming University of Science and Technology, Yang Liu/Kunming University of Science and Technology, Wenqin Pan/Kunming University of Science and Technology

3176



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Freight Demand and Choice Modeling Using Advanced Data Sets

Zahra Pourabdollahi, RS&H, Inc., presiding

Monique Stinson, OST-R/Bureau of Transportation Statistics, presiding

Sushant Sharma, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Freight Transportation Planning and Logistics, Subcommittee on Freight Modeling

This poster session brings in fifteen selected papers that use freight modeling for solving issues.

How Do Trucks Make Route Choice?: A Novel Modeling Approach Considering Temporal Differences (TRBAM-24-03962) - B602

Jihao Deng/University of Waterloo, Mingshu Tian/University of Waterloo, Quan Yuan/University of Waterloo, Tianhao Li/University of Waterloo, Xiaohong Chen/University of Waterloo, Zhiwei Yang/University of Waterloo

Unraveling Variations in Truck Route Choices: A Comparative Analysis of Different Travel Distance Scenarios Using an Enhanced Random Parameters Logit Model (TRBAM-24-03954) - B603

Zhiwei Yang/Tongji University, Mingshu Tian/Tongji University, Quan Yuan/Tongji University, Tianhao Li/Tongji University, Xiaohong Chen/Tongji University, Jihao Deng/Tongji University

Exploratory Analysis of Factors Affecting Home Delivery Returns (TRBAM-24-05832) - B604

Michael Bronson/Portland State University, Miguel Figliozzi/Portland State University, Ali Riahi Samani/Portland State University, Sabyasachee Mishra/Portland State University

Evaluating Consumers' Shopping and Delivery Preferences by Developing a Disaggregated E-Commerce Demand Model Using Extended Multiple Discrete Continuous Extreme Values Framework (TRBAM-24-05587) - B605

Ali Riahi Samani/University of Memphis, Sabyasachee Mishra/University of Memphis, Ahmadreza Talebian/University of Memphis, Mihalis Golias/University of Memphis

A Comprehensive Business Location Choice Model Leveraging Machine Learning in Systematic Choice Set (TRBAM-24-06159) - B606

Niaz Mahmud/Dalhousie University, Muhammad Habib/Dalhousie University

Characterization and Assessment of Agglomeration of Businesses Establishments: A Combination of Machine Learning and Spatial Statistics Approach (TRBAM-24-06129) - B607

Niaz Mahmud/Dalhousie University, Muhammad Habib/Dalhousie University

Post-Infrastructure Investment and Jobs Act State Freight Plans: Equity Goals, Analysis, and Performance (TRBAM-24-04995) - B608

Christopher Lindsey/Cambridge Systematics, Clay Barnes/Cambridge Systematics, Elaine McKenzie/Cambridge Systematics, Christopher Lamm/Cambridge Systematics

Post-Purchase Trips Heterogeneity: Exploring the Impact of Free and Paid Return Deliveries on Shopping and Transport Mode Choices in the United States (TRBAM-24-00597) - B609

Oleksandr Rossolov/University of Natural Resources and Life Sciences, Jose Holguin-Veras/University of Natural Resources and Life Sciences, Yusak Susilo/University of Natural Resources and Life Sciences

Spatio-Temporal Distribution Patterns of Logistics Facilities in Medium-Sized Metropolitan Areas (TRBAM-24-05503) - B613

Sowjanya Dhulipala/Indian Institute of Technology, Bombay, Sabyasachee Mishra/Indian Institute of Technology, Bombay

Examining Injury Trends in Parcel Delivery Drivers in the United States: Challenges and Opportunities (TRBAM-24-00225) - B614

Evan Iacobucci/University of North Carolina, Chapel Hill, Noreen McDonald/University of North Carolina, Chapel Hill, Rebecca Naumann/University of North Carolina, Chapel Hill, Kristen Kucera/University of North Carolina, Chapel Hill

Framework for Reducing Freight Survey Resources Through the Use of Spatial Transferability (TRBAM-24-00445) - B615

Bhavani Shankar Balla/Birla Institute of Technology and Science, Hyderabad, Prasanta Sahu/Birla Institute of Technology and Science, Hyderabad, Agnivesh Pani/Birla Institute of Technology and Science, Hyderabad

Teaching Freight Mode Choice Models New Tricks Using Interpretable Machine Learning Methods (TRBAM-24-02661) - B616

Xiaodan Xu/Lawrence Berkeley National Laboratory, Hung-Chia Yang/Lawrence Berkeley National Laboratory, Kyungsoo Jeong/Lawrence Berkeley National Laboratory, William Bui/Lawrence Berkeley National Laboratory, Srinath Ravulaparthi/Lawrence Berkeley National Laboratory, Haitam Laarabi/Lawrence Berkeley National Laboratory, Zachary Needell/Lawrence Berkeley National Laboratory, C. Anna Spurlock/Lawrence Berkeley National Laboratory

Logistics Sprawl and Exploration of Its Influencing Factors: A Spatio-Temporal Perspective (TRBAM-24-05551) - B617

Sowjanya Dhulipala/Indian Institute of Technology, Bombay, Sabyasachee Mishra/Indian Institute of Technology, Bombay

Is there Equitable Access to Retail in the Greater Los Angeles Area? (TRBAM-24-04433) - B618

Juan López/University of California, Davis, Maria Valencia-Cardenas/University of California, Davis, Miguel Jaller/University of California, Davis

Does Proximity Matter?: An Analysis of West Seattle Shopping Trends (TRBAM-24-05914) - B619

Rishi Verma/University of Washington, Seattle, Giacomo Dalla Chiara/University of Washington, Seattle, Anne Goodchild/University of Washington, Seattle

3177



Tuesday, 01:30 p.m. - 03:15 p.m., Convention Center, Hall A

Agriculture and Food Transportation Research

James Nolan, University of Saskatchewan, presiding

Sponsored By Standing Committee on Agriculture and Food Transportation

Modeling the On-Demand Food Delivery Service Considering the Service Region with Adjustable Size and Bundling Delivery (TRBAM-24-01272) - B612

Kaihang Zhang/University of Hong Kong, Jintao Ke/University of Hong Kong, Hai Wang/University of Hong Kong, Yafeng Yin/University of Hong Kong

3178

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon B

What's New at the National Highway Traffic Safety Administration, Part 2 (Part 1, Session 3121)

Nanda Srinivasan, National Highway Traffic Safety Administration (NHTSA), presiding

Sponsored By Safety and Operations Group

This is the second in a series of two panels presenting new research findings from the National Highway Traffic Safety Administration (NHTSA). This panel of research psychologists from NHTSA's Office of Behavioral Safety Research will present results from recently complete traffic safety research projects that use novel or innovative approaches to examine bicyclist and pedestrian safety, alcohol-impaired driving, child passenger safety, behavioral countermeasures, and equity.

Recent Research on Pedestrian and Bicyclist Safety (P24-21364)

Kristie Johnson/National Highway Traffic Safety Administration (NHTSA)

Evaluation of North Dakota's 24/7 Sobriety Program (P24-21365)

Kathryn Wochinger/National Highway Traffic Safety Administration (NHTSA)

Child Passenger Safety Perceptions and Practices in Ridesharing Vehicles (P24-21366)

Kathy Sifrit/National Highway Traffic Safety Administration (NHTSA)

Making "Countermeasures That Work" Work for You (P24-21367)

Jessica Fry/National Highway Traffic Safety Administration (NHTSA)

Equity as a Department of Transportation Priority (P24-21368)

Debbie Sweet/National Highway Traffic Safety Administration (NHTSA)

3179

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 103A

Walkability and Pedestrian Accessibility

Sirisha Kothuri, Portland State University, presiding

Sponsored By Standing Committee on Pedestrians

This lectern session will highlight research on defining, measuring, and visualizing walkability and pedestrian accessibility.

Redefining Walkability Capturing and Investing in Pedestrian, Bike, and Street Level Design Features to Make It Safe to Walk and Bike (TRBAM-24-02458)

Behram Wali/Urban Design 4 Health, Inc., Lawrence Frank/Urban Design 4 Health, Inc.

Connectivity Ratios: Metrics and Applications of Measuring Walking and Biking Connectivity (TRBAM-24-02689)

David Wasserman/Alta Planning + Design, Kim Voros/Alta Planning + Design, Kelly Dunn/Alta Planning + Design

Pedestrian Accessibility in Montreal: The Determining Factors and the Level of Social Equity (TRBAM-24-02970)

Julien Verdier/Polytechnique Montréal, E.O.D Waygood/Polytechnique Montréal, Geneviève Boisjoly/Polytechnique Montréal

Walkable and Safe Route to Transit for Pedestrians in Greater Montreal: An Environmental Justice Approach (TRBAM-24-04146)

Philippe Brodeur-Ouimet/Institut National de la recherche scientifique, Marie-Soleil Cloutier/Institut National de la recherche scientifique

(continued)

Improving Walkability in Beirut: An Approach Using Pedestrian Modeling, Participatory Design, and Scenario Analysis (TRBAM-24-03376)

Andres Sevtsuk/Massachusetts Institute of Technology, Justin Kollar/Massachusetts Institute of Technology, Daniel Pratama/Massachusetts Institute of Technology, Rounaq Basu/Massachusetts Institute of Technology, Abdulaziz Alhassan/Massachusetts Institute of Technology, Bahij Chancey/Massachusetts Institute of Technology, Jawad Haddad/Massachusetts Institute of Technology, Mohamad Halabi/Massachusetts Institute of Technology, Rawad Makhoulouf/Massachusetts Institute of Technology, Maya Abou Zeid/Massachusetts Institute of Technology

3180

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 102B

2024 Freeway Operations Student Research Needs Challenge

Beverly Kuhn, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Freeway Operations

The intent of the Freeway Operations Student Research Needs Challenge is to promote research ideas that can bring innovation in traffic management and the application of promising results to operational systems. Additionally, this challenge helps to foster cooperation, coordination, and information dissemination between individuals and groups active in freeway traffic management and advanced technologies. This session will feature the finalists in the student research needs challenge geared toward encourage innovation and creative thought in the freeway operations community. Contest participants will receive the opportunity to vet their research needs ideas in a public forum during the TRB Annual Meeting.

Digital Twin Testbed for Freeway Corridors Control (P24-20931)

Junyi Ji/Vanderbilt University

Analysis of Freeway On-Ramp Vehicle Merging Behavior Using Automated Vehicle Trajectories from Connected Vehicle Data (P24-20932)

Jianyuan Xu/University of Nevada, Reno

Autonomous Integrated Public Transportation (P24-20933)

Renan Favero/University of Florida

3181

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon A

Technology to Improve Performance of Managed Lanes

Keith Mullins, Gannett Fleming, Inc., presiding

Sponsored By Standing Committee on Managed Lanes

Madison Beltline Flex Lane Feasibility Analysis and Post-Implementation Performance (TRBAM-24-00887)

Joseph Urban/Strand Associates, Inc., Ruchi Dutta/Strand Associates, Inc.

Before and After Comparison: Operational and Safety Impacts of Part-Time Use of the Inside Shoulder (TRBAM-24-03917)

Qiuqi Cai/Michigan State University, Hisham Jashami/Michigan State University, Megat Usamah Megat Johari/Michigan State University, Peter Savolainen/Michigan State University, Timothy Gates/Michigan State University, Eva Kassens-Noor/Michigan State University

Colorado's Lane Diversion Detection Technology Application to Improve Safety Within Managed Lanes (P24-20782)

Kelly Brown/Colorado Department of Transportation

U.S. Department of Transportation's Cooperative Driving Automation Freeway Applications (P24-20783)

Amir Ghiasi/Leidos, Inc.

3182

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon C

Advancements in Traffic Signing for Human Drivers and Connected and Automated Vehicles

Justice Appiah, Virginia Transportation Research Council, presiding

Sponsored By Standing Committee on Traffic Control Devices

This session features a variety of research topics related to traffic signing and messaging, including driver response to DMS messages and bridge deck weather warning signs and factors that influence traffic sign recognition by automated vehicles.

Evaluation of Bridge Deck Winter Weather Warning Signs on Driver Speeds (TRBAM-24-03094)

Sagar Keshari/Michigan State University, Md Mahmud/Michigan State University, Sakar Pahari/Michigan State University, Myles Overall/Michigan State University, Dario Babic/Michigan State University, Magdalena Cavka/Michigan State University, Sarah Premo/Michigan State University, Timothy Gates/Michigan State University, Peter Savolainen/Michigan State University

The Impact of Dynamic Message Sign Textual Content on Changes in Vehicle Speed: Observations with Connected Vehicle Data (TRBAM-24-04969)

Dorcas Okaidjah/Iowa State University, Christopher Day/Iowa State University

Analysis of the Factors Influencing Traffic Sign Recognition Based on Multi-Sensor Perception Data (TRBAM-24-05072)

Junyu Huo/Tongji University, Xuesong Wang/Tongji University, Qian Liu/Tongji University, Zhongren Wang/Tongji University, Xiaolei Zhu/Tongji University

Assessing the Impact of Traditional Traffic Control Devices on Wrong-Way Driving Incidents at Interchange Off-Ramps (TRBAM-24-01416)

Huaguo Zhou/Auburn University, Qing Chang/Auburn University, Yukun Song/Auburn University

3183

CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 150B

Tourism Impact on the Urban Road Network

Jason McGlashan, HDR, presiding

Sponsored By Standing Committee on Transportation Needs of National Parks and Public Lands, City Transportation Issues Coordinating Council

Urban road networks handle a significant amount of traffic, whether from daily commuter travel or peak season visitation. In this session, attendees will hear about international and domestic examples of addressing these layered impacts.

Exploring the Impact of Urban Road Network Development on City Fringe Tourist Areas: A Case Study of Xi'an, China (TRBAM-24-04931)

Hongtao Zhang/Xi'an University, Congying Li/Xi'an University, Jiahao Fan/Xi'an University, Kaituo Yun/Xi'an University, Jiayi Wu/Xi'an University

Variation in Transportation Usage in Urban Regions Due to Seasonal Recreation Activity: Examples from the Northeastern States (P24-20819)

Jonathan Peters/City University of New York

Planning for Peak Bloom: Cherry Blossom Festival Transportation Management (P24-20820)

T. Ryan Yowell/U.S. National Park Service (NPS)

3184

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 150A

Big Data Approaches in Travel Surveys

Catherine Morency, Ecole Polytechnique de Montreal, presiding

Sponsored By Standing Committee on Travel Survey Methods

The sources and amounts of Big Transportation Data seem to be growing by the day. This session looks at a number of papers that look at how passively collected data (GSM, GPS, Google Location and Smart Card approaches) can be used and fused for use in travel analysis.

Analyzing the Reporting Error of Public Transport Trips in the Danish National Travel Survey Using Smart Card Data (TRBAM-24-02070)

Georges Sfeir/Technical University of Denmark, Filipe Rodrigues/Technical University of Denmark, Maya Abou Zeid/Technical University of Denmark, Francisco Pereira/Technical University of Denmark

Deriving Weeklong Activity Travel Dairy from Google Location History: Survey Tool Development and a Field Test in Toronto (TRBAM-24-02489)

Melvyn Li/University of Toronto, Kaili Wang/University of Toronto, Yicong Liu/University of Toronto, Khandker Habib/University of Toronto

A Bias Paradox: An Evaluation of Data Representativeness and Effects of Smartphone Privacy Restrictions on Passively Generated Mobile Phone Data (TRBAM-24-02784)

Gretchen Bella/Northwestern University, Tianxing Dai/Northwestern University, Peeter Kivestu/Northwestern University, Yu Nie/Northwestern University, Amanda Stathopoulos/Northwestern University

Striking a Balance: Enhancing Survey Accuracy While Reducing Respondent Burden Through Co-Training Algorithm for Travel Mode Detection (TRBAM-24-02954)

Reem Alolabi/Hiroshima University, Makoto Chikaraishi/Hiroshima University

Making Large-Scale, Semi-Passive GPS Travel Diaries Valuable: A Quality Enhancement Method (TRBAM-24-03838)

Victoria Dahmen/Technical University of Munich, Santiago Álvarez-Ossorio Martínez/Technical University of Munich, Allister Loder/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

3185

CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 152B

Design and Operations of Transportation and Electrification Networks

Leila Hajibabai, North Carolina State University, presiding

Sponsored By Standing Committee on Transportation Network Modeling

The research area of transportation network modeling faces many new challenges. Join our speakers to learn about their novel approaches to transportation network design, operations, and dynamic control, including those on complex coupling of transportation and energy infrastructures in the era of electrification.

Low-Rank Approximation of Path-Based Traffic Network Models (TRBAM-24-00728)

Pengji Zhang/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

An E-Scooter Service Region and Fleet Allocation Design Problem with Elastic Demand (TRBAM-24-00260)

Marco Giordano/New York University, Joseph Chow/New York University

Dynamic Traffic Assignment with Physics-Informed Deep Learning (TRBAM-24-02597)

Shakiba Naderian/University of Washington, Ohay Angah/University of Washington, Yiran Zhang/University of Washington, Xuegang Ban/University of Washington

A Backtracking Algorithm for Solving the Nearly Equitable Strong Edge Coloring Problem on Transportation Network (TRBAM-24-03791)

Kai Zhang/Southeast University, Yu Dong/Southeast University, Zhiyuan Liu/Southeast University

Joint Optimization of Station Locations, Trip Assignment, and Charging Schedules for Electric Buses Using Variable Neighborhood Search (TRBAM-24-06046)

Rito Nath/Indian Institute of Science (IISc), Tarun Rambha/Indian Institute of Science (IISc), Maximilian Schiffer/Indian Institute of Science (IISc)

(continued)

Strategic Charging Infrastructure Planning for Transportation Mobility and Power Grid Efficiency: A Bi-Level Optimization Framework (TRBAM-24-05857)

Sina Baghali/University of Central Florida, Zhaomiao Guo/University of Central Florida, Weijun Xie/University of Central Florida, Saman Mazaheri-Khamaneh/University of Central Florida

A Dynamic Coordinated Joint Routing and En Route Charging Mechanism for Traffic Congestion Mitigation (TRBAM-24-05800)

Yuqiang Ning/University of Florida, Lili Du/University of Florida

Joint Optimization of Transportation Energy Systems Through Electric Vehicle Charging Pricing in the Morning Commute (TRBAM-24-05623)

Kevin Freymiller/Carnegie Mellon University, Junjie Qin/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

A Link-Based Dynamic System Optimum with Lane-Change Traffic and Queue Spillbacks (TRBAM-24-02180)

Yuchen Wang/Southeast University, Jiulonghu, Hao Yu/Southeast University, Jiulonghu, Yu Han/Southeast University, Jiulonghu, Zhenning Li/Southeast University, Jiulonghu, Siwei Wan/Southeast University, Jiulonghu

Is Order-2 Proportionality Good Enough for Approximating the Most Likely Path Flow in User Equilibrium Traffic Assignment? (TRBAM-24-03379)

Liyang Feng/Southwest Jiaotong University, Jun Xie/Southwest Jiaotong University, Xiaobo Liu/Southwest Jiaotong University, Youhua Tang/Southwest Jiaotong University, David Wang/Southwest Jiaotong University, Yu Nie/Southwest Jiaotong University

3186 CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 151A

Considering Cumulative Effects and Environmental Justice in the National Environmental Policy Act Process

Meridith Krebs, Kimley-Horn and Associates, Inc., presiding

Kris Gade, Arizona Department of Transportation, presiding

Sponsored By Standing Committee on Environmental Analysis and Ecology

Decisionmakers are recognizing the importance of looking at projects in the context of prior impacts and developments within the community/region. Direct effects continue to be most important to decisionmakers. Nonetheless, the importance of other environmental stressors requires the need to address cumulative impacts on environmental justice (EJ) populations. The purpose of the session is to increase understanding of cumulative effects consideration of EJ populations in the NEPA review. The specific focus is understanding cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions that, for many EJ populations, may last for years beyond the life of the action that caused the effects.

Presentation (P24-20901)

Carolyn Nelson, P.E./Pipeline and Hazardous Materials Safety Administration (PHMSA)

Presentation (P24-20902)

Denise Freeman/Department of Energy: US Department of Energy

Presentation (P24-20903)

Stan Buzzelle/U.S. Environmental Protection Agency (EPA)

3187

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 152A

Transportation Asset Data Technology Systems

Trisha Stefanski, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Transportation Asset Management

Asset management is rooted in the ability to obtain and properly manage accurate asset data, condition data, and other information that results in the development of strategies for decision-making. This session will explore the use of different technology systems to advance the state of practice of creating and maintaining asset data records that lead to effective asset management practices. The speakers will explore different ongoing efforts, their use of technology and the application and integration within their asset management program and practices.

Value and Potential of Satellite-Based Inspections to Inform Transportation Asset Management Decisions (P24-20617)

Cristina Torres-Machi/University of Colorado, Boulder

North Carolina Department of Transportation's Use of ArTEMIS: An Advanced Artificial Intelligence- and Machine Learning-Based Digital Twin of Its Highway System (P24-20616)

Kristin Barnes/North Carolina Department of Transportation

Using Information from Vehicles to Assess Asset Condition (P24-20614)

Gerardo Flintsch/Virginia Polytechnic Institute

3188

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 151B

Implementation of Workforce Development Papers

Stephen Cohn, Colorado Department of Transportation, presiding

Sponsored By Standing Committee on Research Innovation Implementation Management, Standing Committee on Workforce Development and Organizational Excellence, Transportation Infrastructure Group

After hearing about each of the chosen papers, respondents will brainstorm, discuss, and develop strategies to ensure workforce practitioners require and researchers contemplate knowledge and technology transfer options for each research project and, if appropriate, set aside resources so implementation is possible once the research project is complete. Each of the three papers will be presented (focus on results, not the methods) then discussed (responses and audience discussion).

A Framework for the Development of a Diverse Transportation Workforce in the Southeast Region (TRBAM-24-05653)

Steven Click/Tennessee Technological University, Mehri Mohebbi/Tennessee Technological University, Ruth Steiner/Tennessee Technological University, Virginia P. Sisiopiku/Tennessee Technological University, Mohammed Hadi/Tennessee Technological University, Dimitra Michalaka/Tennessee Technological University, Muhammed Sherif/Tennessee Technological University, James Martin/Tennessee Technological University, Jeremy Griffith/Tennessee Technological University

Implementation Response (P24-20511)

Tyson Rupnow/Louisiana Department of Transportation and Development

A Living Case Study: Plight of A New American Seeking Employment in the U.S. Architecture, Engineering, and Construction Industry (TRBAM-24-02936)

Arthur Antoine/Mott MacDonald, LLC, Anthony Cherwinski/Mott MacDonald, LLC

Implementation Response (P24-20513)

Corey Foster/Arizona Associated General Contractors

Workforce Forecasting for State Transportation Agencies: A Machine Learning Approach (TRBAM-24-02078)

Adedolapo Ogungbire/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville

Implementation Response (P24-20516)

Pei-Sung Lin/University of South Florida

3189

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 201

CANCELLED - Toxics in Transportation

Julie Wilson-McNerney, Schwabe, Williamson & Wyatt, presiding

Edward Boling, Perkins Coie, LLP, presiding

Sponsored By Standing Committee on Environmental Issues in Transportation Law

In 2022, the University of Washington linked impacts to declines in Northwestern coho salmon populations to 6PPD, a chemical in tires that slows their wear and tear, appearing in stormwater runoff from roads. Electric vehicle use could make this problem worse. EVs are designed to brake in a way that creates more friction to capture more energy, which means EV tires wear more quickly even with 6PPD. This panel will explore issues of toxics in transportation, such as 6PPD and tailpipe emissions, and their intersection with the Endangered Species Act, the Clean Air Act, and other environmental laws.

3190

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 156

Steel Bridges: Field Investigations, Rehabilitation, and Preservation

Deanna Nevling, HDR, presiding

Duncan Paterson, Alfred Benesch & Company, presiding

Sponsored By Standing Committee on Steel Bridges, Standing Committee on Testing and Evaluation of Transportation Structures, Standing Committee on Fabrication and Inspection of Metal Structures, Standing Committee on Structures Maintenance, Standing Committee on Bridge Preservation

This steel bridge session will begin with a case study that summarizes a project for the Tennessee Department of Transportation (TDOT), which focused on the behavior of a girder-stringer-floorbeam bridge to produce refined load ratings and included strain gauges, weighing and measuring trucks, and load testing. The second presentation explores a repair method, "Sandwich Panel," which has been evaluated experimentally by conducting seven large-scale experiments. The session will wrap up with a final presentation on experimental work using LiDAR and 3D Scanning for steel section loss assessment.

Experimental Behavior of a Steel Girder-Stringer-Floorbeam Bridge: Case Study (TRBAM-24-00135)

Matthew Yarnold/Auburn University, Andrew Moore/Auburn University, Craig Henderson/Auburn University, Tim Huff/Auburn University, Rebecca Hayworth/Auburn University

Determining a Relationship Between Real Section Loss and Surface Delamination of Corroded Beam Ends (P24-20512)

Aidan Provost/University of Massachusetts, Amherst

Experimental Evaluation of the "Sandwich Panel" Repair Method for Corrosion-Damaged Bridge Girders (TRBAM-24-05549)

Anna Tarasova/HNTB Corporation, Deven Kanakamedala/HNTB Corporation, Jungil Seo/HNTB Corporation, Amit Varma/HNTB Corporation, Robert Connor/HNTB Corporation

3191

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 202A

Recent Developments and Trends in Quality Assurance, Part 2 (Part 1, Session 3082)

Dimitrios Goulias, University of Maryland, College Park, presiding

Sponsored By Standing Committee on Quality Assurance Management

Practical Assessment of Workability and Resistance to Rutting and Cracking of Hot Mix Asphalt (P24-21048)

Hussain Bahia/University of Wisconsin, Madison

Current Challenges Related to the Use of Balanced Mix Design Tests in Quality Assurance (P24-21049)

Elie Hajj/University of Nevada, Reno

Balanced Mix Design, Quality Assurance Challenges, and Progress in Texas (P24-21050)

Amy Martin/Texas A&M University

Impacts of Ignition Furnace Correction Factor Errors to Quality Assurance of Asphalt Mixtures (TRBAM-24-00434)

Derek Nener-Plante/Federal Highway Administration (FHWA), Casey Nash/Federal Highway Administration (FHWA), James Robinson/Federal Highway Administration (FHWA)

3192

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 207A

Advancements in Stormwater Management: Innovations, Assessments, and Monitoring Techniques

Michael Perez, Auburn University, presiding

Sponsored By Standing Committee on Hydrology, Hydraulics, and Stormwater

Viscosity, Streaming Current Value, and Settling Velocity as Techniques to Detect Flocculant Dosage in Construction Stormwater Runoff (TRBAM-24-05913)

Jannell Clampitt/Auburn University, Michael Perez/Auburn University, Wesley Donald/Auburn University, Billur Kazaz/Auburn University, Xing Fang/Auburn University

(continued)

Large-Scale Performance Evaluation of Various Woven Silt Fence Installations Under Nebraska Highway Conditions (TRBAM-24-05615)

Brian Roche/Auburn University, Michael Perez/Auburn University, Wesley Donald/Auburn University, J. Blake Whitman/Auburn University

Development of the North Carolina Stormwater Treatment Decision-Support System by Using the Stochastic Empirical Loading and Dilution Model (P24-20883)

Andrew McDaniel/North Carolina Department of Transportation, Gregory Granato/Federal Highway Administration (FHWA)

The Latest on the Waters of the United States (P24-21180)

Richard Darden/Federal Highway Administration (FHWA)

3193

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 207B

Advances in Geotechnical Lab and Field Instrumentation

Derrick Dasenbrock, Federal Highway Administration (FHWA), presiding

Thomas Oommen, University of Mississippi, presiding

Surya Congress, Michigan State University, presiding

Raul Velasquez, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Geotechnical Instrumentation and Modeling

This session highlights research in areas of geotechnical instrumentation in field and laboratory settings.

Laboratory-Scale Evaluation of Smart Pebble Sensors Embedded in Geomaterials (TRBAM-24-04611)

Syed Husain/University of Illinois, Urbana-Champaign, Mohammad Shoaib Abbas/University of Illinois, Urbana-Champaign,

Han Wang/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol

Tutumluer/University of Illinois, Urbana-Champaign, John Wallace/University of Illinois, Urbana-Champaign, Matthew

Hammond/University of Illinois, Urbana-Champaign

Measurement While Drilling Practices in the Illinois Subsurface: Soil Classification Using Machine Learning (TRBAM-24-05114)

Anshu Abhinav/University of Illinois, Urbana-Champaign, Michael Rodgers/University of Illinois, Urbana-Champaign, Scott

Kassel/University of Illinois, Urbana-Champaign, Bradley Hessing/University of Illinois, Urbana-Champaign, Tugce

Baser/University of Illinois, Urbana-Champaign

Updates on a U.S. Standard for MWD (P24-20821)

Benjamin Rivers/Federal Highway Administration (FHWA), Mary Nodine/Federal Highway Administration (FHWA)

3194

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 204AB

Recycled Plastics in Asphalt Pavements

Sadie Casillas, U.S. Army Engineer Research and Development Center, presiding

Sponsored By Standing Committee on Asphalt Materials Selection and Mix Design, Standing Committee on Production and Use of Asphalt

Join us for an enlightening session exploring the latest developments in utilizing recycled plastics in asphalt pavements. We'll begin by diving into current practices and possibilities, followed by a real-world case study on plastics' impact on asphalt mixtures. Gain insights into transportation departments' perspectives on performance, safety, and the environment. Then the session will conclude with a framework for evaluating recycled materials in asphalt, with a focus on plastics. Don't miss this opportunity to gain a fresh perspective on using recycled plastics in asphalt pavements.

Consensus Study Report on Recycled Plastics in Infrastructure: Current Practices, Understanding, and Opportunities (P24-20113)

Randy West/Auburn University

Impact of Plastics on Asphalt Mix Design and Field Performance: A Case Study (P24-20114)

Tom Bennert/Rutgers University

Plastics in Asphalt: A U.S. Department of Transportation Perspective on Performance, Safety, and the Environment (P24-20115)

Jhony Habbouche/Virginia Transportation Research Council, Lewis Lloyd/Virginia Department of Transportation

(continued)

Framework for Evaluating Recycled Materials Use in Asphalt Mixtures and How That Applies to Plastics (P24-20116)

James Willis/National Asphalt Pavement Association

3195

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 209AB

Research and Novel Technologies Related to Concrete Materials

Gabriel Arce, Virginia Department of Transportation, presiding

Anton Schindler, Auburn University, presiding

Sponsored By Standing Committee on Advanced Concrete Materials and Characterization

On the Physio-Chemical Characterization of Multi-Binder, Eco-Ultra-High Performance Concrete

(TRBAM-24-02444)

Bayezid Baten/University of Illinois, Urbana-Champaign, Nishant Garg/University of Illinois, Urbana-Champaign

Design and Real-Scale Application of Sustainable Road with Recycled Concrete Pavement (TRBAM-24-02542)

Manuel Rosales/University of Cordoba, Francisco Agrela/University of Cordoba, Manuel Cabrera/University of Cordoba,

Santiago Moreno/University of Cordoba, Julia Rosales/University of Cordoba

Reclaimed Asphalt Pavement Incorporated Geopolymer Concrete Pavement: A Comprehensive Study on

Mechanical and Microstructural Properties (TRBAM-24-06165)

AYANA GHOSH/Indian Institute of Technology, Roorkee, Gondaimei Rongmei Naga/Indian Institute of Technology,

Roorkee, PRAVEEN KUMAR/Indian Institute of Technology, Roorkee

Evaluation of Fresh Properties of High Calcuim Content Fly Ash–Based, Alkali-Activated 3D Printed Mortar

(TRBAM-24-05976)

Fareh Abudawaba/Missouri University of Science and Technology, Eslam Gomaa/Missouri University of Science and

Technology, Ahmed Gheni/Missouri University of Science and Technology, Dimitri Feys/Missouri University of Science

and Technology, Mohamed ElGawady/Missouri University of Science and Technology

Material Performance Analysis of Novel NdFeB-Cement Composites for Magnetic Encoding of Road

Environment Information (TRBAM-24-00365)

Yaowen PEI/Southeast University, Feng Chen/Southeast University, Tao Ma/Southeast University, Gonghui Gu/Southeast University

3196

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 101

Pavement Structural Evaluations: Accelerated Pavement Testing

Angel Mateos, University of California, Berkeley, presiding

Sponsored By Standing Committee on Pavement Structural Testing and Evaluation

Use of Distributed Fibre Optic Sensors for the Monitoring of an Accelerated Pavement Test (TRBAM-24-00221)

Paulina Leiva Padilla/Universite Gustave Eiffel, Xavier Chapeleau/Universite Gustave Eiffel, Mai-Lan Nguyen/Universite

Gustave Eiffel, Juliette blanc/Universite Gustave Eiffel, Samir Allam/Universite Gustave Eiffel, Emmanuel Loison/Universite

Gustave Eiffel, Pierre Hornych/Universite Gustave Eiffel

Assessment of Mechanical Performance of Electrically Conductive Asphalt Pavements Using Accelerated

Pavement Testing (TRBAM-24-03643)

Ashith Marath/Rowan University, Ahmed Saidi/Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan

University

Rutting Performance Evaluation of Balanced Mix Design Surface Mixtures with Conventional and High

Reclaimed Asphalt Pavement Contents Under Full-Scale Accelerated Testing (TRBAM-24-04083)

Bilin Tong/Virginia Polytechnic Institute, Jhony Habbouche/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia

Polytechnic Institute, Brian Diefenderfer/Virginia Polytechnic Institute

Study of the Multi-Scale Mechanical Evolution of Cement Stabilized Aggregate During Compaction Forming

and Destruction Using Smart Aggregate (TRBAM-24-00113)

Ning Wang/Southeast University, Tao Ma/Southeast University, Xunhao Ding/Southeast University, Feng Chen/Southeast

University

3197

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 102A

Pavement Surface Characteristics

Brian Schleppi, Private Consultant, presiding

Sponsored By Standing Committee on Pavement Surface Properties and Vehicle Interaction

Study on the Characteristics and Influencing Factors of Tire Pavement Noise: Numerical Simulation and Field Experiment (TRBAM-24-00427)

Xiaoling Zou/Chongqing Jiaotong University, Mengwei Zhang/Chongqing Jiaotong University, Yadong Xie/Chongqing Jiaotong University, Honglin He/Chongqing Jiaotong University, Bin Li/Chongqing Jiaotong University, Yanqiu Bi/Chongqing Jiaotong University, Zhimin Cong/Chongqing Jiaotong University, Mingjun Hu/Chongqing Jiaotong University

Evaluation of Texture Indexes Isotropy and 2D-3D Equivalency (TRBAM-24-01913)

Boris Goenaga/North Carolina State University, Christian Sabillon-Orellana/North Carolina State University, Benson Munywoki/North Carolina State University, Shane Underwood/North Carolina State University, Jorge Prozzi/North Carolina State University

Evaluation on Surface Characteristics of Florida Concrete Test Road and I-95 Longitudinal Grooving Project (TRBAM-24-02457)

Guangming Wang/Florida Department of Transportation, Richard Hewitt/Florida Department of Transportation, Hung-Wen (Oliver) Chung/Florida Department of Transportation, Charles Holzschuher/Florida Department of Transportation, Ohhoon Kwon/Florida Department of Transportation

Exploring the Impact of Pavement Friction Patterns on Crash Injury Severity Using Continuous Pavement Friction Measurement Data (TRBAM-24-04847)

Zhenyu Wang/University of South Florida, Huiqing Lyu/University of South Florida, Pei-Sung Lin/University of South Florida, Qing Lu/University of South Florida, Ping Hsu/University of South Florida, Emmeth Duran/University of South Florida

3198

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 103B

Tools and Technology for Managing and Examining Roadside Landscape Assets

Serena Alexander, U.S. Department of Transportation Office of the Under Secretary for Policy, presiding

Cheryl Daniels, Davey Resource Group, presiding

Sponsored By Standing Committee on Roadside Maintenance Operations, Standing Committee on Environmental Analysis and Ecology, Standing Committee on Landscape and Environmental Design, Subcommittee on Pollinators

Cheryl Daniels, Davey Resource Group, will give an update on the Tools and Technology of Roadside landscape Asset Management project. This active nationwide project has included surveys and multiple case studies to review tools and technology used for roadside landscape asset management. The project deliverable is a guidebook on the tools and technology currently available for planning and decision-making. Serena Alexander, U.S. Department of Transportation, shares information on, Examining the Externalities of Highway Capacity Expansions in California: An Analysis of Land Use and Land Cover Using Remote Sensing Technology. The study uses satellite remote sensing to see how highway expansion affects vegetation land coverage in California.

Tools and Technology for Roadside Landscape Asset Management Project Update (P24-20615)

Cheryl Daniels/Davey Resource Group, Angela Burdell/Davey Resource Group

Examining the Externalities of Highway Capacity Expansions in California: An Analysis of Land Use and Land Cover Using Remote Sensing Technology (TRBAM-24-04283)

Serena Alexander/U.S. Department of Transportation Office of the Under Secretary for Policy, Bo Yang/U.S. Department of Transportation Office of the Under Secretary for Policy, Owen Hussey/U.S. Department of Transportation Office of the Under Secretary for Policy

3199

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 209C

Pavement Condition and Impacts

Amy Simpson, WSP, presiding

Sponsored By Standing Committee on Pavement Management Systems

Pavement Condition Management Coupling with Skid Management at the Network Level: A Multi-Choice Goal Programming Approach (TRBAM-24-00677)

Md Al Amin/Texas Department of Transportation, Randy Machemehl/Texas Department of Transportation

The Effects of Interstate Spending on Pavement Condition and the Environment (TRBAM-24-03777)

Paula Cid Ornelas/University of British Columbia, Juan del Campo Yañez/University of British Columbia, Omar Sweil/University of British Columbia

Enhancing Reliability in Automated Pavement Condition Data: A Data Quality Check Approach for Highway Agencies (TRBAM-24-04797)

Xiaohua Luo/Texas State University, San Marcos, Jueqiang Tao/Texas State University, San Marcos, Feng Wang/Texas State University, San Marcos, Ajmain Faieq/Texas State University, San Marcos, Haitao Gong/Texas State University, San Marcos, FENG HONG/Texas State University, San Marcos

A Long-Term Field Performance Investigation of Asphalt Pavement Overlaid with Warm Mix Asphalt (TRBAM-24-06172)

Yuhui Zhou/Tongji University, Hongren Gong/Tongji University, Lin Cong/Tongji University

3200

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 206

Bridge Strength and Condition Evaluation

Mohamed ElBatanouny, Wiss, Janney, Elstner Associates, Inc., presiding

Sponsored By Standing Committee on Bridge Preservation, Standing Committee on Structures Maintenance

Strength and condition are key to long-term performance of highway bridges. From a strength perspective, this session will explore an approach for using weigh-in-motion data for bridge load rating, and a method for increasing capacity of existing bridge girders using near-surface mounted titanium alloy reinforcement. With respect to condition, nondestructive evaluation methods will be discussed for assessing bridge deck and prestressed girders.

Prediction of Maximum Live Load Effects for Bridges Based on Weigh-in-Motion Data (TRBAM-24-04960)

Patrick Lou/Rutgers University, Chan Yang/Rutgers University, Hani Nassif/Rutgers University

Laboratory Evaluation of Concrete Bridge Girders Flexural Strengthened with Near-Surface Mounted Titanium-Alloy Hooked Bars (TRBAM-24-04592)

Md Aminul Islam/Auburn University, Kadir Sener/Auburn University, Anton Schindler/Auburn University

Structured Light 3D Scanning Technology for Documenting Prestressed Concrete Beam End Conditions (TRBAM-24-06468)

Sanjoy Bhowmik/Western Michigan University, Naveen Ranasinghe/Western Michigan University, Yufeng Hu/Western Michigan University, Upul Attanayake/Western Michigan University

Automated Rebar Detection and Condition Assessment of Concrete Bridge Decks Using Ground Penetrating Radar (TRBAM-24-02202)

Nour Faris/Hong Kong Polytechnic University, Tarek Zayed/Hong Kong Polytechnic University, Ali Fares/Hong Kong Polytechnic University, Sherif Abdelkhalik/Hong Kong Polytechnic University, Eslam Abdelkader/Hong Kong Polytechnic University

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 146A

Advancing Sustainable and Equitable Access to Mobility in Developing Countries

Charles Rivasplata, San Jose State University, presiding

Joanna Moody, World Bank, presiding

Sponsored By Standing Committee on Transportation in the Developing Countries, Subcommittee on Roadway System Management and Operations, Safety, and Resilience, Subcommittee on Sustainable and Equitable Access and Mobility for All, International Coordinating Council

This conference session is focused on the critical theme of sustainable and equitable access to mobility for all. It brings together research and practical solutions that aim to address mobility challenges, promote inclusivity, and create opportunities through improved access to transport services. This session explores a diverse range of topics, from case studies on innovative mobility solutions to policies promoting equitable access to transport in developing countries.

Assessing Walkability in Dhaka's Central Business Districts (TRBAM-24-00675)

Fyrooz Anika Khan/Bangladesh University, Nawshin Tabassum/Bangladesh University

Ridehailing in Developing Countries: Use and Effects in Dhaka (TRBAM-24-03304)

Fariba Siddiq/University of California, Los Angeles, Brian Taylor/University of California, Los Angeles

Quality of Service Evaluation Indicator Selection for Bus-Based Transit Service Operations: A Multi-Criteria, Decision-Making Approach (TRBAM-24-02279)

Rohit Rathod/Sardar Vallabhbhai National Institute of Technology, Gaurang Joshi/Sardar Vallabhbhai National Institute of Technology, Shrinivas Arkatkar/Sardar Vallabhbhai National Institute of Technology

Commuting Mode Shifts Response to Temporary Closure of Metro Service During the COVID-19 Pandemic: Evidence from Tianjin, China (TRBAM-24-03114)

Shaofan Sun/Hebei University of Technology, Shengfang Niu/Hebei University of Technology, Jianbiao Wang/Hebei University of Technology, Hongjun Cui/Hebei University of Technology, Xinwei Ma/Hebei University of Technology

Multimodal Solid Waste Management Network with Transfer Stations: A Case Study of Medellin, Colombia (TRBAM-24-05592)

Felipe Aros-Vera/Ohio University, Mario Peñaranda-Márquez/Ohio University, Carlos Granada-Muñoz/Ohio University, Carlos Gonzalez-Calderon/Ohio University, John Posada-Henao/Ohio University

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 146B

Health and Equity at the Heart of Transportation Planning, Policy, and Practice

Rebecca Naumann, Centers for Disease Control and Prevention, presiding

Sponsored By Standing Committee on Transportation and Public Health

Over the last several decades, transportation planning and public health professionals have collaborated to improve the health and quality of life of populations through built environment policy and practice. This session will describe current collaborations between transportation planning and public health, including providing tangible case studies, frameworks, and recent research in this space to further support these relationships in an equity-centered manner. Specifically, in this session we will hear about and discuss: A county-level case study of specific steps taken to develop a "Health and Safety in All Policies" approach to overcome siloes in planning, public health, and other departments to increase the amount of coordination and resource allocation for integrating health promoting-practices aimed at improving a variety of outcomes. A new conceptual framework for examining public health and equity considerations in transportation planning at federal land management agencies. Specifically, the framework defines seven key steps in transportation planning and six types of public health and equity considerations that can be integrated in each step. We will discuss pilot test results and recommendations on how to use the framework in practice. Results from a human exposure model combined with a multimodal traffic assignment model to better understand scenarios in which trucks can operate to minimize their public health costs and impacts. Notable findings related to both health costs and equity impacts will be discussed. The current evidence base related to urban planning, design, boredom, and social connectedness in communities. Understanding current research related to how planning and design impacts boredom and social connection is imperative, given the widespread role that social connectedness plays in influencing numerous health outcomes.

Developing a Health and Safety in All Policies Approach: A Case Study in Clackamas County, Oregon (TRBAM-24-00866)

Abraham Moland/Clackamas County, Joseph Marek/Clackamas County

Considering Public Health and Equity Concerns in Transportation Planning at Federal Land Management Agencies (TRBAM-24-01249)

Michael Meyer/WSP, Allie Reilly/WSP, Owen Flood/WSP, Amit Armstrong/WSP, Karen Roof/WSP

Cargo Routing, Health Impacts, and Disadvantaged Communities (TRBAM-24-02414)

Sarah Dennis-Bauer/University of California, Davis, Anmol Pahwa/University of California, Davis, Miguel Jaller/University of California, Davis

Exploring the Nexus Between Urban Planning and Boredom: A Framework for Designing Stimulating and Socially Connected Communities (TRBAM-24-05795)

Hannah Kossoff/Florida International University, Daniel Frolich/Florida International University, Xia Jin/Florida International University

3203 CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 146C

Emerging Technologies and Mobility Options in Disaster Preparedness, Response, and Recovery

Ruijie Bian, Louisiana Transportation Research Center (LTRC), presiding

Diana Herriman, FEMA, presiding

Sponsored By Standing Committee on Disaster Response, Emergency Evacuations, and Business Continuity, Standing Committee on Bicycle Transportation, Standing Committee on Extreme Weather and Climate Change Adaptation

New technologies are transforming the transportation sector and bringing new mobility options. Our attention to destination access needs and health equity are sparking a revolution in multi-modal transportation development. How are these emerging technologies and mobility options influencing disaster preparedness, response, and recovery? How are equity factors are being considered as a part of this process?

Trails as Resilient Infrastructure (P24-20216)

Jeffrey Ciabotti/Toole Design Group, LLC

Equitable Mobility Strategies That Build Community Engagement and Resilience (P24-20217)

Nicole Boothman-Shepard/AECOM

Using Street-Level 360 Imagery Collections to Support Hurricane Response, Recovery, and Mitigation (P24-20228)

Mike Vorce/Site Tour 360

Exploring the Potential of Using Autonomous Vehicles for Evacuation Assistance (P24-20589)

Pamela Murray-Tuite/Clemson University

Understanding the Utilization of Real-Time Traffic Information During Hurricane Evacuations in Texas (TRBAM-24-01044)

Lu Xu/University of Texas, Austin, Kyle Bathgate/University of Texas, Austin, Jake Robbennolt/University of Texas, Austin, Jingran Sun/University of Texas, Austin, Shidong Pan/University of Texas, Austin, Zhe Han/University of Texas, Austin, Stephen Boyles/University of Texas, Austin

3204

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 140

Global Supply Chain Considerations of the Growing Electric Vehicle Market

Rebecca Dodder, U.S. Environmental Protection Agency (EPA), presiding

Sponsored By Standing Committee on Transportation Energy

Electric Vehicle Battery Chemistry Affects Supply Chain Disruption Vulnerabilities (TRBAM-24-02342)

Anthony Cheng/Carnegie Mellon University, Erica Fuchs/Carnegie Mellon University, Valerie Karplus/Carnegie Mellon University, Jeremy Michalek/Carnegie Mellon University

Future of Global Electric Vehicle Supply Chain: Exploring the Impact of Global Trade on Electric Vehicle Production and Battery Requirements (TRBAM-24-02867)

Pablo Busch/University of California, Davis, Francisco Pares Olguin/University of California, Davis, Minal Chandra/University of California, Davis, Alissa Kendall/University of California, Davis, Gil Tal/University of California, Davis

(continued)

Shifting Manufacturing: Mexico's Role in Electric Vehicle Supply for North and South America (TRBAM-24-03211)

Francisco Pares Olguin/University of California, Davis, Pablo Busch/University of California, Davis, Minal Chandra/University of California, Davis, Gil Tal/University of California, Davis

Lithium Supply Chain for Electric Vehicles and the Role of Science Diplomacy Across the Americas (TRBAM-24-05025)

Alice Grossman/Inter-American Institute For Global Change Research, Camilo De Los Rios/Inter-American Institute For Global Change Research, Matias Mastrangelo/Inter-American Institute For Global Change Research, Monica Jimenez-Cordova/Inter-American Institute For Global Change Research

3205 CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 144AB

Transit Supply and Demand: Land Use, COVID-19, and Other Influences

Xavier Harmony, Northern Virginia Transportation Commission, presiding

Sponsored By Standing Committee on Public Transportation Planning and Development, Standing Committee on Transit Management and Performance, Standing Committee on Innovative Public Transportation Services and Technologies

This session will explore factors affecting transit supply and demand. Speakers will address connections between transit supply and high-density housing, how transit demand changed (including built-environment influences) during and after the COVID-19 pandemic, and the costs of roadway congestion on transit.

Tracking the Development of High-Density Housing Against Transit Service Provision: 19-Year Longitudinal Analysis in Melbourne, Australia (TRBAM-24-00581)

Chris De Gruyter/RMIT University, Steve Pemberton/RMIT University, Eric Keys/RMIT University

Built Environment's Nonlinear Impact on Subway Travel Distance Changes Under the Influence of COVID-19 (TRBAM-24-05697)

Peikun Li/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Wenbo Lu/Beijing Jiaotong University, Hao Wang/Beijing Jiaotong University, Chaoqun Ma/Beijing Jiaotong University, Yuqing Wang/Beijing Jiaotong University

Transit Use During and After the COVID-19 Pandemic: The "New Normal" for Public Transit Ridership (TRBAM-24-04998)

Parsa Pezeshknejad/University of Vermont, Matthew Palm/University of Vermont, Dana Rowangould/University of Vermont

Locating and Costing Congestion for School Buses and Public Transportation (TRBAM-24-02636)

Kai Monast/Institute for Transportation Research and Education (ITRE), Jeremy Scott/Institute for Transportation Research and Education (ITRE), Jonah Freedman/Institute for Transportation Research and Education (ITRE), Narmina Murphy/Institute for Transportation Research and Education (ITRE), Waugh Wright/Institute for Transportation Research and Education (ITRE)

3206 CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 143C

New Insights into Transit Customer Behavior and Market Research

Lama Bou Mjahed, World Bank, presiding

Sponsored By Standing Committee on Public Transportation Marketing and Fare Policy

This session will present new insights into public transit customer behavior and market research. The presentations include new methods, such as neuromarketing, and leverage big data sets, such as smartcard data and online customer reviews, in order to develop actionable insights into customer behavior. This session will also discuss the outreach methods and lessons learned in educating riders about how to use and the benefits of fare capping.

Making It Stick: Improving Effectiveness of Communication Messages and Materials Using Neuromarketing (TRBAM-24-05514)

Mahmooda Khaliq/University of South Florida, Dove Wimbish/University of South Florida, Rob Hammond/University of South Florida, Phil Winters/University of South Florida, Yuqi Wang/University of South Florida

Learning Transportation Preferences from Online Business Review Language (TRBAM-24-05591)

Madison Lore/University of British Columbia, Martino Tran/University of British Columbia

(continued)

Using Smartcard Data to Segment WMATA's Customers (P24-20481)

Catherine Vanderwaart/Washington Metropolitan Area Transit Authority

Lessons in Customer Outreach and Education on Fare Capping: Perspectives from Columbus (P24-20644)

Jason Yanni/Central Ohio Transit Authority

3207 CM (1.75)

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 145B

Reflecting Changing Transit Customer Use Patterns

Saeid Saidi, University of Calgary, presiding

Sponsored By Standing Committee on Urban Rail Transit Systems

The COVID pandemic has had a significant impact on travel patterns and trip purpose, urban rail networks have seen a decline in ridership and revenue. As businesses are gradually getting back to normal, travel patterns are expected to shift. How have public agencies made effort to analyze travel behaviors and adjust service patterns?

All-Day Service on Commuter Rail: An MBTA Case Study of Ridership and Equity Implications

(TRBAM-24-04526)

Samuel Polzin/Massachusetts Bay Transportation Authority (MBTA), Megan Willis-Jackson/Massachusetts Bay Transportation Authority (MBTA), Philip White/Massachusetts Bay Transportation Authority (MBTA), Karl Meakin/Massachusetts Bay Transportation Authority (MBTA), Martha Koch/Massachusetts Bay Transportation Authority (MBTA)

How Has the Paris Rail Public Transport Network Recovered After the COVID-19 Pandemic?: Applying a Mixture of Regressions Model (TRBAM-24-01932)

Hugues Moreau/Université Gustave Eiffel - Campus de Marne-la-Vallée: Université Gustave Eiffel, Étienne Côme/Université Gustave Eiffel - Campus de Marne-la-Vallée: Université Gustave Eiffel, Allou Samé/Université Gustave Eiffel - Campus de Marne-la-Vallée: Université Gustave Eiffel, Latifa Oukhellou/Université Gustave Eiffel - Campus de Marne-la-Vallée: Université Gustave Eiffel

A Study of Passenger Behavior While Waiting for a Train on the Train Platform: Use of Wi-Fi-Based Location Tracking Systems in Singapore (TRBAM-24-02150)

Michelle Cheung/Tongji University, Yan Cheng/Tongji University, Taku Fujiyama/Tongji University

Trends in Toronto's Subway Ridership Recovery: An Exploratory Analysis of Wi-Fi Records (TRBAM-24-03786)

Roger Chen/University of Toronto, Amer Shalaby/University of Toronto, Diego Da Silva/University of Toronto

A Deep Learning Model for Short-Term Origin-Destination Distribution Prediction in Urban Rail Transit Network Considering Destination Choice Behavior (TRBAM-24-04996)

Yue Wang/Beijing Jiaotong University, Enjian Yao/Beijing Jiaotong University, Yongsheng Zhang/Beijing Jiaotong University, Long Pan/Beijing Jiaotong University, He Hao/Beijing Jiaotong University

3208

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 147B

Supporting the Future of the Rail Workforce

Jo Strang, American Short Line and Regional Rail Association, presiding

Jason Wornoff, Federal Railroad Administration (FRA), presiding

Sponsored By Standing Committee on Rail Safety

This session will focus on initiatives to build and maintain the rail workforce and knowledge base necessary for safe and effective operations. Presentations will address approaches to equitable workforce development, knowledge management and succession planning, and support for employees who experience critical incidents.

Federal Railroad Administration Workforce Development Projects: Promoting Equitable Recruitment, Retention, and Succession Planning in the Railroad Industry (P24-21188)

Starr Kidda/Federal Railroad Administration (FRA)

Partnerships to Support Equitable Workforce Development (P24-21189)

Shala Blue/Federal Railroad Administration (FRA), Deo Chimba/Tennessee State University

Expertise Management: An Innovative Approach for Knowledge Management and Succession Planning in the Railroad Industry (P24-21190)

Michael Coplen/TrueSafety Evaluation, LLC, Brian Moon/Perigean Technologies LLC

Supporting Rail Employees Through Critical Incidents: Current Practices and Opportunities (P24-21191)

Megan France-Peterson/OST-R/Volpe Center, Danielle Hiltunen/OST-R/Volpe Center, Shala Blue/Federal Railroad Administration (FRA)

3209

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 144C

Advances in Last-Mile Package Delivery and Logistics

Sina Bahrami, University of Michigan, Ann Arbor, presiding

Kazuya Kawamura, University of Illinois, Chicago, presiding

Sushant Sharma, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Freight Transportation Planning and Logistics, Subcommittee on Freight Modeling

These top rated papers take a deep dive into issues related to last mile delivery and package delivery problems in terms of modeling, datasets, and optimization.

A Two-Echelon Location Model for the Last-Mile Omni-Channel Retailing Network (TRBAM-24-01466)

RunFeng Yu/Beijing Jiaotong University, Lifen Yun/Beijing Jiaotong University, Hongqiang Fan/Beijing Jiaotong University, Yi Qin/Beijing Jiaotong University

Modeling Ridehail Customers' Willingness to Help with Package Delivery in an Autonomous Mixed-Service Fleet Operation (TRBAM-24-03258)

Hoseb Abkarian/Northwestern University, Nadim Hamad/Northwestern University, Hani Mahmassani/Northwestern University

Comparing the Competitiveness of Different Last-Mile Delivery Methods for Different Commodity Types (TRBAM-24-05590)

Ali Riahi Samani/University of Memphis, Sabyasachee Mishra/University of Memphis, Ahmadreza Talebian/University of Memphis, Mihalios Golias/University of Memphis

Subscription and Per-Order Pricing Programs in Temporally Consolidated Last-Mile Delivery (TRBAM-24-05687)

Behnaz Naeimian/York University, Won Mo Jeoung/York University, Mehdi Nourinejad/York University, Peter Park/York University

3210

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 145A

To Switch or Not to Switch: The Surface Transportation Board's Proposed Reciprocal Switching Rulemaking

Henry Posner, Railroad Development Corporation, presiding

Sponsored By Standing Committee on Agriculture and Food Transportation

The recent STB decision on reciprocal switching could have a profound effect on the rail industry, and it is of particular interest to the agricultural community. This session will feature a panel discussion among interested parties as to what this decision may mean and how the industry might move forward.

Panel Discussion (P24-21384)

Max Fisher/National Grain and Feed Association, Karen Hedlund/Surface Transportation Board, William Huneke/Independent, Fred Miller/Association of American Railroads

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 143AB

Persistent Impact of the COVID-19 Pandemic on Passenger Processing in Airport Terminals

Dr. I. Richmond Nettey, Kent State University, presiding

Sponsored By Standing Committee on Airport Terminals and Ground Access, Standing Committee on Aviation Safety, Security and Emergency Management

This session will review how measures taken in airport terminals to respond to the COVID-19 pandemic have continued through functional and operational processes used to serve passengers in airport terminals. Participants in this session will learn about: (a) Emerging trends in passenger processing in airport terminals after COVID-19 through an examination of the intersection of technology, people, and processes at airport terminals. (b) Evolution of wayfinding within airport terminals in the aftermath of the COVID-19 pandemic. (c) Evaluating the Impacts of Variable Message Signs on Airport Curbside Performance Using Microsimulation

Evolution of the Passenger Experience Post-COVID-19 (P24-21402)

Clint Laaser/AECOM

The Evolution of Wayfinding Within Airport Terminals (TRBAM-24-00443)

Bonnie Powell/National Renewable Energy Laboratory (NREL), Stanley Young/National Renewable Energy Laboratory (NREL), Andrew Duvall/National Renewable Energy Laboratory (NREL)

Evaluating the Impacts of Variable Message Signs on Airport Curbside Performance Using Microsimulation (TRBAM-24-04391)

Jorge Diaz-Gutierrez/Pennsylvania State University, Andisheh Ranjbari/Pennsylvania State University, Thomas Maxner/Pennsylvania State University, Nawaf Nazir/Pennsylvania State University

Emerging Trends After COVID-19: Intersection of Technology, People, and Processes at Airport Terminals (P24-20789)

Aarshabh Misra/Arup

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 147A

Recent Research on the Inland Waterway Transportation System

Mehdi Azimi, Texas Southern University, presiding

Sponsored By Standing Committee on Inland Water Transportation

This session features a variety of recent research related to inland waterway transportation systems.

Is an Inland Port in Charge of Its Own Destiny?: The Case of the Port of Duisburg (TRBAM-24-05363)

Jake Tsubota/U.S. Maritime Administration

Inland Waterway Resilience: A Case Study of Middle Tennessee in the United States (TRBAM-24-01005)

Janey Camp/University of Memphis, Craig Philip/University of Memphis, Miguel Moravec/University of Memphis

Prediction of River Stages Along United States Inland Waterways Using Deep Neural Networks (TRBAM-24-03052)

Eric Rohli/Trabus Technologies, David Sathiaraj/Trabus Technologies

Real-Time Vessel Tracking and Location Prediction Using Automatic Identification System Data (TRBAM-24-04304)

Atefe Sedaghat/Lamar University, Masood J. Kang/Lamar University, Maryam Hamidi/Lamar University

Traffic Cameras to Detect Inland Waterway Barge Traffic: An Application of Machine Learning (TRBAM-24-04279)

Geoffery Agorku/University of Arkansas, Fayetteville, Sarah Hernandez/University of Arkansas, Fayetteville, Subhadipto Poddar/University of Arkansas, Fayetteville, Maria Falquez/University of Arkansas, Fayetteville, Kwadwo Amankwah-Nkyi/University of Arkansas, Fayetteville

3232

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Ballroom A

View from the Flight Deck: Perspectives from Federal Aviation Administration Leadership

Polly Trottenberg, U.S. Department of Transportation Office of the Under Secretary for Policy, presiding

Sponsored By Executive Committee

This senior leadership panel will address and discuss key strategic priorities of the FAA. Topics of discussion may include ensuring a safe new era of diverse operations in the National Airspace System (NAS), steps being taken to advance the FAA's safety culture and risk management, using data to enhance aerospace safety, aircraft certification reform, addressing pilot mental health, increasing cyber security resilience of the NAS, and harnessing the potential of innovation.

Panel Discussion (P24-21451)

Michael Whitaker/Federal Aviation Administration (FAA), Kathryn Thomson/Federal Aviation Administration (FAA), David Boulter/Federal Aviation Administration (FAA), Paul Fontaine/Federal Aviation Administration (FAA), Franklin McIntosh/Federal Aviation Administration (FAA)

4078

Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, 202B

Innovation Advances Toward the Future of Managing Traffic: What Did We Learn at the 4th International Symposium on Freeway and Tollway Operations?

Martin Russ, AustriaTech, presiding

Sponsored By Standing Committee on Intelligent Transportation Systems, International Coordinating Council, Standing Committee on Freeway Operations, Joint Subcommittee on Active Traffic Management, Standing Committee on Managed Lanes, Standing Committee on Artificial Intelligence and Advanced Computing Applications

This session will highlight the key issues discussed, research, and collaboration opportunities from the 4th TRB International Symposium on Freeway and Tollway Operations, held June 26-30, 2023 in Vienna, to explore "The Future of Managing Traffic". Experts from around the globe discussed challenges, research needs, and innovative approaches to collaborate with other agencies, service providers, and industry organizations to improve how they actively manage and control traffic. Key topics of these plenary and technical sessions were: Innovative Financing to Build and Operate Motorways Governance and Organizational Challenges Managing and Analyzing Operational Strategies and Performance Next Generation of Traffic Management Systems and Services

Visioning Traffic Management's Future: Plenary Session (P24-20193)

Susanna Zammataro/International Road Federation (IRF)

Improving the Value Proposition of Traffic Management: Plenary Session (P24-20194)

John Hibbard/Georgia Department of Transportation

Collaboration and Research Opportunities to Improve Traffic Management: Plenary Session (P24-20195)

Johanna Tzanidaki/ERTICO-ITS Europe

American Association of State Highway and Transportation Officials Collaboration and Research Opportunities (P24-20202)

Jennifer Portanova/North Carolina Department of Transportation

Governance and Organizational Challenges (P24-20196)

Daniela Bremmer/Washington State Department of Transportation

Managing and Analyzing Operational Strategies and Performance (P24-21306)

Daniel Lukasik/Parsons

Next Generation of Traffic Management Systems and Services (P24-20197)

Jon Obenberger/Federal Highway Administration (FHWA)

Innovative Financing to Build and Operate Motorways (P24-20198)

Patrick Jones/International Bridge Tunnel & Turnpike Association

Next Steps and Actions: Symposium Co-Sponsoring Organizations (P24-20199)

Beverly Kuhn/Texas A&M Transportation Institute



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Bicycle Safety, Planning, and Design: Research to Support Better Bicycling Conditions

Rebecca Sanders, Safe Streets Research & Consulting, presiding

Sponsored By Standing Committee on Bicycle Transportation

This session will showcase the latest research on bicycling planning, network and facility design, and safety.

Assessing Bike Transit Accessibility (TRBAM-24-04535) - B722

Tanner Passmore/Georgia Institute of Technology, Kari Watkins/Georgia Institute of Technology, Randall

Guensler/Georgia Institute of Technology

Un-driving Climate Change: The Benefits of an E-Bike Rebate Program (TRBAM-24-04583) - B723

Aditi Misra/University of Colorado, Denver, Anna Henderson/University of Colorado, Denver, Manish Shirgaokar/University

of Colorado, Denver, Wesley Marshall/University of Colorado, Denver

Closing the Cycling Gap: Examining Equity Implications of Montreal's Bikesharing Network Growth

(TRBAM-24-05761) - B726

Philip Bligh/McGill University, David Wachsmuth/McGill University, Maxime Belanger de Blois/McGill University, Kevin

Manaugh/McGill University

Characterizations of Expert and Public Perception of Bicycle Rolling Stop Laws: Public Hazard or Practical

Convenience? (TRBAM-24-00228) - B724

Rhonda Young/Gonzaga University, Kevin Chang/Gonzaga University, David Hurwitz/Gonzaga University, Antonio

Campos/Gonzaga University, Jasmin Woodside/Gonzaga University

Green Stormwater Infrastructure and Active Mobility: A Case Study Investigating the Effects of Bioswales on

Individuals' Perceptions (TRBAM-24-00507) - B725

Charlotte Lemieux/University of British Columbia, Sara Lach Gar/University of British Columbia, Françoise

Bichai/University of British Columbia, Francesco Ciari/University of British Columbia, Geneviève Boisjoly/University of

British Columbia

Interaction Ability Evaluation of Autonomous Vehicles with Bicycles on Mixed Traffic Road Segments

(TRBAM-24-00599) - B729

Shihan Wang/Tongji University, Ying Ni/Tongji University, Yilin Cai/Tongji University, Jiayuan He/Tongji University, Jian

Sun/Tongji University

Identifying the Determinants of Bicycle Commuting in London, United Kingdom (TRBAM-24-00679) - B730

Samuel McCreery-Phillips/University of Southampton, Shahram Heydari/University of Southampton

How Do Bike Types and Cycling Frequency Shape Cycling Infrastructure Preferences?: A Stated-Preference

Survey (TRBAM-24-00800) - B731

Lucas Meyer de Freitas/ETH Zurich, Kay Axhausen/ETH Zurich

Prioritizing Bicyclist Safety and Mobility: Which Guidance to Use (TRBAM-24-00892) - B732

Edward Smaglik/Northern Arizona University, Christopher Phair/Northern Arizona University, Anthony Eschen/Northern

Arizona University, Brendan Russo/Northern Arizona University

Turning the Wheel on Active Transportation: Shifts in Policy Making and Planning for Cycling and Pedestrian

Facilities During the COVID-19 Pandemic in Large Canadian Regions (TRBAM-24-00918) - B727

Remington Latanville/Toronto Metropolitan University, Raktim Mitra/Toronto Metropolitan University, Meghan

Winters/Toronto Metropolitan University, Paul Hess/Toronto Metropolitan University, Kevin Manaugh/Toronto Metropolitan

University

Worse Than We Think: Accounting for Bicyclist Exposure in the High-Injury Network (TRBAM-24-01046) - B733

Iris La/University of Colorado, Denver, Wesley Marshall/University of Colorado, Denver

Using Administrative Health Data and Auto Insurance Claims Data to Identify and Rank Hot Zones for Cyclist

and Pedestrian Crashes in the City of Vancouver (TRBAM-24-01143) - B734

Tala Alsharif/University of British Columbia, Mohammad Bayoumi Kamel/University of British Columbia, Megan

Oakey/University of British Columbia, Geoff McKee/University of British Columbia, Mojgan Karbakhsh/University of British

Columbia, Tarek Sayed/University of British Columbia

Quantifying Cyclists' Discomfort in Temporary Bike Lanes (TRBAM-24-01298) - B736

Khashayar Kazemzadeh/University of Cambridge, Prateek Bansal/University of Cambridge

Can Advertising Campaigns Rehumanize Cyclists? (TRBAM-24-01436) - B737

Alexa Delbosc/Monash University, Narelle Haworth/Monash University, Amy Schramm/Monash University, Nick

Haslam/Monash University

(continued)

Do Protected Cycle Lanes Make Cities More Bike Friendly?: Evidence from a Historical City (TRBAM-24-01488) - B738

Lurong Xu/Chinese University of Hong Kong, Shenzhen, Shuli Luo/Chinese University of Hong Kong, Shenzhen, Steve O' Hern/Chinese University of Hong Kong, Shenzhen, Alexa Delbosc/Chinese University of Hong Kong, Shenzhen, Zhuo Chen/Chinese University of Hong Kong, Shenzhen, Xiao Fu/Chinese University of Hong Kong, Shenzhen

Bicyclists' Annoyances While Cycling on Separate Bicycle Paths in the Netherlands: An Exploration of Levels of Importance (TRBAM-24-00063) - B740

Peter Van Der Waerden/Eindhoven University, Jaap van der Waerden/Eindhoven University

Characteristics of Criticality of Interacting Motorists and Bicyclists (TRBAM-24-00266) - B742

Marek Junghans/German Aerospace Center, Meng Zhang/German Aerospace Center, Hagen Saul/German Aerospace Center, Andreas Leich/German Aerospace Center, Peter Wagner/German Aerospace Center

Quantification of the Safety Benefits of Different On-Street Bike Infrastructure Types and the Impact of Corridor-Specific Characteristics on Their Performance (TRBAM-24-01975) - B743

Yasmina Imad Monzer/McMaster University, Mohamed Hussein/McMaster University

A Multi-Scale Approach for Free-Float Bikesharing Electronic Fence Location Planning: A Case Study of Shenzhen City (TRBAM-24-02048) - B744

Zhonghua Wei/No Organization, Houqiang Ma/No Organization, Zhimei Feng/No Organization, YunXuan Li/No Organization

Toward a Siting Criteria for Edge Lane Roads and Shared Streets (TRBAM-24-02295) - B745

Michael Williams/Michael Williams Company, Ashok Parasa/Michael Williams Company, Marcial Lamera/Michael Williams Company, Aleksandar Bauranov/Michael Williams Company, Anurag Pande/Michael Williams Company, Carole Voulgaris/Michael Williams Company

Relocating Road Space to Cyclist: Impacts on Motorized Traffic from the Automobile Driver Perspective in Bogotá, Colombia (TRBAM-24-02344) - B747

Jun Liu/University of Alabama, Javier Pena-Bastidas/University of Alabama, Steven Jones/University of Alabama

Current Practices in Non-Motorist Crowdsourced Data Among Transportation Agencies: A Nationwide Survey and Its Implications (TRBAM-24-02605) - B748

Mohammad Abrari Vajari/University of Wisconsin, Milwaukee, Yang Li/University of Wisconsin, Milwaukee, Iman Aghayan/University of Wisconsin, Milwaukee, Xiao Qin/University of Wisconsin, Milwaukee, Robert Schneider/University of Wisconsin, Milwaukee

Exploring the Geographical Equity-Efficiency Trade-Off in Cycling Infrastructure Planning (TRBAM-24-02690) - B749

Madeleine Bonsma-Fisher/University of Toronto, Bo Lin/University of Toronto, Timothy Chan/University of Toronto, Shoshanna Saxe/University of Toronto

Impacts of the Built Environment on Bicycle-Metro Transfer Trips: A Nonlinear and Interaction Effect Analysis (TRBAM-24-03076) - B752

Feifei Xin/Tongji University, Dan Linghu/Tongji University, Xiaobo Wang/Tongji University

Bicycle Safety Evaluation Using Extreme Value Theory (TRBAM-24-03153) - B753

Sylwia Pazdan/Cracow University, Mariusz Kiec/Cracow University

Role of Safety Concern and Latent Factors in Route Choice Preferences of Normal Bicyclists and E-Bike Riders (TRBAM-24-03541) - B754

Huitao Lv/Southeast University, Xue Bai/Southeast University, Shiyi Gou/Southeast University, Qian Meng/Southeast University, Haojie Li/Southeast University

Do New Bike Lanes Lead to a More Equitable City?: An Analysis of Cycling Infrastructure in Montreal (TRBAM-24-03629) - B728

Qiao Zhao/McGill University, Kevin Manaugh/McGill University

Impact of Travel Stress and Infrastructure Quality on Cycling Mode Share: Insights from Multimodal Trajectory and Survey Data Analysis (TRBAM-24-03722) - B755

Anna Takayasu/Technische Universität München, Simone Weikl/Technische Universität München, Victoria Dahmen/Technische Universität München, Klaus Bogenberger/Technische Universität München

Cycling Mode Choice: An RP Study in Switzerland (TRBAM-24-04268) - B757

Gladys Gan/Eidgenössische Technische Hochschule Zürich (ETH Zürich), Adrian Meister/Eidgenössische Technische Hochschule Zürich (ETH Zürich), Miloš Balać/Eidgenössische Technische Hochschule Zürich (ETH Zürich)

Investigating Active Transportation Users' Preferences Toward Autonomous Transit Along a Dedicated Active Transportation Corridor (TRBAM-24-04509) - B758

Dakota Svendsen/University of British Columbia, Mahmudur Fatmi/University of British Columbia

Modeling Cyclists' Route Choice Behavior: A Gaussian Mixture Model for Choice Set Generation and a Logit Model for Route Choice (TRBAM-24-04594) - B759

Maryamossadat Zakeri/University of British Columbia, Mahmudur Fatmi/University of British Columbia

Using Perceptual Cycle Model and Text Network Analysis to Examine Crash Avoidance Technology Failure-Related Collisions (TRBAM-24-04850) - B764

Subasish Das/Texas State University, Angela Kitali/Texas State University, Khaled Abousabaa/Texas State University, Boniphace Kutela/Texas State University, John Kodi/Texas State University

Toward the Use of Microsimulation in Bicycle Safety Analysis at Intersections (TRBAM-24-04865) - B762

Robert Mansell/Toronto Metropolitan University, Bhagwant Persaud/Toronto Metropolitan University, Cameron Mohammadi/Toronto Metropolitan University, Craig Milligan/Toronto Metropolitan University

Operating Speed Distributions in Off-Street Cycling Facilities by Vehicle Type and Motorization (TRBAM-24-04891) - B763

Amir Hassanpour/University of British Columbia, Alexander Bigazzi/University of British Columbia

The Impact of Bicycle Infrastructure and Network Characteristics on Bicycle Traffic Over Time in 12 U.S. Metropolitan Areas (TRBAM-24-04974) - B765

Abdirashid Dahir/Ohio State University, Daniel Harrington/Ohio State University, Sajjad Abdollahpour/Ohio State University, Steven Hankey/Ohio State University, Huyen Le/Ohio State University

Microscopic Behaviors and Psychological Characteristics Analysis of Opposite Direction Interactions in Non-Motorized Shared Spaces (TRBAM-24-05356) - B735

Xinyu Liang/Harbin Institute of Technology, Rushdi Alsaleh/Harbin Institute of Technology, Tarek Sayed/Harbin Institute of Technology

Consumer Purchase Response to E-Bike Incentives: Results from a Nationwide Stated Preference Study (TRBAM-24-05358) - B767

Luke Jones/University of Tennessee, Knoxville, Cameron Bennett/University of Tennessee, Knoxville, John MacArthur/University of Tennessee, Knoxville, Christopher Cherry/University of Tennessee, Knoxville

Bicyclist Behavior in the Presence of Two-Stage Turn Queue Boxes (TRBAM-24-05702) - B768

Dewan Tanvir Ahammed/University of Massachusetts, Amherst, Leila Cestic/University of Massachusetts, Amherst, Chengbo Ai/University of Massachusetts, Amherst, Eleni Christofa/University of Massachusetts, Amherst, Francis Tainter/University of Massachusetts, Amherst, Brigham Stevenson/University of Massachusetts, Amherst

Bicycle Rider Evaluations of an Intersection Safety Alert System: Learnings for Similar Technologies from a Field Trial (TRBAM-24-05810) - B739

Wonmongo Soro/Deakin University, Narelle Haworth/Deakin University, Arkady Zaslavsky/Deakin University, Ashim Debnath/Deakin University

A Research on Bicycle Travel Quality Based on Cyclists' Perception (TRBAM-24-05868) - B769

Congying Li/Renmin University of China, Li Zhan/Renmin University of China, Dapeng Zhang/Renmin University of China, Kun Li/Renmin University of China, Boran Ren/Renmin University of China, Jinxiu Jia/Renmin University of China

3215



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Transforming Transportation Planning and Traffic Forecasting with Artificial Intelligence

Ruimin Ke, Rensselaer Polytechnic Institute (RPI), presiding

Sponsored By Standing Committee on Artificial Intelligence and Advanced Computing Applications

The session will feature a showcase of innovative applications of artificial intelligence (AI) and machine learning models in the realm of transportation planning and traffic forecasting. The posters presented in this section encompass a broad spectrum of topics, including traffic forecasting and state estimation, route and mode choice modeling, trip distribution, traffic assignment, origin-destination (OD) matrix estimation, and ridesharing, among other relevant subjects. These posters explore a diverse range of AI technologies, including Convolutional Neural Networks, reinforcement learning, and transformer models.

Electric Vehicle Charging Load Prediction Using a Hybrid Deep Learning Method: A Bi-Long, Short-Term Memory Embedding Denoising Auto Encoder Transformer (TRBAM-24-00068) - A330

Sahar Koohfar/UTSA: The University of Texas at San Antonio, Wubeshet Woldemariam/UTSA: The University of Texas at San Antonio, Amit Kumar/UTSA: The University of Texas at San Antonio

A Macro-Micro Spatio-Temporal Neural Network for Traffic Prediction (TRBAM-24-00277) - A320

Siyuan Feng/Hong Kong University, Shuqing Wei/Hong Kong University, Junbo Zhang/Hong Kong University, Jintao Ke/Hong Kong University, Yu Zheng/Hong Kong University, Hai Yang/Hong Kong University

(continued)

Deep Learning–Based Framework for Measuring Heterogeneous Traffic State in Challenging Traffic Scenarios (TRBAM-24-00333) - A321

Muttahirul Islam/Bangladesh University of Engineering and Technology, Nazmul Haque/Bangladesh University of Engineering and Technology, Md. Hadiuzzaman/Bangladesh University of Engineering and Technology

Hybrid Transformer and Spatial-Temporal, Self-Supervised Learning for Long-Term Traffic Prediction (TRBAM-24-00491) - A252

Wang Zhu/University of Shanghai for Science and Technology, Doudou Zhang/University of Shanghai for Science and Technology, Baichao Long/University of Shanghai for Science and Technology, Jianli Xiao/University of Shanghai for Science and Technology

A Hybrid Model for Traffic Incident Detection Based on Generative Adversarial Networks and Transformer Model (TRBAM-24-00501) - A251

Xinying Lu/University of Shanghai for Science and Technology, Doudou Zhang/University of Shanghai for Science and Technology, Jianli Xiao/University of Shanghai for Science and Technology

A Bayesian Approach to Quantifying Uncertainties and Improving Generalizability in Traffic Prediction Models (TRBAM-24-00562) - A322

Agnimitra Sengupta/HNTB Corporation, Sudeepta Mondal/HNTB Corporation, Adway Das/HNTB Corporation, S. Ilgin Guler/HNTB Corporation

Global Positioning System Data to Model Network-Wide Road Segment Level Number of Lanes Using Spatial Analysis and Machine Learning (TRBAM-24-00710) - A230

Adham Badran/McGill University, Ahmed El-Geneidy/McGill University, Luis Miranda-Moreno/McGill University

Unmasking Electric Vehicle Preference: A Machine Learning Study of Multi-Vehicle Households in the United States (TRBAM-24-00745) - A200

Vuban Chowdhury/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville, Sarah Hernandez/University of Arkansas, Fayetteville

Deep Probabilistic Traffic Forecasting with Correlated Errors (TRBAM-24-00897) - A182

Vincent Zheng/McGill University, Lijun Sun/McGill University, Seongjin Choi/McGill University

Simultaneous Detection of Road Network Disruptions at Microscopic and Macroscopic Scales (TRBAM-24-00917) - A323

Hojat Behrooz/Stevens Institute of Technology, Mohammad Ilbeigi/Stevens Institute of Technology

Optimal Strategy for Spatial Inference of Speed Profiles on Large-Scale Road Network (TRBAM-24-01001) - A313

Pierre-Antoine Laharotte/Universite Gustave Eiffel, Loïc Bonnetain/Universite Gustave Eiffel, Matthieu Guillot/Universite Gustave Eiffel, Angelo Furno/Universite Gustave Eiffel, Nour-Eddin El Faouzi/Universite Gustave Eiffel

Shared E-Scooter Service Origin-Destination Demand Prediction Using Convolutional Neural Network (TRBAM-24-01111) - A312

Karn Patanukhom/University of Calgary, Santi Phithakkitnukoon/University of Calgary, Merkebe Demissie/University of Calgary

A Temporal-Spatial-Semantic Fusion Network for Area-Wide Traffic Forecasting (TRBAM-24-01202) - A311

Yansong Qu/Beijing University of Technology, Zhenlong Li/Beijing University of Technology

An Improved Support Tensor Machine Approach for Sub-Categorizing Traffic States with Electronic Toll Collection Gantry Data (TRBAM-24-01222) - A310

Yan Zhao/Southeast University, Can Wang/Southeast University, Linheng Li/Southeast University, Yikang Rui/Southeast University, Bin Ran/Southeast University

DeepBike: A Deep Reinforcement Learning Model for Large-Scale Dynamic Bikeshare Rebalancing with Spatial-Temporal Context (TRBAM-24-01299) - A300

Zhuoli Yin/Purdue University, Hua Cai/Purdue University

Recovering Traffic Data from the Corrupted Noise: A Doubly Physics-Regularized Denoising Diffusion Model (TRBAM-24-01301) - A233

Zhenjie Zheng/Hong Kong Polytechnic University, Zhengli Wang/Hong Kong Polytechnic University, Zijian Hu/Hong Kong Polytechnic University, Zihan Wan/Hong Kong Polytechnic University, Wei Ma/Hong Kong Polytechnic University

Estimating the Transport Network Flow in Multiple Cities: A Deep Learning Framework Using Open and Global Multi-Source Data (TRBAM-24-01462) - A232

Zijian Hu/Hong Kong Polytechnic University, Zhenjie Zheng/Hong Kong Polytechnic University, Wei Ma/Hong Kong Polytechnic University

Traffic State Estimation from Vehicle Trajectories with Anisotropic Gaussian Processes (TRBAM-24-01502) - A183

Fan Wu/University of Alberta, Zhanhong Cheng/University of Alberta, Huiyu Chen/University of Alberta, Tony Qiu/University of Alberta, Lijun Sun/University of Alberta

(continued)

Passenger Flow Data Imputation with Probsparse Self-Attention Conditional Generative Adversarial Imputation Net (TRBAM-24-01537) - A301

Hongru Yu/Beijing Jiaotong University, Yuanli Gu/Beijing Jiaotong University, Mingyuan Li/Beijing Jiaotong University, Wenqi Lu/Beijing Jiaotong University, Shejun Deng/Beijing Jiaotong University

Multivariate Traffic Uncertainty Prediction with a Hybrid Kalman Filter–Based Deep Neural Network (TRBAM-24-01777) - A231

Xinyue Wu/City University of Hong Kong, Andy Chow/City University of Hong Kong, Wei Ma/City University of Hong Kong, William Lam/City University of Hong Kong, S.C. Wong/City University of Hong Kong

Short-Term Traffic Forecasting Using Temporal Fusion Transformers: A Case Study of the Saint Gotthard Tunnel (TRBAM-24-02294) - A172

Guillaume Neven/Polytechnique Montréal, Alexander Genser/Polytechnique Montréal, Lijun Sun/Polytechnique Montréal, Lukas Ambühl/Polytechnique Montréal, Nicolas Saunier/Polytechnique Montréal

DeepAR for Real-Time Forecasting of Intersection Turning Movement Flows with Uncertainty Quantification (TRBAM-24-02534) - A302

Ce Zhang/University of Waterloo, Guangyuan Pan/University of Waterloo, Matthew Muresan/University of Waterloo, Liping Fu/University of Waterloo

Slime Mold Inspired Adaptive Transformation of Transportation Networks (TRBAM-24-02547) - A303

Xijin (Emma) Zhang/Case Western Reserve University, Xudong Fan/Case Western Reserve University, Xiong Yu/Case Western Reserve University

Road Network Encoder Representation from Transformers with Masked Pre-Training (TRBAM-24-02809) - A293

Honghui Dong/Beijing Jiaotong University, Yuqing Zhang/Beijing Jiaotong University, Pengcheng Zhu/Beijing Jiaotong University, Huipeng Zhang/Beijing Jiaotong University

A Machine Learning Framework for Clustering and Calibration of Roadway Performance Models with Application in the Large-Scale Traffic Assignment (TRBAM-24-02869) - A292

Mohammad Amin Abedini/Go Transit/Metrolinx, Eric Miller/Go Transit/Metrolinx

Physics-Informed Deep Learning for Traffic State Estimation: A Survey and the Outlook (TRBAM-24-03040) - A291

Zhaobin Mo/Columbia University, Rongye Shi/Columbia University, Yongjie Fu/Columbia University, Xuan Di/Columbia University

Spatio-Temporal Traffic Data Imputation Using Triple Tensor Decomposition (TRBAM-24-03065) - A290

Siyuan Chen/Southeast University, De Zhao/Southeast University, Shaoyang Qin/Southeast University, Xuedong Hua/Southeast University, Wei Wang/Southeast University

Large-Scale Network Speed Prediction During Hurricane Evacuation with Limited Data: A Deep Learning Approach (TRBAM-24-03290) - A220

Qinhua Jiang/University of California, Los Angeles, Brian He/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Cumulative Traffic Arrival Curve Reconstruction Using License Plate Recognition Data: A Constrained and Periodic Gaussian Process Model (TRBAM-24-03366) - A281

Chengchuan An/Southeast University, Yang He/Southeast University, Jishun Ou/Southeast University, Alvina Xia/Southeast University, Lei Lei/Southeast University

Improve the Reliability of Passive Data by Identifying the Link Between Embarking Count Error and Error in Origin-Destination Matrix Estimates (TRBAM-24-03380) - A282

Léa Fabre/LAET: Laboratoire Aménagement Economie Transports, Caroline Bayart/LAET: Laboratoire Aménagement Economie Transports, Alexandre NICOLAS/LAET: Laboratoire Aménagement Economie Transports, Patrick Bonnel/LAET: Laboratoire Aménagement Economie Transports

Memory Efficient Hankel Tensor Factorization for Extreme Missing Traffic Data Imputation (TRBAM-24-03529) - A173

Xinyu Chen/Polytechnique Montréal, Zhanhong Cheng/Polytechnique Montréal, Chengyuan Zhang/Polytechnique Montréal, Lijun Sun/Polytechnique Montréal, Nicolas Saunier/Polytechnique Montréal

Explainable Machine Learning Approach to Predict Speed on Urban Roads Under Mixed Traffic Conditions (TRBAM-24-03543) - A203

Vineet Jain/Sardar Vallabhbhai National Institute of Technology, Surat, Rajesh Chouhan/Sardar Vallabhbhai National Institute of Technology, Surat, Ashish Dhamaniya/Sardar Vallabhbhai National Institute of Technology, Surat, Constantinos Antoniou/Sardar Vallabhbhai National Institute of Technology, Surat

Interpretable Machine Learning for Mode Choice Modeling on Tracking-Based Revealed Preference Data (TRBAM-24-03845) - A240

Victoria Dahmen/Technical University of Munich, Simone Weikl/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

(continued)

GravNet: A Gravity Model for Trip Distribution Based on Graph Convolution Network and Self-Attention (TRBAM-24-04124) - A283

Mingyi He/New York University, Mingdong Lyu/New York University, Bingrong Sun/New York University, Alexander Belyi/New York University, Venu Garikapati/New York University, Stanislav Sobolevsky/New York University

One-Day Ahead Train Crowding Level Forecasting Using Gradient Boosting Model with Contextual Variables (TRBAM-24-04164) - A273

Rémi Coulaud/SNCF: Societe Nationale SNCF SA, Rima Hajou/SNCF: Societe Nationale SNCF SA, Adnene Khalbous/SNCF: Societe Nationale SNCF SA, Rodrigue Lazarus/SNCF: Societe Nationale SNCF SA, Thomas Morzadec/SNCF: Societe Nationale SNCF SA, Tom Rousseau/SNCF: Societe Nationale SNCF SA, Julien Roussel/SNCF: Societe Nationale SNCF SA

A Bi-Directional Deep Recurrent Neural Network for Modeling Travel Mode Choice Allowing for Interdependencies within Daily Activity Travel Schedule (TRBAM-24-04246) - A272

Hyukseong Lee/Yonsei University, Jinhee Kim/Yonsei University

A Data-Driven Framework for Agent-Based Modeling of Vehicular Travel Using Publicly Available Data (TRBAM-24-04259) - A262

Yirong Zhou/University of Utah, Xiaoyue Liu/University of Utah, Bingkun Chen/University of Utah, Tony Grubestic/University of Utah, Ran Wei/University of Utah, Danielle Wallace/University of Utah

Network-Wide Traffic State Forecasting Using Exogenous Information: A Multi-Dimensional Graph Attention-Based Approach (TRBAM-24-04261) - A263

Syed Islam/University of Connecticut, Monika Filipovska/University of Connecticut

Prediction of Waterborne Commerce Statistics from Automatic Identification System Data Using Machine Learning (TRBAM-24-04284) - A201

Sanjeev Bhurtyal/University of Arkansas, Fayetteville, Hieu Bui/University of Arkansas, Fayetteville, Sarah Hernandez/University of Arkansas, Fayetteville, Sandra Eksioglu/University of Arkansas, Fayetteville

A Machine Learning Method for Predicting Traffic Signal Timing from Probe Vehicle Data (TRBAM-24-04317) - A253

Juliette Ugirumurera/National Renewable Energy Laboratory (NREL), Joseph Severino/National Renewable Energy Laboratory (NREL), Qichao Wang/National Renewable Energy Laboratory (NREL), Erik Bensen/National Renewable Energy Laboratory (NREL), Jane Macfarlane/National Renewable Energy Laboratory (NREL)

A Three Stages Abnormal Taxi Order Detection and Interpretation Framework (TRBAM-24-04485) - A243

Haobo Sun/Southeast University School of Transportation, Zelun He/Southeast University School of Transportation

Robust Low-Rank Tensor Decomposition Framework for Transport Data Imputation (TRBAM-24-04540) - A202

Cheng Lyu/Technical University of Munich, Qing-Long Lu/Technical University of Munich, Xinhua Wu/Technical University of Munich, Constantinos Antoniou/Technical University of Munich

Discover Physically Analyzable Governing Nonlinearities of Traffic Network Flow Dynamics via Neural Networks (TRBAM-24-04648) - A193

Zihang Wei/Texas A&M University, Yang Zhou/Texas A&M University, Lili Du/Texas A&M University, Yunlong Zhang/Texas A&M University

HyperTraffic: A Hypergraph Convolution Network for Urban Traffic Forecasting with High-Order and Multimodal Semantic Correlations (TRBAM-24-04694) - A242

Kun Tang/NanJing University of Science and Technology, Tian Xu/NanJing University of Science and Technology, Mengmeng Yin/NanJing University of Science and Technology, Tangyi Guo/NanJing University of Science and Technology

Predicting Battery Electric Vehicle Charging Station Demand with Advanced Machine Learning: A Utilization Prediction Model (TRBAM-24-04815) - A241

Limon Barua/Argonne National Laboratory, Choudhury Siddique/Argonne National Laboratory, Yan Zhou/Argonne National Laboratory

Deep Activity Model: A Generative Deep Learning Approach for Human Mobility Pattern Synthesis (TRBAM-24-04910) - A221

Brian He/University of California, Los Angeles, Xishun Liao/University of California, Los Angeles, Qinhua Jiang/University of California, Los Angeles, Chenchen Kuai/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Deep Reinforcement Learning-Based Framework for Mobile Energy Disseminator Dispatching to Charge On-the-Road Electric Vehicles (TRBAM-24-05460) - A211

Jiaming Wang/University of Wisconsin, Madison, Jiqian Dong/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison, Shreyas Sundaram/University of Wisconsin, Madison, Samuel Labi/University of Wisconsin, Madison

A Multimodal Physics-Informed Deep Learning for Traffic State Prediction (TRBAM-24-05498) - A213

Niharika Deshpande/Old Dominion University, Hyoshin Park/Old Dominion University, Venktesh Pandey/Old Dominion University, Justice Darko/Old Dominion University

MSinT: A Multi-View, Spatio-Informed Transformer for Overweighted Vehicle Forecasting (TRBAM-24-05563) - A222

Ruixuan Zhang/New York University, Tu Lan/New York University, Zilin Bian/New York University, Kaan Ozbay/New York University

Predicting Vehicle Miles Traveled: Traditional Statistical Models Versus Machine Learning Approaches (TRBAM-24-05582) - A250

Guang Tian/University of New Orleans, Bob Danton/University of New Orleans, Bin Li/University of New Orleans, Vijaya Gopu/University of New Orleans, Julius Codjoe/University of New Orleans

Cross-Mode Knowledge Adaptation for Bikesharing Demand Prediction Using Domain-Adversarial Graph Neural Networks (TRBAM-24-05662) - A280

Yuebing Liang/University of Hong Kong, Guan Huang/University of Hong Kong, Zhan Zhao/University of Hong Kong

A Genetic Algorithm Approach to Auction-Based Traffic Assignments (TRBAM-24-05722) - B594

Mehrzad Mehrabipour/North Carolina State University, Ali Hajbabaie/North Carolina State University

Design of the Road Traffic Digital Base Container Using Multi-Source Heterogeneous Data Fusion (TRBAM-24-05777) - B584

Zhixuan Wang/Tongji University, Size Yao/Tongji University, Bo Yu/Tongji University, Yuren Chen/Tongji University, Yi Li/Tongji University

A Two-Stage, Multi-Task Learning Model for Proactive Non-Recurrent Traffic Prediction (TRBAM-24-05817) - B583

Haocheng Duan/Carnegie Mellon University, Hao Wu/Carnegie Mellon University, Peter Huang/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

Enhancing TransWorldNG with a Transcale and Data-Driven Traffic Simulation Framework (TRBAM-24-05891) - B582

Ding Wang/New York University, Xuhong Wang/New York University, Liang Chen/New York University, Shengyue Yao/New York University, Yi Yu/New York University, Jingru Yu/New York University, Yilun Lin/New York University, Fei-Yue Wang/New York University

A Physics Enhanced Residual Learning Framework for Traffic State Prediction (TRBAM-24-06122) - A210

Keke Long/University of Wisconsin, Madison, Zihao Sheng/University of Wisconsin, Madison, Xiaopeng (Shaw) Li/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison, Zilin Huang/University of Wisconsin, Madison

A Neural Network-Based Routing Strategy for Autonomous Vehicles with Enhanced Users' Comfort (TRBAM-24-06133) - B574

Chun-Chien Hsiao/University of Illinois, Urbana-Champaign, Gihyeob An/University of Illinois, Urbana-Champaign, Jun Han Bae/University of Illinois, Urbana-Champaign, Alireza Talebpour/University of Illinois, Urbana-Champaign

Customized Deep Generative Models to Resolve the Sampling Bias in Population Synthesis (TRBAM-24-06222) - B593

Donghyun Kwon/Korea Advanced Institute of Science and Technology (KAIST), Eui-Jin Kim/Korea Advanced Institute of Science and Technology (KAIST), Inhi Kim/Korea Advanced Institute of Science and Technology (KAIST)

Automatic Detection of Simultaneous Arrivals at Intersections as Elementary Events for Road Exposure Estimation (TRBAM-24-06232) - B592

Juan Acosta Sequeda/University of Illinois, Chicago, Sonia Mangones/University of Illinois, Chicago, Lenin Bbulla-Cruz/University of Illinois, Chicago

Contextual Artificial Intelligence for Electric Vehicle Routing with Mobile Wireless Charging (TRBAM-24-06353) - A212

Gyugeun Yoon/Seoul National University, Hyoshin Park/Seoul National University, Venktesh Pandey/Seoul National University

Intelligent Anomaly Detection for Lane Rendering Using Transformer with Self-Supervised Pre-Training and Customized Fine-Tuning (TRBAM-24-06382) - B573

Yongqi DONG/Delft University of Technology, Xingmin Lu/Delft University of Technology, Ruohan Li/Delft University of Technology, Wei Song/Delft University of Technology, Bart van Arem/Delft University of Technology, Haneen Farah/Delft University of Technology

Alleviating Modeling Dilemmas in Choice Behaviors Using Probabilistic Graphical Modeling Framework (TRBAM-24-06469) - B570

Dongwoo Lee/Incheon National University, Sybil Derrible/Incheon National University, Francisco Pereira/Incheon National University, Filipe Rodrigues/Incheon National University

(continued)

Gated Ensemble of Spatio-temporal Mixture of Experts for Multi-task Learning in Ride-hailing System (TRBAM-24-06500) - B572

Md Hishamur Rahman/University of Utah, Shakil Mohammad Rifaat/University of Utah, Soumik Nafis Sadeek/University of Utah, Masnun Abrar/University of Utah, Dongjie Wang/University of Utah

Multimodal Vehicle Trajectory Prediction Based on Intention Inference with Lane Graph Representation (TRBAM-24-03170) - A192

Yubin Chen/Tongji University, Yajie Zou/Tongji University, Yuanchang Xie/Tongji University, Yunlong Zhang/Tongji University

Int-Traj: Vehicle Intention Prediction and Trajectory Generation in Parking Scenarios Based on Bird's Eye View Representations and Deep Learning (TRBAM-24-05354) - A223

Zimu Zeng/Tongji University, Cong Zhao/Tongji University, Andi Song/Tongji University, Jing Chen/Tongji University, Yuchuan Du/Tongji University

3216



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

The Effects of Information and Communication Technologies on Transportation Choices

Nikhil Menon, Pennsylvania State University, Harrisburg, presiding

Sponsored By Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices

This session dives into exploring the effects of Information and Communication Technologies (ICT) on transportation choices.

Retaining the Transportation Benefits of COVID-19-Induced Work from Home: Understanding the Role of Worker Productivity (TRBAM-24-00038) - A113

Natalia Barbour/University of Central Florida College of Engineering and Computer Science, Mohamed Abdel-Aty/University of Central Florida College of Engineering and Computer Science, Fred Mannering/University of Central Florida College of Engineering and Computer Science

Pandemic Immobilities and Implications for Commuting: Consequences of COVID-19 Mandatory Telecommuting (TRBAM-24-00089) - B500

Rui Colaco/Universidade de Lisboa Instituto Superior Tecnico, Laisa Kappler/Universidade de Lisboa Instituto Superior Tecnico, João de Abreu e Silva/Universidade de Lisboa Instituto Superior Tecnico

Latent Class Models with an Error Structure: Investigating Potential Unobserved Associations Between Latent Segmentation and Behavior Generation (TRBAM-24-00185) - A142

Sung Hoo Kim/Hanyang University, Patricia Mokhtarian/Hanyang University

Multimodal Ridematching with Transfers and Travel Time Uncertainty (TRBAM-24-00197) - B501

Patrick Stokkink/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL), André de Palma/Ecole Polytechnique Federale de Lausanne (EPFL)

No One Rides for Free: Risk, Reward, and Uncertainty in Ridesharing (TRBAM-24-00389) - B502

Julene Paul/University of Texas, Arlington

Anticipating the Changes in Travel-Based Activities Preferences and Travel Time Usefulness Evaluations in Autonomous Vehicle Travel (TRBAM-24-00396) - A102

Sailesh Acharya/National Renewable Energy Laboratory (NREL), Atul Subedi/National Renewable Energy Laboratory (NREL), Patrick Singleton/National Renewable Energy Laboratory (NREL)

Long-Term Effects of COVID-19 on Time Allocation, Travel Behavior, and Shopping Habits in the United States (TRBAM-24-00632) - B503

Hui Shi/University of California, Santa Barbara, Konstadinos Goulias/University of California, Santa Barbara

Exploring Heterogeneity in ICT Usage and Travel Pattern Changes as the Pandemic Subsides (TRBAM-24-01026) - B504

Afsana Chowdhury/Florida International University, Ibukun Titiloye/Florida International University, Md Al Adib Sarker/Florida International University, Xia Jin/Florida International University

Determinant Factors of Moped Sharing's Frequency of Use and Its Impact on the Perceived Need to Own a Car in the Future (TRBAM-24-01045) - B510

Maria Vega-Gonzalo/Universidad Politécnica de Madrid, Álvaro Aguilera-García/Universidad Politécnica de Madrid, Juan Gomez/Universidad Politécnica de Madrid, José Manuel Vassallo/Universidad Politécnica de Madrid

The Interplay Between Teleworking Choice and Commute Distance (TRBAM-24-01078) - A110

Katherine Asmussen/University of Texas, Austin, Aupal Mondal/University of Texas, Austin, Chandra Bhat/University of Texas, Austin

(continued)

Risky Choice and Diminishing Sensitivity in Mobility-as-a-Service Context: A Nonlinear Logit Analysis of Traveler Behavior (TRBAM-24-01194) - B511

Jianing LIU/Hong Kong University, Sisi Jian/Hong Kong University, Chenyang Wu/Hong Kong University, Vinayak DIXIT/Hong Kong University

Consumer Preferences for Ridehailing: Barriers to an Autonomous, Shared, and Electric Future (TRBAM-24-01258) - B512

Tamara Sheldon/King Abdullah Petroleum Studies and Research Center, Rubal Dua/King Abdullah Petroleum Studies and Research Center

Multi-Leader, Multi-Follower Games for Platforms and Travelers in Mobility-as-a-Service (TRBAM-24-01295) - B513

Xiang Zhang/Dalian Maritime University, Hewen Qin/Dalian Maritime University, Haoning Xi/Dalian Maritime University, Qien Zhang/Dalian Maritime University, Steven Travis Waller/Dalian Maritime University

Vehicle Automation, Onboard Environment, and In-Vehicle Time Use (TRBAM-24-01365) - A103

Sailesh Acharya/National Renewable Energy Laboratory (NREL)

Reintroducing Multinomial Logit Switching Regression Models: Examining the Treatment Effect of Two Teleworking Frequency Categories on Vehicle Miles Driven (TRBAM-24-01374) - A143

Xinyi Wang/Massachusetts Institute of Technology, Patricia Mokhtarian/Massachusetts Institute of Technology

Examining the Factors Affecting Work Arrangement Choice in Halifax, Canada (TRBAM-24-01381) - A100

Md Asif Hasan Anik/Dalhousie University, Muhammad Habib/Dalhousie University

Why Are People Leaving Public Transport?: A Panel Study of Changes in Transit-Use Patterns Between 2019, 2021, and 2022 in Montréal, Canada (TRBAM-24-01406) - A123

Rodrigo Victoriano-Habit/McGill University, Ahmed El-Genaidy/McGill University

Addressing the Quality-Value-Satisfaction-Loyalty Framework in Post-Use Behaviors of Shared E-Scooter Riders (TRBAM-24-01453) - A140

Sajad Askari/University of Illinois, Chicago, Mohammadjavad Javadinasr/University of Illinois, Chicago, Abolfazl (Kouros) Mohammadian/University of Illinois, Chicago, Nazmul Arefin Khan/University of Illinois, Chicago, Farideddin Peiravian/University of Illinois, Chicago, Joshua Auld/University of Illinois, Chicago

Assessing Prices, Discounts, and Mobility Budget Schemes in Mobility-as-a-Service Bundles Using an Agent-Based Modeling Approach (TRBAM-24-01717) - B514

Carolina Cisterna/University of Luxembourg, Federico BIGI/University of Luxembourg, Francesco VITI/University of Luxembourg

Use of Galvanic Skin Response in a Stated Preference Survey to Assess Factors Influencing College Student Use of Transit (TRBAM-24-01980) - B520

Hardik Gupta/Stevens Technical Services, Inc, Mark Burris/Stevens Technical Services, Inc

Exploring the Hidden Features of the Impact of Autonomous Vehicles on Travelers' Mode Choice Behavior: Applying a Latent Variable Structure (TRBAM-24-02066) - B521

Zihang Wei/Texas A&M University, College Station, Yue Wu/Texas A&M University, College Station, Yunlong Zhang/Texas A&M University, College Station

Revealing Determinants of Individuals' Willingness to Share Rides Through a Big Data Approach (TRBAM-24-02068) - A162

Guan Huang/University of Hong Kong, Ting Lian/University of Hong Kong, A.G.O Yeh/University of Hong Kong, Zhan Zhao/University of Hong Kong

Investigating Drivers' Attitudes and Cut-In Strategies Toward Automated Vehicles Under Connected and Non-Connected Environment (TRBAM-24-02169) - B522

Yuhan Zhang/Southeast University, Yichang Shao/Southeast University, Liyang Hu/Southeast University, Xiaomeng Shi/Southeast University, Zhirui Ye/Southeast University

Estimating the Willingness to Pay for Autonomous Grocery Delivery Across U.S. Households (TRBAM-24-02288) - B523

Connor Forsythe/Carnegie Mellon University, Corey Harper/Carnegie Mellon University, Jeremy Michalek/Carnegie Mellon University

Modeling Household Online Shopping and Home Delivery Demand Using Latent Class Generalized Extreme Value Models (TRBAM-24-02384) - B524

Kaili Wang/University of Toronto, Ya Gao/University of Toronto, Khandker Habib/University of Toronto

Jointly Modeling Work Arrangements and Vehicle Kilometer Traveled for Non-Work Travel: An Endogenous Switching Regression Modeling Approach (TRBAM-24-02525) - A120

Shivam Khaddar/University of British Columbia, Varun Varghese/University of British Columbia, Mahmudur Fatmi/University of British Columbia, Makoto Chikaraishi/University of British Columbia

(continued)

Heterogeneity in Intrapersonal Schedule Regularity Throughout the COVID-19 Pandemic (TRBAM-24-03173) - A133

Mohamed Bouzaghrane/University of California, Berkeley, Joan Walker/University of California, Berkeley, Marta Gonzalez/University of California, Berkeley

What Motivates People to Work While Traveling and What Determines the Associated Productivity?: A Case Study of United Kingdom Rail Travelers Using a Structural Equation Modeling Approach (TRBAM-24-03368) - B530

Alessandra Abeille/Imperial College London, Jacek Pawlak/Imperial College London, Aruna Sivakumar/Imperial College London, Caspar Chorus/Imperial College London, Eric Molin/Imperial College London

Matching and Pricing Algorithm in a Ridehailing Service Based on Reinforcement Learning to Reduce Pickup Waiting Time (TRBAM-24-03384) - B531

Da-Woon Jeong/Seoul National University, Sedong Moon/Seoul National University, Dong-Kyu Kim/Seoul National University

Assessing Young People's Attitudes and Comfort Levels in Sharing Information via Ridematching Apps (TRBAM-24-03447) - B532

Christos Gkartzonikas/University of Cyprus, Loukas Dimitriou/University of Cyprus

Exploring the Relationship Between the Journey to Work and Employment Characteristics (TRBAM-24-03668) - A150

Eric Morris/Clemson University, Fariba Siddiq/Clemson University, Evelyn Blumenberg/Clemson University

Going Nowhere Faster: Did the COVID-19 Pandemic Accelerate the Trend Toward Staying Home? (TRBAM-24-03953) - A151

Eric Morris/University of California, Los Angeles, Samuel Speroni/University of California, Los Angeles, Brian Taylor/University of California, Los Angeles

An Investigation of Dissonance in Telework Frequency (TRBAM-24-04061) - A111

Samantha Anderson/University of Texas, Austin, Katherine Asmussen/University of Texas, Austin, Shobhit Saxena/University of Texas, Austin, Irfan Batur/University of Texas, Austin, Ram Pendyala/University of Texas, Austin, Chandra Bhat/University of Texas, Austin

Change in Household Vehicle Ownership and Trip Distance of Ridehailing Users: A Propensity Score Matching and Difference-in-Difference Approach (TRBAM-24-04108) - B533

Shubhayan Ukil/University of Michigan, Aditi Misra/University of Michigan

Working from Home: Analyzing Activity Travel Patterns in the Pandemic (2021–2022) (TRBAM-24-04149) - A152

Rezwana Rafiq/University of California, Irvine, Michael McNally/University of California, Irvine, Md Yusuf Uddin/University of California, Irvine

Analysis of Travel Mode Choice of Shanghai Residents Based on Bayesian Modeling (TRBAM-24-04219) - B534

Yiyue Wang/Tongji University, Xin Ye/Tongji University

Exploring the Impact of Transportation Network Companies on the Taxi Industry in the Context of the COVID-19 Pandemic: Evidence from Chicago (TRBAM-24-04332) - B540

Diego Correa/University of Azuay & Cuenca, Kaan Ozbay/University of Azuay & Cuenca

Hybrid Work Arrangement Choices and Their Implications for Home Office Frequencies (TRBAM-24-04410) - B541

Daniel Heimgartner/ETH Zurich, Kay Axhausen/ETH Zurich

Is Tele-X the Solution for Reducing Traffic Congestion and Emissions?: Findings from a Comprehensive Activity-Based Modeling Analysis (TRBAM-24-04416) - B542

Qinhua Jiang/University of California, Los Angeles, Brian He/University of California, Los Angeles, Qiao Yu/University of California, Los Angeles, Yifang Zhu/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

A Joint Model for In-Person and Online Participation in Grocery Shopping, Health Services, Personal Business, and Dine in After the Pandemic (TRBAM-24-04567) - A121

Imrul Shafie/University of British Columbia, Mahmudur Fatmi/University of British Columbia, Shivam Khaddar/University of British Columbia

Harnessing Explainable Artificial Intelligence to Navigate Rural Roadway Congestion Measures (TRBAM-24-04578) - B543

Subasish Das/Texas State University, Jinli Liu/Texas State University, Md Nasim Khan/Texas State University, David Mills/Texas State University

Exploring the Influences of Ridehailing Services on Vehicle Miles Traveled and Transit Usage: Evidence from California (TRBAM-24-04585) - B544

Guang Tian/University of New Orleans, Reid Ewing/University of New Orleans, Han Li/University of New Orleans

(continued)

Implementing Work Arrangement Choices and Virtual Activity Participation Within an Integrated Transport and Land Use Model (TRBAM-24-04926) - A101

Md Asif Hasan Anik/Dalhousie University, Nazmul Arefin Khan/Dalhousie University, Muhammad Habib/Dalhousie University

Unveiling the Teleworking Effect: How Remote Work Alters Residential Choices and Commuting Preferences (TRBAM-24-05008) - B550

Ilka Dubernet/German Aerospace Center (DLR), Institute of Transport Research, Viktoriya Kolarova/German Aerospace Center (DLR), Institute of Transport Research

Does E-Shopping Mitigate the Impact of the Built Environment on Travel Behavior?: Evidence from Shanghai (TRBAM-24-05362) - A163

Fangyi Ding/University of Hong Kong, Yun Han/University of Hong Kong, Zhan Zhao/University of Hong Kong

Improving Telecommuting Prevalence Estimates Using Sentiment Analysis of Twitter Data (TRBAM-24-05708) - A141

Juan Acosta Sequeda/University of Illinois, Chicago, Motahare (Yalda) Mohammadi/University of Illinois, Chicago, Sarthak Patipati/University of Illinois, Chicago, Abolfazl (Kouros) Mohammadian/University of Illinois, Chicago, Sybil Derrible/University of Illinois, Chicago

A Random Intercept Latent Transition Analysis of Consumer Spending Across Online and In-Person Channels Through the Pandemic (TRBAM-24-05738) - A132

Hani Mahmassani/Northwestern University, Divyakant Tahlyan/Northwestern University, Amanda Stathopoulos/Northwestern University, Maher Said/Northwestern University, Susan Shaheen/Northwestern University, Joan Walker/Northwestern University

Unlocking Telecommuting Patterns: An Explainable Artificial Intelligence–Driven Study Before, During, and After COVID-19 (TRBAM-24-05750) - B551

Adedolapo Ogungbire/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville

Modeling Ridehailing Shift Before and After the COVID-19 Pandemic: An Ordered Logit Approach (TRBAM-24-05802) - A130

Draco Tong/Northwestern University, Hoseb Abkarian/Northwestern University, Nadim Hamad/Northwestern University, Hani Mahmassani/Northwestern University

The Emergence of Third Places Beyond Central Cores: A Case Study of Chicago (TRBAM-24-05841) - A131

Nadim Hamad/Northwestern University, Divyakant Tahlyan/Northwestern University, Ying Chen/Northwestern University, Hani Mahmassani/Northwestern University

Winning the Intraday Competition in Duopoly Ridehailing Markets: Joint Pricing and Matching Optimization (TRBAM-24-05856) - B552

Yue Yang/The University of Sydney, Mohsen Ramezani/The University of Sydney

COVID-19 and Telecommuting-Induced Changes in Individual Activity and Travel Patterns (TRBAM-24-05947) - A112

Grace Jia/University of Washington, Ekin Ugurel/University of Washington, Kaitlyn Ng/University of Washington, Ram Pendyala/University of Washington, Cynthia Chen/University of Washington

How well can ICT mobility indices perform in inferring public transport ridership changes? (TRBAM-24-06221) - B553

Maximiliano Lizana/University of Leeds, Charisma Choudhury/University of Leeds, David Watling/University of Leeds

Investigating the Effects of Spatial Centralities and Individual Attitudes on Automated Mobility-On-Demand Service Preference: A Hybrid Choice Modeling Approach (TRBAM-24-06250) - B554

Yuseung Oh/Yonsei University, Jaehyung Lee/Yonsei University, Jinhee Kim/Yonsei University

Exploratory Analysis of Activities and Travel Patterns Based on Crowdsourced GPS Tracking Data and Micro Land Cover Data: Observation across the COVID-19 Period in Daegu City, South Korea. (TRBAM-24-06363) - B560

Jaehyeong Kong/KRIHS: Korea Research Institute for Human Settlements, Jae Lee/KRIHS: Korea Research Institute for Human Settlements, Seo Youn Yoon/KRIHS: Korea Research Institute for Human Settlements

Analyzing Non-work Trip Generation of Telecommuters and Commuters (TRBAM-24-06368) - A153

Rezwana Rafiq/University of California, Irvine

User's Travel Behavior of Shared Autonomous Vehicles as the FMLM Connection of Subway (TRBAM-24-06520) - B562

Xuebin Zhang/Inner Mongolia University, Yueying Huo/Inner Mongolia University, Yaning Wang/Inner Mongolia University

Unraveling E-Scooter Rider Types in the United States: A Latent Class Cluster Analysis (TRBAM-24-05146) - B563

Aurojeet Jena/University of California, Davis, Alimurtaza Kothawala/University of California, Davis, Basar Ozbilen/University of California, Davis, Kailai Wang/University of California, Davis, Yongsung Lee/University of California, Davis, Charalampos Saridakis/University of California, Davis, Zia Wadud/University of California, Davis, Yuanxuan Yang/University of California, Davis, Susan Grant-Muller/University of California, Davis, Sebastian Castellanos/University of California, Davis, Giovanni Circella/University of California, Davis

Jointly Modeling the Usage of Shared E-Bike, Shared E-Scooter, Carshare, and Public Transit Services (TRBAM-24-05253) - A122

Uthpalee Hewage/University of British Columbia, Mahmudur Fatmi/University of British Columbia, Md Shahadat Hossain/University of British Columbia

A Novel Methodology to Identify Factors Causing Heterogeneity in the Travel Demand During and After the Pandemic (TRBAM-24-05743) - B564

Siddhartha Gulhare/University of California, Davis, James Giller/University of California, Davis, Krishna Behara/University of California, Davis, David Bunch/University of California, Davis, Giovanni Circella/University of California, Davis

3217



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Transportation Performance Management

Anna Batista, High Street Consulting Group, LLC, presiding
Michael Grant, ICF, presiding

Sponsored By Standing Committee on Performance Management

This session includes poster presentations of new research in transportation performance management.

Measuring the Performance of the Transportation System in Texas Based on Transportation Planning Process Using Data Envelopment Analysis (TRBAM-24-04978) - A332

Eun Lee/Texas A&M Transportation Institute, Jolanda Prozzi/Texas A&M Transportation Institute, P. Grace Lewis/Texas A&M Transportation Institute, Maia Draper/Texas A&M Transportation Institute, Bumsik Kim/Texas A&M Transportation Institute

Inference of Causal Relations Between External Factors and Transportation System Performance Measures from Low-Frequency Time-Series Data (TRBAM-24-04811) - A333

JohnPaul Adimonyemma/FAMU-FSU College of Engineering, Hui Wang/FAMU-FSU College of Engineering, Yanshuo Sun/FAMU-FSU College of Engineering

Performance Measurement at the U.S. Department of Transportation Under the Infrastructure Investment and Jobs Act (TRBAM-24-04339) - A342

Joseph Jarrin/U.S. Department of Transportation Office of the Under Secretary for Policy, Victoria Wassmer/U.S. Department of Transportation Office of the Under Secretary for Policy

A Performance-Based Approach to Developing Capabilities for Building Resilience to Climate Hazards in Transportation Systems (TRBAM-24-04142) - A343

Adjo Amekudzi-Kennedy/Georgia Institute of Technology, Zhongyu Yang/Georgia Institute of Technology, Prerna Singh/Georgia Institute of Technology, Adair Garrett/Georgia Institute of Technology

3218



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Public Engagement and Communications

Jamille Robbins, North Carolina Department of Transportation, presiding

Sponsored By Standing Committee on Public Engagement and Communications

The Public Engagement & Communications Poster Session will highlight best practices, new technologies and lessons learned, build awareness and skills, and advance the state of the art in public involvement and communications for transportation.

Safety Campaigns for People Walking, Bicycling, and Driving in Hillsborough, Pinellas, Pasco, Hernando, and Citrus Counties (P24-20223) - A372

Brentin Mosher/University of South Florida, Michael Zinn/Florida Department of Transportation

(continued)

183 South Trail, Austin, Texas (P24-20224) - A373

Hillary Lacy/Atkins N.A., Jori Liu/Central Texas Regional Mobility Authority, Sylvia Shelton/Central Texas Regional Mobility Authority

University Peer-to-Peer Bicyclist and Pedestrian Safety Engagement Program (P24-20233) - B770

Jason Jackman/University of South Florida, Maura Andrews/Florida Department of Transportation

SW 10th Street Connector Project Development and Environment Study, Deerfield Beach, Florida (P24-20235) - B772

Paul Heeg/RS&H, Inc., Andrew Poszich/RS&H, Inc.

Healthy Havoc (P24-20236) - B773

Andy Boenau/City of Richmond

Returning to Hosting In-Person Public Meetings (P24-20239) - B774

Patrick Marvin/HNTB Corporation

Tailgate Talk (P24-20256) - B775

Carly Olexik/North Carolina Department of Transportation, Aaron Schoonmaker/North Carolina Department of Transportation

Florida's Complete Streets Website: A 360 Approach (P24-20257) - B787

Justin Cole/RS&H, Inc., Andrew Poszich/RS&H, Inc.

NCTA Back Office System 2 Launch (P24-20258) - B786

Logen Hodges/North Carolina Turnpike Authority

Interstate Bridge Replacement, I-5 Span Between Washington State and Oregon State, City of Vancouver, Washington, and Portland, Oregon (P24-20259) - B785

Jessica Brand/Washington State Department of Transportation, Kimberly Pincheira/Washington State Department of Transportation, Meghan Hodges/Washington State Department of Transportation

New Jersey Department of Transportation Safety Resource Center (P24-20260) - B784

Liz Stoppelmann/HDR, Jeevanjot Singh/New Jersey Department of Transportation

I-10 Broadway Curve Improvement Project Ready to Rubble: The Ultimate Bridge Takedown Event (P24-20267) - B783

Nicole Moon/WSP, Marcy McMacken/Arizona Department of Transportation, Amy Ritz/Arizona Department of Transportation

Overcoming the Fear of Change Through Communication and Temporary Pavement Striping (P24-20268) - B782

Candice Wallace/Kentucky Transportation Cabinet, Matt Simpson/Kentucky Transportation Cabinet

Metro's Experience LIVE!: Engagement for the Better Bus Network Redesign (P24-20269) - B781

Alanna McKeeman/Foursquare Integrated Transportation Planning, Lisa Schooley/Washington Metropolitan Area Transit Authority

Transportation Modernization Act Communications Campaign (P24-20270) - B780

Jennifer Schultz/HNTB Corporation, Stephen Townsend/Tennessee Department of Transportation

Successful Communication for Wisconsin's First Flex Lane (P24-20271) - A380

John DesRivieres/Wisconsin Department of Transportation

Connecticut Department of Transportation Customer Experience Action Plan (P24-20272) - A381

Samantha Savvidou/Connecticut Department of Transportation, Daniel Baker/Connecticut Department of Transportation

The Residents Guide and the Elected Officials Guide to Transportation (P24-20274) - A382

RACHEL GAYLORD-MILES, Diane Wilson/North Carolina Department of Transportation

Massachusetts Bay Transportation Authority 30-Day Orange Line Subway Shutdown (P24-20278) - A383

Billy Parent/HNTB, Angel Donahue-Rodriguez/Massachusetts Bay Transportation Authority (MBTA)

3219



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Project Delivery Methods

Jay Hietpas, Minnesota Department of Transportation, presiding
Ghada Gad, California State Polytechnic University, Pomona, presiding
Sponsored By Standing Committee on Project Delivery Methods

Visualizing Design-Build Quality Management Performance with Data Mining and Linear Scheduling (TRBAM-24-00806) - B672

Ricardo Tapia/Gransberg & Associates, Inc., Bridget Kocot/Gransberg & Associates, Inc., Douglas Gransberg/Gransberg & Associates, Inc.

(continued)

Implementing Post-Award Contract Administration for Highway Projects Delivered Using Design-Build and Construction Manager-General Contractor Delivery Methods (TRBAM-24-00868) - B673

Hala Sanboskani/Arizona State University, Tempe, Dean Papajohn/Arizona State University, Tempe, Mounir El Asmar/Arizona State University, Tempe

Lessons Learned from Pilot Design-Build Transportation Projects (TRBAM-24-01435) - B674

Mark Gottlieb/University of Wisconsin, Milwaukee, Scott Solverson/University of Wisconsin, Milwaukee, Mohammad Amer/University of Wisconsin, Milwaukee, Xiao Qin/University of Wisconsin, Milwaukee

When Contract Clauses Conflict: The Case of the Salvador Light Rail Vehicle Concession (TRBAM-24-04627) - B675

Naielly Marques/Pontifical Catholic University of Rio de Janeiro, Carlos Bastian-Pinto/Pontifical Catholic University of Rio de Janeiro, Luiz Eduardo Brandão/Pontifical Catholic University of Rio de Janeiro

Best Value Weighted Criteria Award Algorithm: Does the Number of Non-Cost Criteria in the Equation Matter? (TRBAM-24-04788) - B677

Maria Calahorra-Jimenez/California State University, Fresno, Gustavo Garcia Melero/California State University, Fresno

Comprehensive Scope of Services Template and Tool for Engineering Design Services of Transportation Infrastructure Projects (TRBAM-24-00039) - B678

Ahmad Zaki Ghafari/Clemson University, Ajay Jadhav/Clemson University, Ehsan Mousavi/Clemson University

3220



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

The Use of Polymer-Based Materials for Paving of Steel Bridge Decks and Sealing of Concrete Surfaces

Michael Stenko, Transpo Industries, Inc., presiding

Sponsored By Standing Committee on Polymer Concretes, Adhesives, and Sealers

Curing-Dependent Chemical, Rheological, and Weight Loss of a Super Tough Resin for Steel Bridge Pavement Binders (TRBAM-24-00699) - B694

Yajin Han/Southeast University, Jiwang Jiang/Southeast University, Jiahao Tian/Southeast University, Zhu Zhang/Southeast University, Fujian Ni/Southeast University, Qiao Dong/Southeast University

Full-Temperature Performance Characterization of Super Tough Resin Concrete for Steel Bridge Deck Paving (TRBAM-24-00973) - B693

Yajin Han/Southeast University, Jiahao Tian/Southeast University, Jitong Ding/Southeast University, Zhu Zhang/Southeast University, Jiwang Jiang/Southeast University, Fujian Ni/Southeast University

Rheological Investigation of a Super-Tough, Resin-Based Binder for Steel Bridge Deck Paving (TRBAM-24-01205) - B692

Yajin Han/Southeast University, Jiahao Tian/Southeast University, Zhu Zhang/Southeast University, Zhou Zhou/Southeast University, Jiwang Jiang/Southeast University, Fujian Ni/Southeast University

Gradation Design and Performance Study of Room Temperature, Self-Compacting Polyurethane Mixture for Steel Bridge Deck Pavement (TRBAM-24-01909) - B691

Shaochan Duan/Southeast University, Xiaonan Wu/Southeast University, Tao Ma/Southeast University

The Evaluation of Concrete Sealants and Surface Coatings for Controlling Moisture in Concrete (TRBAM-24-05622) - B690

Harsha Amunugama/Western Michigan University, Upul Attanayake/Western Michigan University

3221



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Performance of Pavement Preservation Treatments

Travis Walbeck, National Center for Asphalt Technology (NCAT), presiding

Sponsored By Standing Committee on Pavement Preservation

The presenters will provide the latest research and data-driven study results to quantify the effectiveness of pavement preservation, the performance of various pavement preservation treatments under different traffic and climatic regions, and the factors affecting the performance of pavement preservation treatments. The treatments investigated in this session include the common micro surfacing, chip seals, thin asphalt overlays, and ultrathin whitetopping.

Short- and Long-Term Mechanical Performances of Damaged Porous Asphalt Mixture Treated with Asphalt Emulsion (TRBAM-24-01275) - B695

Bin Yang/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Jiwang Jiang/Hong Kong Polytechnic University, Rui Li/Hong Kong Polytechnic University, Meizhao Han/Hong Kong Polytechnic University, Guoyang Lu/Hong Kong Polytechnic University

Research on the Durability of the Polyurethane Ultra-Thin Wear Layer for Pavement (TRBAM-24-01709) - B696

Miao Yu/Chongqing Jiaotong University, Junsen Zeng/Chongqing Jiaotong University, Chengliang Long/Chongqing Jiaotong University, Zhanping You/Chongqing Jiaotong University, Liming Yang/Chongqing Jiaotong University, Jue Li/Chongqing Jiaotong University, Yi Peng/Chongqing Jiaotong University

Massachusetts Route 3: A SHRP 2 Product R26 Case Study in Preservation Approaches for High-Traffic Volume Roadways Along with High-Speed Shoulder Preservation Treatments (TRBAM-24-02269) - B697

Alexander Austerman/University of Massachusetts, Dartmouth, Walaa Mogawer/University of Massachusetts, Dartmouth, Kevin Stuart/University of Massachusetts, Dartmouth, Siavash Fakhretaha Aval/University of Massachusetts, Dartmouth

Material Optimization and Performance Evaluation of Anti-Freezing Micro-Surfacing (TRBAM-24-03283) - B698

Yunze Pang/Harbin Institute of Technology, Liyan Shan/Harbin Institute of Technology, Guohua Liu/Harbin Institute of Technology

Performance Prediction Model of an Engineered Cementitious Composite Ultra-Thin Whitetopping (TRBAM-24-03561) - B699

Ricardo Hungria/Louisiana State University, Hassan Noorvand/Louisiana State University, Gabriel Arce/Louisiana State University, Marwa Hassan/Louisiana State University, Mahdi Moinul/Louisiana State University

3222



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Advancement in Pavement Preservation

Amy Simpson, WSP, presiding

Sponsored By Standing Committee on Pavement Preservation

The objective is to foster collaboration between researchers and practitioners, facilitating discussions on the latest developments in pavement preservation. These discussions will delve into the effective utilization of lifecycle cost analysis and pavement management systems to maximize the advantages of pavement preservation.

A Stochastic Framework for Life-Cycle Cost Analysis of Porous Asphalt Life-Extension Maintenance Methods (TRBAM-24-02604) - B706

Avishreshth Singh/Delft University of Technology, Aikaterini Varveri/Delft University of Technology

Linking Life-Cycle Assessment and Environmental Product Declaration for Jointed Reinforced Internally Cured Concrete Pavements (TRBAM-24-02721) - B707

Fariborz Tehrani/Expanded Shale, Clay and Slate Institute

Optimization of Preservation Versus Rehabilitation (Budget) Ratio Using Pavement Management Systems: A California Department of Transportation Case Study (TRBAM-24-04766) - B708

Venkata Lakshman Mandapaka/California Department of Transportation, Robert Hogan/California Department of Transportation, Jeremy Lea/California Department of Transportation

Development of Crack Sealing Method Using 3D Printing Technology in Asphalt Pavement (TRBAM-24-01110) - B709

Tam Phan/Kunsan National University, Anh Nguyen/Kunsan National University, Jae-Hyeong Yoon/Kunsan National University, Dae-Wook Park/Kunsan National University

3223



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Implementing Pavement Maintenance

Saleh Yousefi, Crafcoc, Inc., presiding

Sponsored By Standing Committee on Pavement Maintenance

Strategies for Managing an In-Service Continuously Reinforced Concrete Pavement in Illinois (TRBAM-24-02296) - B700

Abhik Borthakur/Applied Pavement Technology, Inc., Arturo Espinoza-Luque/Applied Pavement Technology, Inc., Kelly Smith/Applied Pavement Technology, Inc., Kurt Smith/Applied Pavement Technology, Inc., Michael Short/Applied Pavement Technology, Inc.

Optimizing Resources to Maximize the Benefits of Highway Improvements (TRBAM-24-02614) - B701

Lucille Cawley/University of Wyoming, Imran Reza/University of Wyoming, Khaled Ksaibati/University of Wyoming

Developing a Pavement Marking Management Plan for Wyoming (TRBAM-24-03113) - B702

Mst Rahanuma Tajnin/University of Wyoming, Khaled Ksaibati/University of Wyoming

Inferring the Causal Relationship Between Mixed Highway Traffic and Raveling Based on Field Data (TRBAM-24-04885) - B703

Zili Wang/Delft University of Technology: Technische Universiteit Delft, Panchamy Krishnakumari/Delft University of Technology: Technische Universiteit Delft, Kumar Anupam/Delft University of Technology: Technische Universiteit Delft, Hans van Lint/Delft University of Technology: Technische Universiteit Delft, Sandra Erkens/Delft University of Technology: Technische Universiteit Delft

Image2PCI: A Multi-Task Learning Framework for Estimating Pavement Condition Indices Directly from Images (TRBAM-24-05245) - B704

Neema Jakisa Owor/University of Missouri, Columbia, Hang Du/University of Missouri, Columbia, Abdulateef Daud/University of Missouri, Columbia, Armstrong Aboah/University of Missouri, Columbia, Yaw Adu-Gyamfi/University of Missouri, Columbia

Use of Laser Texture Scanner to Control Quality of Chip Seal Construction (TRBAM-24-05879) - B705

Angelique Umtoniwase/Washington State University, Haifang Wen/Washington State University, Kevin Littleton/Washington State University

3224



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

New Research in Transportation Equity

Gloria Jeff, Minnesota Department of Transportation, presiding

Tracee Strum-Gilliam, PRR, Inc., presiding

Sponsored By Standing Committee on Equity in Transportation

This poster session features emerging research in transportation equity across a wide variety of domains, including active transportation, electric vehicles, car use and ownership, and novel metrics and indicators to measure equity.

Estimating Spatial Inequities in Last-Mile Delivery: A National Analysis (TRBAM-24-00041) - B610

Travis Fried/University of Washington, Anne Goodchild/University of Washington, Ivan Sanchez-Diaz/University of Washington, Michael Browne/University of Washington

Effects of Hybrid Teleworking on Socio-Spatial Job Accessibility Inequalities Among Groups in the Dutch Workforce (TRBAM-24-00282) - B611

Luc Wismans/Goudappel Group, Stella van Lent/Goudappel Group, Mehmet Ulak/Goudappel Group, Christian Evers/Goudappel Group, Sander van der Drift/Goudappel Group, Karst Geurs/Goudappel Group

Evaluating How Transportation Policy Addresses Transport-Related Social Exclusion: A Novel Method Applied to the Amsterdam Transport Region (TRBAM-24-00531) - B612

Matthew Bruno/TU Delft, Machiel Kouwenberg/TU Delft, Niels Van Oort/TU Delft

Equity of Highway Noise Exposure (TRBAM-24-00643) - B613

Thor Dodson/Federal Highway Administration (FHWA), Viktoriia Dunleavy/Federal Highway Administration (FHWA)

New Directions for Measuring Transportation Equity (TRBAM-24-00681) - B614

Alex Karner/University of Texas, Austin, Rafael Pereira/University of Texas, Austin, Steven Farber/University of Texas, Austin

Planning Sustainable Cities: Coordinating Accessibility Improvements with Housing Policies (TRBAM-24-00691) - B615

Rounaq Basu/Massachusetts Institute of Technology, Joseph Ferreira/Massachusetts Institute of Technology

Evaluating the Equity Impacts of Shared Micromobility in Multimodal Transportation Networks (TRBAM-24-00922) - B616

Jing GAO/Hong Kong University of Science and Technology, Sen LI/Hong Kong University of Science and Technology

(continued)

A Disaggregated Approach for Evaluating Distributional Equity Impacts of Automated Vehicles (TRBAM-24-01521) - B619

Zhiwei Chen/Drexel University, Amy Stuart/Drexel University, Yujie Guo/Drexel University, Yu Zhang/Drexel University, Xiaopeng (Shaw) Li/Drexel University

A Multifaceted Equity Metric System for Transportation Electrification (TRBAM-24-01940) - B609

Takahiro Tsukiji/University of California, Los Angeles, Ning Zhang/University of California, Los Angeles, Qinhua Jiang/University of California, Los Angeles, Brian He/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Investigating the Relationship Among Education, Gender, Race, and Income Level and Number of Bike Rides: A National Household Travel Survey Data Analysis (TRBAM-24-02109) - B638

Amir Kamyab Moghaddam/Morgan State University, Eazaz Sadeghvaziri/Morgan State University

The Impact of the Cost-of-Living Crisis on Travel Choices of Scottish Residents: An Exploratory Analysis (TRBAM-24-02200) - B617

Grigorios Fountas/Aristotle University of Thessaloniki, Achille Fonzone/Aristotle University of Thessaloniki, Adebola Olowosegun/Aristotle University of Thessaloniki

Electrification and Justice for All?: A Review of Transportation Literature Through the Lens of Equity and Justice (TRBAM-24-02472) - B618

Jesse Strecker/Lawrence Berkeley National Laboratory, Erin Andrews-Sharer/Lawrence Berkeley National Laboratory, Erin Nobler/Lawrence Berkeley National Laboratory, Luna Hoopes/Lawrence Berkeley National Laboratory, Marianne Mintz/Lawrence Berkeley National Laboratory, Sydney Fujita/Lawrence Berkeley National Laboratory

Obstacles and Opportunities to Improving Transportation Access to Community College Education: A Review of the Education Access Literature (TRBAM-24-02512) - B629

Aqshems Meten Nichols/University of California, Berkeley, Joan Walker/University of California, Berkeley, Susan Shaheen/University of California, Berkeley

How to Create a Composite Equity Indicator for Transportation Safety (TRBAM-24-02744) - B600

Roumen Vesselinov/University of Maryland, Kartik Kaushik/University of Maryland, Joseph Kufera/University of Maryland, Kimberly Auman/University of Maryland, Komal Bhagat/University of Maryland

Exploring the Equity Impact: Analyzing the Relationship Between Railroad Safety and Sociodemographic Factors (TRBAM-24-02747) - B601

Sara Zahedian/CATT Laboratory, Ateet Maharjan/CATT Laboratory, Michael Gorman/CATT Laboratory, Mark Franz/CATT Laboratory

Advancing Transportation Equity: A Review of Concepts, Measurements, and Application in Transportation Decision Making (TRBAM-24-02803) - B602

Saki Rezwana/University of Connecticut, Davis Chacon-Hurtado/University of Connecticut, Shareen Hertel/University of Connecticut

Equitable Mobility: Analyzing Active Transportation Behavior Within Low-Income Black Communities (TRBAM-24-02844) - B637

Eazaz Sadeghvaziri/Mercer University, Ramina Javid/Mercer University, Mansoureh Jeihani/Mercer University

Transportation Equity After Adding an Aerial Cable Car Line: Physical Barriers and Multimodal Commuting in Ciudad Bolivar, Bogota (TRBAM-24-03001) - B603

Liliana Salas-Niño/University of Arizona, Fernando Sánchez-Trigueros/University of Arizona

Do Low-Income Suburbanites Commute Farther and Longer Than Urbanites?: Comparing Commute Patterns by Income and Neighborhood Type in California (TRBAM-24-03089) - B604

Madeline Wander/University of California, Los Angeles

An Environmental Equity Analysis of Urban Mobility Services: Evaluating Emission Impacts and Beneficiary Disparities Using Vehicle Trajectory Data (TRBAM-24-03242) - B605

Yuntao Guo/Tongji University, Shenglan Lu/Tongji University, Xinghua Li/Tongji University, Wei Wang/Tongji University, Xinwu Qian/Tongji University

Public Transport Accessibility Level in the Metropolitan Area: A Case Study of Greater Mumbai (TRBAM-24-03611) - B620

Manish Yadav/Indian Institute of Technology, Bombay, Gopal Patil/Indian Institute of Technology, Bombay, Rakhi Manohar Mepparambath/Indian Institute of Technology, Bombay

Inclusive Accessibility: Translating Person-Based Mobility Perceptions into Aggregated Accessibility Measures (TRBAM-24-03779) - B630

Armita Kar/Ohio State University, Ningchuan Xiao/Ohio State University, Harvey Miller/Ohio State University, Huyen Le/Ohio State University

Spatial Dashboards for Transportation Equity: Summary and Evaluation for Practice (TRBAM-24-04493) - B621

Claire McGinnis/University of California, Davis, Jesus Barajas/University of California, Davis

(continued)

A Proposed Study of Community Impacts in Reconnection and Gateway Infrastructure Toward More Just Reconnection (TRBAM-24-04654) - B622

Collin Yarbrough/Southern Methodist University, Janille Smith-Colin/Southern Methodist University

Accessibility Experience to and from Bus Stops Considering Trip Information and Socio-Demography in the Context of Travelers in a Developing Megacity (TRBAM-24-04874) - B623

Soumik Sadeek/Islamic University of Technology, Moinul Hossain/Islamic University of Technology, Jannat E Neehar/Islamic University of Technology, Md Abdullah Al Mamun/Islamic University of Technology

Who Benefits from Bikeshare Transit Access?: An Investigation of Bikeshare and Transit Use in the Motor City (TRBAM-24-05441) - B624

Tierra Bills/University of California, Los Angeles, Jonah Paten/University of California, Los Angeles, Chinyere Nwonye/University of California, Los Angeles

Facing a Time Crunch: Time Poverty and Travel Behavior in Canada (TRBAM-24-05638) - B625

Sang-O Kim/Cornell University, Matthew Palm/Cornell University, Soojung Han/Cornell University, Nicholas Klein/Cornell University

Disconnection from Green Spaces: Assessing the Barrier Effect of Highways Through Mobile Phone Data (TRBAM-24-05827) - B626

Youngjae Won/Arizona State University

Practices to Promote Equity in Transportation Funding (TRBAM-24-05926) - B627

Stephen Mattingly/University of Texas, Arlington, Nithisha Reddy Gudipati/University of Texas, Arlington, Kate Hyun/University of Texas, Arlington, Zannatul Ferdous Labony/University of Texas, Arlington, Justine Balconi-Lamica/University of Texas, Arlington

Evaluating Equitable Transit-Oriented Development via an Extended Node-Place-Vulnerability Model (TRBAM-24-05982) - B628

Yingrui Zhao/University of Maryland, College Park, Songhua Hu/University of Maryland, College Park, Ming Zhang/University of Maryland, College Park

Untangling Place and Mobility Components of Access: An Equal Opportunity Perspective (TRBAM-24-06421) - B631

Fatemeh Janatabadi/George Mason University, Alireza Ermagun/George Mason University

Assessing Mass Circular Tram Service Equity in Metropolitan City (TRBAM-24-06485) - B632

Songmi Paek/Korea Advanced Institute of Science and Technology (KAIST), Hyungchul Chung/Korea Advanced Institute of Science and Technology (KAIST), Inhi Kim/Korea Advanced Institute of Science and Technology (KAIST)

Equity Analysis at the Project Level: An Exploratory Study (TRBAM-24-05075) - B607

Zahra Halimi/University of Maryland, Mohammad SafariTaherkhani/University of Maryland, Qingbin Cui/University of Maryland

Understanding the Opportunity-Centric Accessibility for Public Charging Infrastructure: A Case Study of 10 Metro Areas in the United States (TRBAM-24-05226) - B606

hossein gazmeh/University of Alabama, Xinwu Qian/University of Alabama, Yuntao Guo/University of Alabama, Qi Wang/University of Alabama, steven jones/University of Alabama

State Capacity-Building for an Equitable Electric Vehicle Infrastructure Rollout (TRBAM-24-05995) - B608

Margaret Taylor/Lawrence Berkeley National Laboratory, Xinyi (Sydney) Wu/Lawrence Berkeley National Laboratory, Hyekyung (Clarisse) Kim/Lawrence Berkeley National Laboratory, Dongyeon (D-Y) Lee/Lawrence Berkeley National Laboratory

Urban Tolls Versus Low Traffic Neighborhood: Assessing Equity and Efficiency Impacts of Both Policies Applied to the Paris Region (TRBAM-24-06060) - B633

Rayane AlAmirdache/Laboratoire Ville Mobilite Transport, Biao Yin/Laboratoire Ville Mobilite Transport, Azise Diallo/Laboratoire Ville Mobilite Transport, Nicolas Coulombel/Laboratoire Ville Mobilite Transport, Vincent Benezech/Laboratoire Ville Mobilite Transport

Race, Rail, and the Rider Experience: Using On-Board Survey Data to Assess Transit Equity (TRBAM-24-06209) - B634

Gregory Newmark/Morgan State University, Christina Funk/Morgan State University

3225



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Gendered Travel in a Non-Automobile World

Hilary Nixon, Mineta Transportation Institute, presiding

Ying Song, University of Minnesota, Twin Cities, presiding

Sponsored By Standing Committee on Women and Gender in Transportation

This session explores gender differences in travel patterns when using public transportation, ridesharing, and active transportation. Gender is increasingly important to account for in these modes, as it can impact project prioritization metrics that support gender equity and accessibility in transportation.

How Do You Travel?: A Holistic Evaluation of Public Transport Journeys for Women in Developing Countries (TRBAM-24-00570) - B646

Ankita Sil/University of Auckland, Subeh Chowdhury/University of Auckland, Roselle Thoreau/University of Auckland

Exploring the Satisfaction of Female Riders with Ridesharing Services in a Developing Urban Community: A Structural Equation Modeling Approach (TRBAM-24-03739) - B645

Sabah Hossain Iqra/University of Texas, Austin, Mohammad Murshed/University of Texas, Austin, Armana Huq/University of Texas, Austin

Exploring Gender Differences in Perceived Physical Exertion of Walking Short-Distance Trips in Malta (TRBAM-24-02338) - B644

Karyn Scerri/University of Malta, Maria Attard/University of Malta

Examining the Evolution of Cycling Patterns Among Males and Females in the United States: Findings from the National Household Travel Surveys (TRBAM-24-00462) - B643

Saqib Mohammed Haroon/The University of Arizona, Alyssa Ryan/The University of Arizona

Unveiling Gender Disparities: Investigating Shared Bike Usage Pattern and Its Influential Factors in a Large-Scale Campus in Tianjin, China (TRBAM-24-01430) - B647

Xiaolin Tian/Hebei University of Technology, Zhenyu Liu/Hebei University of Technology, Zhixiao Ren/Hebei University of Technology, Shuai Zhang/Hebei University of Technology, Xinwei Ma/Hebei University of Technology

Planning for Gender Parity: Built Environment Barriers to Bikeshare Demand (TRBAM-24-01455) - B648

Casey Auch/Tufts University, Sumeeta Srinivasan/Tufts University, Mark Chase/Tufts University

Toward Sustainable Transport: Giving Voice to Women in Public Transport and Understanding "(Im)mobility of Care" (TRBAM-24-05483) - B649

Patricia Galilea/Pontificia Universidad Catolica de Chile, Keiko Porath/Pontificia Universidad Catolica de Chile

Enhancing Speed Control Guidance for Mixed Traffic Flow at Urban Signalized Intersections: Insights from a Driving Simulator Study (TRBAM-24-04814) - B639

Parisa Masoumi/Mercer University, Eazaz Sadeghvaziri/Mercer University, Mansoureh Jeihani/Mercer University

3226



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Vision Zero: Canada's Journey to Truth and Reconciliation

Karim Habib, Washington State Department of Transportation, presiding

Sponsored By Standing Committee on Native American Transportation Issues

Vision Zero is a global transportation ethical concept that challenges the cost-benefit analysis concept regarding human lives. In Vision Zero, the loss of a human life as a result of transportation activities is unacceptable. In North American cities, Vision Zero was adopted and modified, by many cities, to address each city's traffic safety nature. Vision Zero plans include engineering solutions for hotspots as well as equity and transportation modes accessibility strategies to create a safe transportation environment for all. Canada is striving to establish a new relationship with Indigenous peoples by providing better quality of life. Transportation is a priority for the government of Canada to achieve and advance reconciliation with the Indigenous peoples of Canada. Motivated by the above-discussed necessity, this paper highlights: 1) a summary of Vision Zero plans in Canadian and US municipalities; 2) the challenges that face and impact Indigenous Peoples of Canada from transportation perspective; 3) expanding and progressing Vision Zero goals to end any death or physical or mental injuries that could be alleviated by proper transportation, and 4) recommendations for future work concerning Indigenous people transportation issues.

(continued)

Identifying Demographics of Collisions in American Indian and Alaska Native Communities (TRBAM-24-02425) - B640

Samuel Ricord/University of Washington, Yifan Ling/University of Washington, Ollie Wiesner/University of Washington, HollyAnna Littlebull/University of Washington, Yinhai Wang/University of Washington

Vision Zero: On Canada's Journey to Truth and Reconciliation (TRBAM-24-00061) - B641

Karim Habib/Washington State Department of Transportation

4085



Tuesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Exploration of Construction Management

Timothy Taylor, University of Kentucky, presiding

Sponsored By Standing Committee on Construction Management

Explore the current state and future advances in construction management.

Highway Construction Cost Index: A Comparison Between Two Prevalent Methodologies Under the U.S. Pandemic Era Inflation (TRBAM-24-00401) - B680

Shengxian Tang/Western Michigan University, Hexu Liu/Western Michigan University, Timothy Pritchard/Western Michigan University

Highway Construction Safety Analysis Using Artificial Intelligence Large Language Models (TRBAM-24-00876) - B681

Mason Smetana/University of Pittsburgh, Igor Sukharev/University of Pittsburgh, Lucio De Salles/University of Pittsburgh, Lev Khazanovich/University of Pittsburgh

A Guiding Framework Supporting Augmented Reality Implementation for Synchronized Communication (TRBAM-24-01068) - B682

Rita EL Kassis/Arizona State University, Steven Ayer/Arizona State University, Mounir El Asmar/Arizona State University, Kristen Parrish/Arizona State University

Examining a Risk-Based Inspection Approach to Highway Pavement Construction Projects (TRBAM-24-02634) - B683

Daniel Tran/University of Kansas, Nhien Le/University of Kansas, Mamdouh Mohammed/University of Kansas

Exploring Inspection Technologies for Highway Infrastructure During Construction and Asset Management (TRBAM-24-04229) - B684

Daniel Tran/University of Kansas, Nhien Le/University of Kansas, Christofer Harper/University of Kansas, Roy Sturgill/University of Kansas

Forecasting Presence of Grading Complete Lump Sum Items in Highway Projects (TRBAM-24-05288) - B685

Mingshu Li/Georgia Institute of Technology, Minsoo Baek/Georgia Institute of Technology, Baabak Ashuri/Georgia Institute of Technology

Resiliency Evaluation for Work Zones on Two-Lane Highways (TRBAM-24-05321) - B686

Ahmed Edrees/New Jersey Institute of Technology, Steven Chien/New Jersey Institute of Technology

Assessing Contingency Allowances for North Carolina Department of Transportation Projects (TRBAM-24-05412) - B687

Abdullah Alsharef/King Saud University, Daniel Findley/King Saud University, Edward Jaselskis/King Saud University

A Review of One Call Operator Membership and Exemptions for State Departments of Transportation (TRBAM-24-05568) - B788

Roy Sturgill/Iowa State University, Timothy Taylor/Iowa State University, Gabriel Dadi/Iowa State University, Ahmed Al-Bayati/Iowa State University, Shani Montes Victorio/Iowa State University

3227

Tuesday, 06:00 p.m. - 07:30 p.m., Convention Center, Salon C

Research on Smart Mobility and the Future of Intelligent Transportation Systems

Hany Hassan, Louisiana State University, presiding

Sponsored By Standing Committee on Intelligent Transportation Systems, Young Members Coordinating Council

This Lectern session aims to present the latest research efforts related to smart mobility and the future of intelligent transportation systems. The discussed topics include: A Systematic Approach to Evaluate the State of Preparedness for Smart Mobility. Field demonstration of LTE for Infrastructure-based Vulnerable Road Users Safety. A Framework to assess the readiness of Intelligent Mobility Technologies. Emergency Vehicles Trajectory Planning on Urban Roads within Connected and Autonomous Vehicles Environment. System Development and Evaluation of a Connected C-V2X Energy-Efficient Dynamic Vehicle Routing.

A Systematic Approach to Evaluate the State of Illinois' Preparedness for Smart Mobility (P24-21028)

Angeli Jayme/University of Illinois, Urbana-Champaign

Long-Term Evolution for Infrastructure-Based Vulnerable Road Users Safety: A Field Demonstration (P24-21029)

Seyedmehdi Khaleghian/University of Tennessee, Chattanooga

Emergency Vehicles Trajectory Planning on Urban Roads Within Connected and Autonomous Vehicles Environment (P24-21030)

Wei Wu/Chongqing Jiaotong University

A Framework to Assess the Readiness of Intelligent Mobility Technologies: Data Needs and Results of a Readiness Survey (P24-21031)

Asad Khattak/The University of Tennessee Knoxville

A Connected C-V2X Energy-Efficient Dynamic Vehicle Routing: System Development and Evaluation (P24-21032)

Hesham Rakha/Virginia Polytechnic Institute

3228

Tuesday, 06:00 p.m. - 07:30 p.m., Convention Center, 102B

Novel Data and Methods for Walking, Cycling, and Scootering

Krista Nordback, UNC Highway Safety Research Center, presiding

Ioannis Tsapakis, Texas A&M Transportation Institute, presiding

Frank Proulx, Frank Proulx Consulting, presiding

Aditi Misra, University of Colorado, Denver, presiding

Sponsored By Standing Committee on Highway Traffic Monitoring, Joint Subcommittee on Bicycle and Pedestrian Data (with AED10, AED20, AEP25, ACH10, and ACH20)

In the last few years nonmotorized traffic research has expanded to include electric assisted bicycles and scooters, both because of their ability to increase active mode choices and their potential safety concerns. In this session we will discuss new data and methodology research encompassing both traditional and new active modes. Come and learn with us about innovative research on pedestrian traffic, e-bicycles, e-scooters, using wi-fi to study campus travel, and the latest methods for annualizing nonmotorized traffic from short duration counts.

Imputing Time Series Pedestrian Volume Data with Consideration of Epidemiological-Environmental Variables (TRBAM-24-00202)

Amir Rafe/Utah State University, Patrick Singleton/Utah State University

The Future of E-Bikes on Public Lands: A Human Factors Field Study at Minute Man National Historical Park (TRBAM-24-04310)

Jonah Chiarenza/OST-R/Volpe Center, Ian Berg/OST-R/Volpe Center, Kirby Ledvina/OST-R/Volpe Center, Michael Rodriguez/OST-R/Volpe Center, Jared Young/OST-R/Volpe Center

Exploring University Campus Human Mobility Using Large-Scale Wi-Fi Log Data: Methodology and Case Study (TRBAM-24-00533)

Yuqiu Yuan/University of North Carolina, Charlotte, Lei Zhu/University of North Carolina, Charlotte, Zachery Slocum/University of North Carolina, Charlotte, Wenwu Tang/University of North Carolina, Charlotte

(continued)

Investigating Idle Time Patterns of E-Scooters: A Survival Analysis Approach to Understand Availability (TRBAM-24-04011)

Sajjad Karimi/University of Louisville, Robert Kluger/University of Louisville, Abolfazl Karimpour/University of Louisville

Estimating Annual Average Daily Non-Motorized Traffic: A Methodological Approach for Short-Duration Counts (TRBAM-24-04646)

Zihang Wei/AtkinsRéalis, Anik Das/AtkinsRéalis, Ioannis Tsapakis/AtkinsRéalis, Shawn Turner/AtkinsRéalis

3229



Tuesday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Vehicle-Highway Automation, Part 2 (Part 1, Session 3162; Part 3, Session 4028)

Hao Liu, University of California, Berkeley, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation

Dynamic Intersection Virtual Channelization Control Based on Connected and Automated Vehicle Technology (TRBAM-24-03182) - B511

Kangyu Zhang/Beijing University of Technology, Lishan Sun/Beijing University of Technology, Dewen Kong/Beijing University of Technology, Yan Xu/Beijing University of Technology, Miao Wang/Beijing University of Technology, Fei Meng/Beijing University of Technology, Yina Liu/Beijing University of Technology

Coordinating Multilane Platoons of Mixed CHVs and Connected and Automated Vehicles for Freeway Work Zone Lane Closure (TRBAM-24-03378) - B512

Jiechu Lu/Guangdong University of Technology, Hui Fu/Guangdong University of Technology, Saifei Chen/Guangdong University of Technology, Wanling Huang/Guangdong University of Technology, Xinjun Lai/Guangdong University of Technology

Dynamic Control in a Freeway Weaving Section Under Mixed Traffic and Platoon Formation: A Reinforcement Learning Approach (TRBAM-24-03480) - B634

Anastasios Bithas/National Technical University of Athens (NTUA), Emmanouil Kampitakis/National Technical University of Athens (NTUA), Eleni Vlahogianni/National Technical University of Athens (NTUA), Konstantinos Katzilieris/National Technical University of Athens (NTUA)

Decentralized, Multi-Vehicle Motion Planning for Platoon Formation in Mixed Traffic Using Monte Carlo Tree Search (TRBAM-24-03662) - B513

Chenglin Liu/Chang'an University, Zhigang Xu/Chang'an University, Zhiguang Liu/Chang'an University, Xiaopeng (Shaw) Li/Chang'an University

Threshold Analysis of Static and Dynamic Occlusion in Urban Areas: A Connected Automated Vehicle Perspective (TRBAM-24-03746) - B635

Mathias Pechinger/TU Munich, Tanja Niels/TU Munich, Klaus Bogenberger/TU Munich

MetaFollower: Adaptable Personalized Autonomous Car Following (TRBAM-24-03805) - B592

Xianda Chen/Hong Kong University, Guangzhou, Kehua Chen/Hong Kong University, Guangzhou, Meixin Zhu/Hong Kong University, Guangzhou, Xuesong Wang/Hong Kong University, Guangzhou, Yinhai Wang/Hong Kong University, Guangzhou, Hao Yang/Hong Kong University, Guangzhou

Arrival Time Prediction for Autonomous Shuttle Services in the Real World: Evidence from Five Cities (TRBAM-24-03810) - B615

Carolin Schmidt/Danmarks Tekniske Universitet, Mathias Tygesen/Danmarks Tekniske Universitet, Filipe Rodrigues/Danmarks Tekniske Universitet

Dynamic Balancing-Charging Management for Shared Autonomous Electric Vehicle Systems: A Two-Stage, Learning-Based Approach (TRBAM-24-03827) - B514

Xiaolei Zhu/National University of Singapore, Xindi Tang/National University of Singapore, Jiaohong Xie/National University of Singapore, Yang Liu/National University of Singapore

BEVGPT: Generative Pre-Trained Transformer for Autonomous Driving Prediction, Decision Making, and Planning (TRBAM-24-03835) - B593

Pengqin Wang/Hong Kong University, Guangzhou, Meixin Zhu/Hong Kong University, Guangzhou, Hongliang Lu/Hong Kong University, Guangzhou, Hui Zhong/Hong Kong University, Guangzhou, Xianda Chen/Hong Kong University, Guangzhou, Shaojie Shen/Hong Kong University, Guangzhou, Xuesong Wang/Hong Kong University, Guangzhou, Yinhai Wang/Hong Kong University, Guangzhou

Who Initiates the Automated Vehicle Disengagement?: Drivers or Automated Driving Systems (TRBAM-24-03964) - B550

Nastaran Moradloo/University of Tennessee, Iman Mahdinia/University of Tennessee, Asad Khattak/University of Tennessee

(continued)

RS-Long Short-Term Memory Car-Following Model for Autonomous Vehicles in Mixed Traffic (TRBAM-24-04035) - B520

Tanmay Das/North Carolina State University, M. Samandar/North Carolina State University, Dan Harris/North Carolina State University, Nagui Roupail/North Carolina State University, Billy Williams/North Carolina State University

Knowledge-Informed, Model-Based Reinforcement Learning for Smoothing Traffic Flow with Connected and Automated Vehicles (TRBAM-24-04256) - B521

Zihao Sheng/University of Wisconsin, Madison, Zilin Huang/University of Wisconsin, Madison, Sikai Chen/University of Wisconsin, Madison

A Study of Implementing Accelerated Testing Protocols for Connected and Automated Vehicles in a Hybrid Physical-Digital World (TRBAM-24-04351) - B542

Joe Beck/University of Tennessee, Subhadeep Chakraborty/University of Tennessee

Data-Driven Modeling of Autonomous Vehicle Car-Following Considering Mixed Traffic: A Comparison of Different Long Short-Term Based Deep Neural Network Models (TRBAM-24-04405) - B510

Tanmay Das/North Carolina State University, M. Samandar/North Carolina State University, Dan Harris/North Carolina State University, Nagui Roupail/North Carolina State University, Billy Williams/North Carolina State University

Safety Evaluation for Lane-Changing Behaviors of Autonomous Vehicles Based on Vehicle-to-Vehicle Communication Technology (TRBAM-24-04908) - B522

Euntak Lee/Yonsei University, Jimin Chae/Yonsei University, Inho Jeong/Yonsei University, Youngjun Kim/Yonsei University, Bongsoo Son/Yonsei University

Digitized Traffic Rules Guided Trajectory Planning: A Case Study of the Right-Turn Scenario (TRBAM-24-04967) - B605

Ruolin Shi/Tongji University, Xuesong Wang/Tongji University, Meixin Zhu/Tongji University, Andrew Morris/Tongji University, Dingming Qin/Tongji University

Analyzing Driving Behavior of Automated Vehicles and Human Drivers Using Data from Field Experiments (TRBAM-24-05015) - B523

Pei Li/University of Wisconsin, Madison, Junwei You/University of Wisconsin, Madison, Steven Parker/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison

PMI Transformer: Vehicle Intent and Trajectory Prediction in Parking Scenarios via Long-Term Memory and Multi-Scale Interactions (TRBAM-24-05041) - B540

Andi Song/Tongji University, Cong Zhao/Tongji University, Jindong Wang/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

Safety, Liability, and Insurance Markets in the Age of Automated Driving (TRBAM-24-05084) - B524

Daniel Vignon/New York University, Yafeng Yin/New York University

Quantifying the Traffic Impact of Autonomous Shuttles on Signalized Arterials: A Microsimulation Study (TRBAM-24-05100) - B532

Agustin Guerra/University of Florida, Renan Favero/University of Florida, Lily Elfeteriadou/University of Florida

Quantifying the Effect of a Mix of Varying Levels of Automated Vehicles on Operational Performance of Urban Freeways (TRBAM-24-05101) - B533

Hardik Gajera/University of North Carolina, Charlotte, Srinivas Pulugurtha/University of North Carolina, Charlotte, Ninad Gore/University of North Carolina, Charlotte, Amirhossein Ghasemi/University of North Carolina, Charlotte, Sarvani Duvvuri/University of North Carolina, Charlotte, Swapneel Kodupuganti/University of North Carolina, Charlotte

Systematic Assessment of Roadside Perception Systems for Automated Vehicles: Insights from Field Testing (TRBAM-24-05102) - B534

Rusheng Zhang/University of Michigan, Depu Meng/University of Michigan, Tinghan Wang/University of Michigan, Tai Karir/University of Michigan, Sean Shen/University of Michigan, Michael Maile/University of Michigan, Michael Shulman/University of Michigan, Henry Liu/University of Michigan

Analyzing the Effects of Autonomous Vehicles on Human Driving Behavior in Virtual Reality-Enabled Mixed Traffic Simulation Based on Causal Inference (TRBAM-24-05508) - B543

Xuan Wei/Beihang University, Zhiyong Cui/Beihang University, Xiao (Luke) Wen/Beihang University, Shuyi Yin/Beihang University, Yilong Ren/Beihang University, Haiyang Yu/Beihang University

Hierarchical Reinforcement Learning for Scalable Lagrangian Variable Speed Limit in Mixed Autonomy Traffic (TRBAM-24-05935) - B544

Han Wang/University of California, Berkeley, Jonathan Lee/University of California, Berkeley, Zhe Fu/University of California, Berkeley, Sharon Hornstein/University of California, Berkeley, Daniel Urieli/University of California, Berkeley, Maria Laura Delle Monache/University of California, Berkeley

AR-GAN: Generative Adversarial Network-Based Defense Method Against Adversarial Attacks on the Traffic Sign Classification System of Autonomous Vehicles (TRBAM-24-05954) - B551

M. Sabbir Salek/National Center for Transportation Cybersecurity and Resiliency (TraCR), Abdullah Al Mamun/National Center for Transportation Cybersecurity and Resiliency (TraCR), Mashrur Chowdhury/National Center for Transportation Cybersecurity and Resiliency (TraCR)

Safety Aware Predictive Control Neural Network for Connected Automated Vehicle Operations (TRBAM-24-06205) - B552

Handong Yao/University of Georgia, Qianwen Li/University of Georgia

Man vs. Machine: A Closer Look at the Differences Between Human Driver Behavior and Automated Vehicle Decision-Making (TRBAM-24-06373) - B553

Alireza Talebpour/University of Illinois, Urbana-Champaign, Hani Mahmassani/University of Illinois, Urbana-Champaign, Samer Hamdar/University of Illinois, Urbana-Champaign, Chun-Chien Hsiao/University of Illinois, Urbana-Champaign, Dana Monzer/University of Illinois, Urbana-Champaign, Nachuan Li/University of Illinois, Urbana-Champaign, Rami Ammourah/University of Illinois, Urbana-Champaign, Tina Radvand/University of Illinois, Urbana-Champaign, Victor Okoth/University of Illinois, Urbana-Champaign, Yanlin Zhang/University of Illinois, Urbana-Champaign

A Trusted Perception Method for Traffic Signs Attacked Physically (TRBAM-24-03122) - B554

Shize Huang/Tongji University, Qun Yao Tan/Tongji University, Zhaoxin Zhang/Tongji University, Qianhui Fan/Tongji University, Yi Zhang/Tongji University, Xingying Li/Tongji University

Identification of Factors Contributing to Autonomous Vehicle Detection Reliability of Left-Turning Safe Sight Zones at Intersections (TRBAM-24-05103) - B603

Qian Liu/Tongji University, Xuesong Wang/Tongji University, Junyu Huo/Tongji University, Xuefang Zhang/Tongji University

A Game Theoretic Cooperative Driving Framework for Heterogeneous Mixed Traffic Unsignalized Intersection (TRBAM-24-00488) - B620

Shiyu Fang/Tongji University, Jian Sun/Tongji University, Peng Hang/Tongji University

Cooperative Formation Lane-Changing Strategy for Connected Automated Vehicles in Mixed Traffic Flow (TRBAM-24-00610) - B613

Yangsheng Jiang/Southwest Jiaotong University, Li Tan/Southwest Jiaotong University, Guosheng Xiao/Southwest Jiaotong University, Yuqin Ma/Southwest Jiaotong University, Zhihong Yao/Southwest Jiaotong University

Teaching Autonomous Vehicles to Express Interaction Intent During Unprotected Left Turns: A Human-Driving-Prior-Based Trajectory Planning Approach (TRBAM-24-00964) - B621

Jiaqi Liu/Tongji University, Xiao Qi/Tongji University, Ying Ni/Tongji University, Jian Sun/Tongji University, Peng Hang/Tongji University

Multi-Agent Deep Reinforcement Learning for Multi-Lane Freeways Differential Variable Speed Limit Control in Mixed Traffic Environments (TRBAM-24-00418) - B562

Lei Han/Tongji University, Lun Zhang/Tongji University, Weian Guo/Tongji University

Longitudinal Control of Automated Vehicles: A Novel Approach by Combining Deep Reinforcement Learning and Intelligent Driver Model (TRBAM-24-00467) - B563

Linhan Bai/Southwest Jiaotong University, Fangfang Zheng/Southwest Jiaotong University, Kangning Hou/Southwest Jiaotong University, Xiaobo Liu/Southwest Jiaotong University, Liang Lu/Southwest Jiaotong University

Global Navigation Sattelite System/Inertial Measurement Unit/LiDAR Fusion for Vehicle Localization Within a Consensus Framework (TRBAM-24-00857) - B502

Letian Gao/University of California, Los Angeles, Xin Xia/University of California, Los Angeles, Zhaoliang Zhang/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Automated Pedestrian Shuttle Service for Safety Crossing at Unsignalized Intersections: A Space-Time Network Modeling Approach (TRBAM-24-01211) - B624

Haoran Jiang/Southwest Jiaotong University, Zhihong Yao/Southwest Jiaotong University, Yongxiang Zhang/Southwest Jiaotong University, Yangsheng Jiang/Southwest Jiaotong University

Adaptive Vehicle Trajectory Planning Framework with Dynamic Mode Switching (TRBAM-24-01255) - B600

Haozhan Ma/Southeast University, Bocheng An/Southeast University, Can Wang/Southeast University, Chen Qian/Southeast University, Linheng Li/Southeast University, Xu Qu/Southeast University, Bin Ran/Southeast University, Haozhan Ma/Southeast University

CoBEVT: Cooperative Bird's Eye View Semantic Segmentation with Sparse Transformers (TRBAM-24-01540) - B503

Runsheng Xu/University of California, Los Angeles, Zhengzhong Tu/University of California, Los Angeles, Hao Xiang/University of California, Los Angeles, Bolei Zhou/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

(continued)

Joint Optimization of Management Strategy and the Number of Dedicated Lanes of Connected Automated Vehicles on Highways (TRBAM-24-02127) - B614

Zhihong Yao/Southwest Jiaotong University, Le Li/Southwest Jiaotong University, Yi Wang/Southwest Jiaotong University, Yunxia Wu/Southwest Jiaotong University

Assessing Public Road Tests of Automated Lane Keeping Systems Under United Nations Regulation No. 157 (TRBAM-24-02144) - B564

Sandor Vass/European Commission Joint Research Centre, Riccardo Donà/European Commission Joint Research Centre, Konstantinos Mattas/European Commission Joint Research Centre, András Rövid/European Commission Joint Research Centre, Zsolt Vincze/European Commission Joint Research Centre, Hans-Peter Schöner/European Commission Joint Research Centre, Mihály Csonthó/European Commission Joint Research Centre, Marton Pataki/European Commission Joint Research Centre, Maria Cristina Galassi/European Commission Joint Research Centre, Viktor Tihanyi/European Commission Joint Research Centre, Zsolt Szalay/European Commission Joint Research Centre, Biagio Ciuffo/European Commission Joint Research Centre

Automated Driving Systems Data Acquisition and Processing Platform (TRBAM-24-02204) - B500

Xin Xia/University of California, Los Angeles, Zonglin Meng/University of California, Los Angeles, Xu Han/University of California, Los Angeles, Hanzhao Li/University of California, Los Angeles, Takahiro Tsukiji/University of California, Los Angeles, Runsheng Xu/University of California, Los Angeles, Zhaoliang Zheng/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Strategic and Tactical Decision Making for Cooperative Vehicle Platooning with Organized Behavior on Multi-Lane Highways: A Comprehensive Sequential Testing Pipeline Using the Robot Operating System and CARMA Platform (TRBAM-24-02249) - B501

Xu Han/University of California, Los Angeles, Xin Xia/University of California, Los Angeles, Runsheng Xu/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Regulation-Aware Path Planning Framework for Automated Driving Systems (TRBAM-24-02326) - B504

Xu Han/University of Cincinnati, Matt Huffman/University of Cincinnati, Xin Xia/University of Cincinnati, Jiaqi Ma/University of Cincinnati

A Distributed Collaborative Control Framework of Connected Automated Vehicles Based on Control Delay Compensation Strategy (TRBAM-24-02765) - B582

Yujia Chen/Southeast University, Keyun Lv/Southeast University, Changyin Dong/Southeast University, Hao Wang/Southeast University, Ye Li/Southeast University

Stability Analysis of the Cooperative Adaptive Cruise Control Platoon Considering a Rate-Free, Time-Varying Communication Delay and Uncertainties (TRBAM-24-02822) - B572

Tiancheng Ruan/Southeast University, Ruan Tiancheng/Southeast University, Hao Wang/Southeast University, Xiaopeng Li/Southeast University

Critical Trajectory Point Planning for Connected and Autonomous Vehicles at Highway On-Ramps Under Mixed Traffic Environment (TRBAM-24-02865) - B632

Yuehai Hu/Tongji University, Zixuan Chen/Tongji University, Wanqing Ma/Tongji University, Chunhui Yu/Tongji University

A Survey on Urban Traffic Control Under Mixed Traffic Environment with Connected Automated Vehicles (TRBAM-24-03057) - B631

Jinjue Li/Tongji University, Chunhui Yu/Tongji University, Zilin Shen/Tongji University, Zicheng Su/Tongji University, Wanqing Ma/Tongji University

A Internal Stochastic Car-Following Model: Stochasticity Analysis in Connected and Automated Vehicle Environments (TRBAM-24-03118) - B612

Peipei Mao/Southeast University, Shuo Li/Southeast University, Xinkai Ji/Southeast University, Xu Qu/Southeast University, Bin Ran/Southeast University

Exploring Emotional Response During Autonomous Vehicle Rides Using EEG Technology (TRBAM-24-03332) - B601

Fredrik Monsuur/University College London, Maria Kamargianni/University College London, Shulei Zhang/University College London, Rebecca Posner/University College London, Emmanouil Chaniotakis/University College London

Automated Vehicle Decision Making Based on Reinforcement Learning and Responsibility-Sensitive Safety (TRBAM-24-03891) - B604

Caiyang Ye/Tongji University, Xuesong Wang/Tongji University, Meixin Zhu/Tongji University, Andrew Morris/Tongji University

Readiness of Freeway Design and Condition for Lane-Detection Performance of LiDAR-Based Automated Vehicles: A Field Test Study (TRBAM-24-03983) - B602

Xinchen Ye/Tongji University, Xuesong Wang/Tongji University, Salvatore Cafiso/Tongji University, Alfredo Garcia/Tongji University

(continued)

Modeling Social Interaction Behaviors and Measuring Driving Sociality in Strong Interactive Scenarios (TRBAM-24-04894) - B610

Yiru Liu/Tongji University, Xiaocong Zhao/Tongji University, Ye Tian/Tongji University, Jian Sun/Tongji University

The Impact of an Autonomous Shuttle Service on Urban Road Capacity: Experiments by Microscopic Traffic Simulation (TRBAM-24-04950) - B663

Sudipta Roy/University of Central Florida, Bat-hen Nahmias-Biran/University of Central Florida, Samiul Hasan/University of Central Florida, Sudipta Roy/University of Central Florida

A Delay-Aware Cooperative Perception Framework for Autonomous Vehicles Based on Driving Risk Quantification (TRBAM-24-05107) - B541

Delong Ding/Tongji University, Cong Zhao/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

A Parallel Deep Reinforcement Learning Framework for Autonomous Driving with Policy Imitation and Ensemble (TRBAM-24-05151) - B530

Jing Chen/Tongji University, Cong Zhao/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

Accelerated Fault Injection Testing of Highly Automated Vehicles Based on Knowledge Augmented Dynamic Bayesian Network (TRBAM-24-05296) - B611

Ruoxi Kong/Tongji University, Yuewen Mei/Tongji University, Ye Tian/Tongji University, Jian Sun/Tongji University, He Zhang/Tongji University

A Game-Theoretical Integrated Longitudinal and Lateral Controller for Autonomous Vehicles (TRBAM-24-05467) - B633

Ziye Qin/Southwest Jiaotong University, Lei Yang/Southwest Jiaotong University, Ang Ji/Southwest Jiaotong University, Peng Hao/Southwest Jiaotong University, Guoyuan Wu/Southwest Jiaotong University, Zhanbo Sun/Southwest Jiaotong University

Rapid Testing and Evaluation of Deep Reinforcement Learning-Based Decision Making Algorithm Failures for Autonomous Driving (TRBAM-24-05504) - B531

Zhongke Xu/Tongji University, Cong Zhao/Tongji University, Yuxiong Ji/Tongji University, Kun Chen/Tongji University, Yuchuan Du/Tongji University

Analyzing the Impacts of Connected and Autonomous Vehicles on Traffic Operation and Safety at Cloverleaf Interchanges (TRBAM-24-05905) - B653

Nischal Khadka/Louisiana State University, Hany Hassan/Louisiana State University

Distributed-Centralized Planning and Control for Cooperation of Connected Automated Vehicles in Mixed Traffic (TRBAM-24-06431) - B662

Xiong Xiong/Hong Kong University, Huan Yu/Hong Kong University

Parameter Privacy-Preserving Platooning Control for Mixed-Autonomy Traffic (TRBAM-24-06446) - B652

Jingyuan Zhou/National University of Singapore, Kaidi Yang/National University of Singapore

A Novel AVI Sensor Location Model for Individual Vehicle Path Reconstruction on Urban Road Networks (TRBAM-24-06478) - B606

Qiushan Zhang/Tongji University, Yumin Cao/Tongji University, Hong Zhu/Tongji University, Keshuang Tang/Tongji University

Enhanced Transportation Performance Evaluation and Risk Analysis Using Connected Vehicle Data: A Corridor Trace Approach (TRBAM-24-00894) - B651

Cody Pennetti/University of Virginia, Megan Marcellin/University of Virginia, Travis Pennetti/University of Virginia, Sreehari KottoorMadam/University of Virginia, Jungwook Jun/University of Virginia, James Lambert/University of Virginia

Demographic Information Inference from Passively Collected Data (TRBAM-24-02676) - B650

Yiran Zhang/University of Washington, Xuegang Ban/University of Washington

The Trip Characteristics of a Pilot Autonomous Vehicle Rider Program: Revealing Late Night Service Needs and Desired Increases in Service Quality, Reliability and Safety (TRBAM-24-06316) - B560

William Riggs/University of San Francisco

3230



Tuesday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Traffic Simulation

Sanhita Lahiri, Virginia Department of Transportation, presiding

Mohammed Hadi, Florida International University, presiding

Sponsored By Standing Committee on Traffic Simulation

Efficient and Robust Freeway Traffic State Estimation Under Oblique Grid Using Vehicle Trajectory Data (TRBAM-24-00094) - B693

Yang He/Southeast University, Chengchuan An/Southeast University, Yuheng Jia/Southeast University, Jiachao Liu/Southeast University, Zhenbo Lu/Southeast University, Jingxin Xia/Southeast University

LWR and Shockwave Analysis Failures Under a Concave Fundamental Diagram and Unexpected Induced Disturbances (TRBAM-24-00154) - B694

Benjamin Coifman/Ohio State University, Balaji Ponnu/Ohio State University, Paul El Asmar/Ohio State University
Interactions of Artificial Driving Risk Potential Field Model for Highway Driving: The Influence of Vehicle Dynamics and Vehicle Dimensions (TRBAM-24-00421) - B629

Ru Ling/Southeast University, Meng Li/Southeast University, Zhibin Li/Southeast University

Traffic Network Link Flow Imputation Based on Flow Regularized Matrix Factorization (TRBAM-24-00459) - B642

Jian Yuan/Tongji University, Xudong Wang/Tongji University, Lijun Sun/Tongji University, Mengying Lei/Tongji University, Wanqing Ma/Tongji University, Kun An/Tongji University

Stochastic Network Loading of Mixed Autonomy Traffic: A Markovian Finite Capacity Queueing Network Approach (TRBAM-24-00516) - B695

Fang Zhang/Southeast University, Jian Lu/Southeast University, Xiaojian Hu/Southeast University

Real-Time Traffic Flow Uncertainty Quantification: A Seasonal Kernel Density Estimation Approach (TRBAM-24-00622) - B696

Meiye Li/Southeast University, Jianhua Guo/Southeast University, Xiaobin Zhong/Southeast University

Passenger Trip-to-Itinerary Assignment Method Based on Machine Learning and Cross-Feedback Mechanism (TRBAM-24-00629) - B625

Xu Yan/Southwest Jiaotong University, Evelien Van der Hurk/Southwest Jiaotong University, Filipe Rodrigues/Southwest Jiaotong University, Yongxiang Zhang/Southwest Jiaotong University, Qiyuan Peng/Southwest Jiaotong University

The Impact of Objective Function Formulation on Calibration Efficiency and Parameters Convergence Consistency in Traffic Microsimulation (TRBAM-24-00653) - B680

Ismail Abuamer/Katholieke Universiteit Leuven (KU Leuven), Chris Tampère/Katholieke Universiteit Leuven (KU Leuven)

Travel Demand Estimation Targeting Experience of Ego Vehicles in Large-Scale Networks to Replicate Real-World and Time Speed Data Under Various Operational Conditions (TRBAM-24-00674) - B697

Ehsan Kamjoo/Michigan State University, Ali Zockaie/Michigan State University, Chee Chan/Michigan State University, Archak Mittal/Michigan State University, Ardeshir Fadaei/Michigan State University

An Activity Scheduling and Multi-Agent Micro-Simulation Platform Based on Long-Term Cellular Data and Considering Multi-Mode Transfer (TRBAM-24-00707) - B698

Yudong Guo/Chongqing Institute of transportation planning research institute, Fei Yang/Chongqing Institute of transportation planning research institute, Peng Sun/Chongqing Institute of transportation planning research institute, Lilei Wang/Chongqing Institute of transportation planning research institute, Zhenxing Yao/Chongqing Institute of transportation planning research institute, Tao Zhou/Chongqing Institute of transportation planning research institute

Real-Time Estimation of Origin-Destination Matrices Using a Deep Neural Network for Digital Twins (TRBAM-24-00711) - B648

Donggyu Min/Seoul National University, Hyunsoo Yun/Seoul National University, Seung Woo Ham/Seoul National University, Dong-Kyu Kim/Seoul National University

Model Calibration for Microscopic Traffic Simulation Using Drone-Based Vehicle Trajectory Data (TRBAM-24-00804) - B699

Zijin Wang/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Ou Zheng/University of Central Florida, Shengxuan Ding/University of Central Florida

A Two-Stage Allocation Model for Parking Robot Systems Using Cellular Automaton Simulation (TRBAM-24-00979) - B616

Xun-You Ni/East China JiaoTong University, Daniel(Jian) Sun/East China JiaoTong University, Jing Zhao/East China JiaoTong University, Qian Chen/East China JiaoTong University

A Co-Simulation-Based 4D Millimeter-Wave Radar Camera Fusion Testing Method for Highway Roadside Scenerio (TRBAM-24-01233) - B573

Haodong Liu/Southeast University, Peng Zhou/Southeast University, Kai Huang/Southeast University, Zhiyuan Liu/Southeast University

A Novel Parallel Computing Framework for Solving User Equilibrium Problem Based on Alternating Direction Method of Multipliers (TRBAM-24-01302) - B583

Yu Dong/Southeast University, Yicheng Zhang/Southeast University, Honggang Zhang/Southeast University, Zhiyuan Liu/Southeast University

(continued)

An Evaluation Framework for Reliable Population Synthesis in Agent-Based Mobility Simulations

(TRBAM-24-01730) - B681

Federico BIGI/University of Luxembourg, Francesco VITI/University of Luxembourg, Taha Rashidi/University of Luxembourg

Non-Equilibrium Traffic Model Based on Risk Allostasis Theory: Development and Analytical Properties

(TRBAM-24-01745) - B647

Saeed Mohammadian/University of Queensland, Saint Lucia, Zuduo Zheng/University of Queensland, Saint Lucia, Md. Mazharul Haque/University of Queensland, Saint Lucia, Ashish Bhaskar/University of Queensland, Saint Lucia

Non-Equilibrium Traffic Model Based on Risk Allostasis Theory: New Insight into Complex Empirical Traffic Phenomena (TRBAM-24-01747) - B637

Saeed Mohammadian/University of Queensland, Saint Lucia, Zuduo Zheng/University of Queensland, Saint Lucia, Md. Mazharul Haque/University of Queensland, Saint Lucia, Ashish Bhaskar/University of Queensland, Saint Lucia

Capacity Estimation of Basic Segments of Urban Interchanges in Mountainous Regions: A Panel Data Approach (TRBAM-24-01756) - B682

Jin Yang/T.Y.Lin International Engineering Consulting (China) Co., Ltd., Huafeng Gong/T.Y.Lin International Engineering Consulting (China) Co., Ltd., Congxiao Zhao/T.Y.Lin International Engineering Consulting (China) Co., Ltd., Boya Huang/T.Y.Lin International Engineering Consulting (China) Co., Ltd., Beichen Li/T.Y.Lin International Engineering Consulting (China) Co., Ltd.

A Hybrid Ranking and Selection Procedure to Solve Simulation-Based Discrete Network Design Problems (TRBAM-24-01772) - B574

Jinbiao Huo/Southeast University, Churong Chen/Southeast University, Ziyuan Gu/Southeast University, Zhiyuan Liu/Southeast University

Vehicle Trajectory Data-Driven Traffic Signal Control for Incident Affected Adjacent Intersections: Integration of MPC Model (TRBAM-24-01873) - B627

Yin Han/University of Shanghai for Science and Technology, Hao Chen/University of Shanghai for Science and Technology, Jiawen Wang/University of Shanghai for Science and Technology, Jing Zhao/University of Shanghai for Science and Technology

Implementation of a Model Predictive Controller with a Geometric Feature Characterization Heuristic for Safe Connected Autonomous Vehicle Operations at Horizontal Curves (TRBAM-24-01954) - B683

Jose Cazares/Texas A&M University, Ivan Damnjanovic/Texas A&M University

Traffic and Environmental Impacts of Speed Geofencing in an Urban Corridor: A Traffic Microsimulation Analysis (TRBAM-24-02007) - B684

Johan Olstam/VTI: Statens Vag och Transportforskningsinstitut, Rihanna Gebrehiwot/VTI: Statens Vag och Transportforskningsinstitut, Kinjal Bhattacharyya/VTI: Statens Vag och Transportforskningsinstitut, Fredrik Johansson/VTI: Statens Vag och Transportforskningsinstitut

Consensus Control with Incomplete Vehicle Information for Virtual Platoons at Autonomous Intersections (TRBAM-24-02099) - B685

Haiyang Hu/Wuhan University of Technology, Duanfeng Chu/Wuhan University of Technology, Liping Lu/Wuhan University of Technology, Jianhua Yin/Wuhan University of Technology

A Dynamic Coordinative Merging Assistant Strategy for Ramp Merging in Mixed Traffic Conditions (TRBAM-24-02193) - B623

Chen Qian/Southeast University, Linheng Li/Southeast University, Xu Qu/Southeast University, Bin Ran/Southeast University

Short-Term, Spatio-Temporal Forecasting of Commuting Origin-Destination Demand During Peak Hours (TRBAM-24-02582) - B686

Yuhuan Li/Imperial College London, South Kensington, Yaping Zhang/Imperial College London, South Kensington, Yuxiang Feng/Imperial College London, South Kensington, Shaowu Cheng/Imperial College London, South Kensington, Lintong Li/Imperial College London, South Kensington, Washington Ochieng/Imperial College London, South Kensington

Multi-Level Traffic Simulation Using Dynamic Simulation Level Assignment for Urban Network (TRBAM-24-02760) - B687

Yeeun Kim/Korea Advanced Institute of Science and Technology (KAIST), Seongjin Choi/Korea Advanced Institute of Science and Technology (KAIST), Sujae Jeon/Korea Advanced Institute of Science and Technology (KAIST), Hwasoo Yeon/Korea Advanced Institute of Science and Technology (KAIST)

The Effects of Heterogeneity in Driving Maneuvers at a Roundabout on Parameter Calibration in Car-Following Models (TRBAM-24-03058) - B638

Junhee Choi/Seoul National University, Yang-Jun Joo/Seoul National University, Dong-Kyu Kim/Seoul National University

Using Deep Neural Networks and Big Data to Predict Microscopic Travel Time at Work Zones (TRBAM-24-03129) - B609

Yeganeh Morshedzadeh/University of British Columbia, Suliman Gargoum/University of British Columbia, Ali Gargoum/University of British Columbia

Optimization of Autonomous Driving Behavior Models Under Mixed Traffic Environments in Urban Networks (TRBAM-24-03132) - B617

Songha Lee/Hanyang University, Nuri Park/Hanyang University, Hojae Kim/Hanyang University, Juneyoung Park/Hanyang University, Minsu Won/Hanyang University

Dynamic Arrival Time Based Collaborative Ramp Merging Strategies of Connected and Automated Vehicles (TRBAM-24-03210) - B654

Xuemei Chen/Beijing Institute of Technology, Jia Wu/Beijing Institute of Technology, Jiahe Liu/Beijing Institute of Technology

A Novel Approach for Traffic State Recognition and Prediction Based on Image Segmentation and Deep Learning (TRBAM-24-03245) - B655

Gao Yacong/Beijing University of Technology, Chenjing Zhou/Beijing University of Technology, Jian Rong/Beijing University of Technology, Yi Wang/Beijing University of Technology, Xin Chang/Beijing University of Technology, Siyang Liu/Beijing University of Technology

Simulation Evaluation of a Large-Scale Implementation of Virtual-Phase Link Based Model Predictive Control (TRBAM-24-03248) - B656

Andalib Shams/Iowa State University, Qichao Wang/Iowa State University, Juliette Ugirumurera/Iowa State University, Joseph Severino/Iowa State University, Wesly Jones/Iowa State University, Jibonananda Sanyal/Iowa State University

Shockwaves Detection Based on Inductive Loop Data: A Microscopic Simulation-Based Analysis (TRBAM-24-03277) - B657

Hassan Abu Saq/University of Southampton Civil and Environmental Engineering: University of Southampton School of Engineering, Ioannis Kaparias/University of Southampton Civil and Environmental Engineering: University of Southampton School of Engineering, Ben Waterson/University of Southampton Civil and Environmental Engineering: University of Southampton School of Engineering

Robust Optimization Model for Isolated and Fixed-Time Signalized Intersections Using Connected Vehicle Trajectory Data (TRBAM-24-03321) - B607

Yue Ding/Tongji University, Chaopeng Tan/Tongji University, Hong Zhu/Tongji University, Keshuang Tang/Tongji University
Modeling and Investigating the Interactions Between Modular Vehicle Technology and Traffic (TRBAM-24-03365) - B658

Gaby Joe Hannoun/New York University, Abu Dhabi, Monica Menendez/New York University, Abu Dhabi, Hossam M. Abdelghaffar/New York University, Abu Dhabi

Trajectory Reconstruction Using Reinforcement Learning (TRBAM-24-03371) - B690

Nikzad Rezaie/Katholieke Universiteit, Leuven, Mohammad Ali Arman/Katholieke Universiteit, Leuven, Anne van der Heide/Katholieke Universiteit, Leuven, Chris Tampère/Katholieke Universiteit, Leuven

Evaluating Lane-Change Models Utilizing Naturalistic Trajectory Data (TRBAM-24-03449) - B640

Felix Hofinger/Graz University of Technology, Michael Haberl/Graz University of Technology, Simeon Calvert/Graz University of Technology, Hans van Lint/Graz University of Technology, Martin Fellendorf/Graz University of Technology

Perimeter Control for a Single Urban Congested Region: Expert, Pre-Trained Reinforcement Learning Combined with Queue Balancing Optimization (TRBAM-24-03500) - B644

Emmanouil Kampitakis/National Technical University of Athens (NTUA), Eleni Vlahogianni/National Technical University of Athens (NTUA)

Development of a Length-Based, Cell-State Framework Toward the Recreation of Large-Scale Dense Congestion Patterns (TRBAM-24-03530) - B667

Brian Staes/Oregon State University, Haizhong Wang/Oregon State University, Robert Bertini/Oregon State University

Research on Collaborative Optimization Method for Traffic Control and Traffic Assignment Under Carbon-Reducing and Connected Vehicle Conditions (TRBAM-24-03720) - B584

Beier Ba/Southeast University, Xianyue Peng/Southeast University, Jinbiao Huo/Southeast University, Hao Wang/Southeast University

An Optimization-Based, Game-Theoretical Model of Road Pricing with Elastic Demand, Multiple User Classes, Multiple Players, and Endogenized User Equilibrium (TRBAM-24-03752) - B701

Gaurav Malik/Katholieke Universiteit Leuven (KU Leuven), Chris Tampère/Katholieke Universiteit Leuven (KU Leuven)

Exploring Safe Overtaking Behavior Threshold Considering Human Interactions Using Multi-Agent Driving Simulator (TRBAM-24-03761) - B619

Taeho Oh/Southeast University, Inhi Kim/Southeast University, Zhibin Li/Southeast University

(continued)

Impact of Infrastructure-Based Automation of Connected and Automated Vehicles on Freeways

(TRBAM-24-04280) - B646

Mandip Sigdel/University of Cincinnati, Mohamed Ahmed/University of Cincinnati

Safety and Operational Impacts of Varying Market Penetration and Level of Autonomy of Connected and Automated Vehicles on I-80 Freeway Segment (TRBAM-24-04431) - B636

Mandip Sigdel/University of Cincinnati, Mohamed Ahmed/University of Cincinnati

Assessment of the Calibration of Work Zone Simulation Models with the Consideration of Macroscopic and Microscopic Traffic Measures (TRBAM-24-04511) - B649

Samia Akter/Florida International University, Md Mahmud Hasan Mamun/Florida International University, Mohammed Hadi/Florida International University, Andrew Berthume/Florida International University

Improving Effectiveness of the Safety Service Patrol Programs: A Discrete Event-Based Simulation Approach (TRBAM-24-04552) - B665

Junqing Wang/Old Dominion University, Mecit Cetin/Old Dominion University, Hong Yang/Old Dominion University, Kun Xie/Old Dominion University, Guocong Zhai/Old Dominion University, Sherif Ishak/Old Dominion University

State of the Practice of a State Utilization of Traffic Simulation (TRBAM-24-04581) - B639

Md Mahmud Hasan Mamun/Florida International University, Mohammed Hadi/Florida International University

Modeling the Evolution of Traffic Dynamics as an Epidemic Spread Process for Lagrangian Control (TRBAM-24-04595) - B664

Amirhossein Kiani/University of Minnesota, Tianyi Li/University of Minnesota, Raphael Stern/University of Minnesota

Discrete Macroscopic Traffic Flow Model Considering Lane-Changing Behaviors in the Mixed Traffic Environment (TRBAM-24-04713) - B672

Yi Zhang/University of Maryland, College Park, Kaitai Yang/University of Maryland, College Park, Yuanzheng Lei/University of Maryland, College Park, Yaobang Gong/University of Maryland, College Park, Xianfeng Yang/University of Maryland, College Park

Calibrating Traffic Simulation Models with Limited Field Data: A Case Study on the New Jersey Turnpike (TRBAM-24-04746) - B659

Mohammad Bagheri/Ozyegin University, Bekir Bartin/Ozyegin University, Kaan Ozbay/Ozyegin University, Parivash Jamshidi-Ghaleh/Ozyegin University

A Probabilistic Approach for Lane-Based Queue Length Estimation Using Double-Section License Plate Recognition Data (TRBAM-24-04828) - B608

Lyuzhou Luo/Tongji University, Chaopeng Tan/Tongji University, Hao Wu/Tongji University, Hong Zhu/Tongji University, Keshuang Tang/Tongji University

Linking Transport Models Across Time and Distance Scales Using the Platform for Integrated Land Use and Transportation Experiments and Simulation (TRBAM-24-05090) - B673

Haitam Laarabi/Lawrence Berkeley National Laboratory, Zachary Needell/Lawrence Berkeley National Laboratory, Max Gardner/Lawrence Berkeley National Laboratory, Juan Caicedo/Lawrence Berkeley National Laboratory, Rashid Waraich/Lawrence Berkeley National Laboratory, Cristian Poliziani/Lawrence Berkeley National Laboratory, Xiaodan Xu/Lawrence Berkeley National Laboratory, Tom Wenzel/Lawrence Berkeley National Laboratory, C. Anna Spurlock/Lawrence Berkeley National Laboratory

Non-Motorized Vehicle Trajectory Prediction for Autonomous Driving in Emergency Scenarios (TRBAM-24-05141) - B594

Yang Zhou/Tongji University, Xuesong Wang/Tongji University, Bingdong Ji/Tongji University

Market Penetration Rate Optimization for Mobility Benefits of Connected Vehicles: A Bayesian Optimization Approach (TRBAM-24-05543) - B669

Di Sha/New York University, Yu Tang/New York University, Kaan Ozbay/New York University, Jingqin Gao/New York University

Data Quality Assessment Process for Real-Time, Data-Driven Traffic Microsimulation of Smart Corridor (TRBAM-24-05576) - B702

Abhilasha Saroj/AtkinsRealis, Somdut Roy/AtkinsRealis, Angshuman Guin/AtkinsRealis, Michael Hunter/AtkinsRealis
Insights into Multi-Reservoir Traffic Modeling: Outflow NMF and State Estimation with FCD (TRBAM-24-05654) - B674

Omid Mousavizadeh/University of Canterbury, Mehdi Keyvan-Ekbatani/University of Canterbury

Choice Behavior and Diffusion Impact Analysis of Connected and Autonomous Vehicles Travelers with Managed Lanes (TRBAM-24-05765) - B675

Yumeng Lei/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Daqian Wan/Beijing Jiaotong University, Zhenliang Ma/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

(continued)

PIDL-PedFlow: A Physics-Informed Deep Learning Approach for Macroscopic Continuum Pedestrian Flow Modeling (TRBAM-24-05855) - B628
 Eunhan Ka/Purdue University, Jiawei Xue/Purdue University, Satish Ukkusuri/Purdue University

Enhancing Safety in Autonomous Intersection Management Using Local Receding Horizon Planning (TRBAM-24-05885) - B688
 Yingchen Hao/Monash University, Hoam Chung/Monash University, Hai Vu/Monash University

Lightweight Human Observation-Inspired Trajectory Prediction for Autonomous Driving (TRBAM-24-06161) - B689
 Yongkang Li/University of Macau, Haicheng Liao/University of Macau, Shangqian Liu/University of Macau, Zhenning Li/University of Macau, Kai Zhang/University of Macau, Wenyu Li/University of Macau, Shengbo Li/University of Macau, Chengzhong Xu/University of Macau

RealTwin: An Automated Scenario Generation Tool for Microscopic Traffic Simulation (TRBAM-24-06201) - B691
 Guan hao Xu/Oak Ridge National Laboratory, Abhilasha Saroj/Oak Ridge National Laboratory, Yunli Shao/Oak Ridge National Laboratory, Chieh Ross Wang/Oak Ridge National Laboratory

A Comparative Workflow of Microscopic Simulation Software for Consistent Scenario Development (TRBAM-24-06231) - B692
 Abhilasha Saroj/Oak Ridge National Laboratory, Guan hao Xu/Oak Ridge National Laboratory, Yunli Shao/Oak Ridge National Laboratory, Chieh Ross Wang/Oak Ridge National Laboratory

Embedding Dynamic Ride-Sharing Into an Agent-Based Traffic Simulation: A Sensitivity Analysis (TRBAM-24-06233) - B677
 Johannes Müller/TU Munich / AIT Austrian Institute of Technology, Eyad Nassar/TU Munich / AIT Austrian Institute of Technology, Markus Straub/TU Munich / AIT Austrian Institute of Technology, Ana Moreno/TU Munich / AIT Austrian Institute of Technology

Cooperative Control Method of Urban Expressway On-ramp Merging from Low Carbon Perspective (TRBAM-24-06305) - B626
 Yang Shi/Chang'an University, Daniel (Jian) Sun/Chang'an University, Haodu Wu/Chang'an University, Deming Chen/Chang'an University

Modeling Two-dimensional Vehicular Maneuvers at Unsignalized Intersections: A Decentralized Approach (TRBAM-24-06339) - B630
 Saeed Rahmani/Delft University of Technology, Simeon Calvert/Delft University of Technology, Jan Neumann/Delft University of Technology, Bart van Arem/Delft University of Technology

An integrated Macro-Micro approach for merging control in mixed traffic flows (TRBAM-24-06359) - B678
 Weiming Zhao/University of Queensland, Mehmet Yildirimoglu/University of Queensland

Determining Desired Speeds from Vehicle Trajectory Data (TRBAM-24-06371) - B679
 Marvin Baumann/Karlsruhe Institute of Technology (KIT), Claude Weyland/Karlsruhe Institute of Technology (KIT), Jan Ellmers/Karlsruhe Institute of Technology (KIT), Lea Fuchs/Karlsruhe Institute of Technology (KIT), Josephine Grau/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

Performance Evaluation of Ramp Metering under Different Traffic Measurement Scenarios (TRBAM-24-06380) - B641
 Milad Pooladsanj/University of Southern California, Zhexiong Li/University of Southern California, Ketan Savla/University of Southern California, Petros Ioannou/University of Southern California

Analysis, Modeling and Simulation of Connected and Automated Trucks: State-of-the-Art and Identified Gaps (TRBAM-24-06392) - B643
 Yejia Liao/University of California, Riverside, Haishan Liu/University of California, Riverside, Ruili Yao/University of California, Riverside, Guoyuan Wu/University of California, Riverside, Matthew Barth/University of California, Riverside, Zhitong Huang/University of California, Riverside, Osama Osman/University of California, Riverside, Gene McHale/University of California, Riverside

Autonomous Vehicles as a Sensor: Simulating Data Collection Process (TRBAM-24-06422) - B645
 Yunfei Zhang/Technical University of Munich, Mario Ilıc/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

Generating Network-Level Dynamic Traffic Equations Using Symbolic Regression (TRBAM-24-06452) - B618
 Jiawei Xue/Purdue University, Eunhan Ka/Purdue University, Washim Mondal/Purdue University, Satish Ukkusuri/Purdue University

Improving Safety Calibration in Stochastic Traffic Simulation Models for Freeways by Integration of Crash Data (TRBAM-24-06484) - B668
 Chuan Xu/New York University, Di Sha/New York University, Yu Tang/New York University, Fan Zuo/New York University, Jingqin Gao/New York University, Kaan Ozbay/New York University

(continued)

Understanding Driving Behaviour Heterogeneity using Car-following Calibration of Large-Scale Traffic Data (TRBAM-24-06510) - B570

Ankit Chaudhari/Technische Universität Dresden, Martin Treiber/Technische Universität Dresden, Ostap Okhrin/Technische Universität Dresden

3231



Tuesday, 06:00 p.m. - 07:30 p.m., Convention Center, Hall A

Analytical Methods of Safety Performance

Derek Troyer, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Safety Performance and Analysis

Short-Term Safety Performance Functions by Random Parameters Negative Binomial-Lindley Model for Part-Time Shoulder Use (TRBAM-24-00033) - B725

Tarek Hasan/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida

Estimation of Crash Type Frequency Accounting for Misclassification in Crash Data (TRBAM-24-00059) - B706

Asif Mahmud/Kittelson & Associates, Inc., Vikash Gayah/Kittelson & Associates, Inc., Rajesh Paleti/Kittelson & Associates, Inc.

Crash Modification Factors for High-Tension Cable Median Barriers: An Empirical Bayes Before-After Study (TRBAM-24-00131) - B707

Vikash Gayah/Pennsylvania State University, University Park, Eric Donnell/Pennsylvania State University, University Park, Hao Liu/Pennsylvania State University, University Park, Abhishek Prajapati/Pennsylvania State University, University Park

Development of an Illumination Data-Collection Tool and Nighttime Crash Severity Prediction Models Using Machine Learning (TRBAM-24-00293) - B784

Raja Daoud/University of Texas, Tyler, Matthew Vechione/University of Texas, Tyler, Okan Gurbuz/University of Texas, Tyler, Prabha Sundaravadivel/University of Texas, Tyler

Identifying the Heterogeneous Effects of Road Characteristics on Taxi-Involved Crash Severity (TRBAM-24-00326) - B710

Jingcai Yu/Southeast University, Tao Feng/Southeast University, Shunchao Wang/Southeast University, Jingfeng Ma/Southeast University, Wenquan Li/Southeast University

Crash Modification Factors for High-Friction Surface Treatment on Horizontal Curves of Two-Lane Highways: A Combined Propensity Scores Matching and Empirical Bayes Before-After Approach (TRBAM-24-00373) - B708

Vikash Gayah/Pennsylvania State University, University Park, Eric Donnell/Pennsylvania State University, University Park, Pengxiang Zhang/Pennsylvania State University, University Park

Mining of the Causes of Major Road Traffic Accidents Based on Association Rules (TRBAM-24-00422) - B785

Shuo Liu/Beijing Jiaotong University, Liujiang Kang/Beijing Jiaotong University

Investigating the Spatial Heterogeneity of Factors Influencing Speeding-Related Crash Severities Using Correlated Random Parameter Order Models with Heterogeneity-in-Means (TRBAM-24-00437) - B712

Renteng Yuan/Southeast University, Shengxuan Ding/Southeast University, zhiheng fang/Southeast University, Xin Gu/Southeast University, Qiaojun Xiang/Southeast University

Application of a Just-in-Time Learning Strategy on Machine Learning-Based Crash Risk Prediction of Elevated Expressway (TRBAM-24-00465) - B709

Xiao-chi MA/Southeast University, Jian Lu/Southeast University

Analysis of Traffic Safety Information Transmission Law of Slope Curve Alignment Based on the Vector Autoregressive Model (TRBAM-24-00476) - B713

Jinxu Fu/Beijing University of Technology, Peng Cai/Beijing University of Technology, Zhiqing Zhang/Beijing University of Technology, Di Xu/Beijing University of Technology, Qiang Fu/Beijing University of Technology

Copula Method Application for the Evaluation of Road Users' Interactions Severity (TRBAM-24-00485) - B714

Zhankun Chen/Lund University, Carmelo DAgostino/Lund University

An Efficient Optimization Framework for Estimating Crash Data Count Models: Addressing Complexity, Heterogeneity, and Multiple Objectives (TRBAM-24-00935) - B715

Zeke Ahern/Queensland University of Technology, Mohammadali Shirazi/Queensland University of Technology, Paul Corry/Queensland University of Technology, Alexander Paz/Queensland University of Technology

Analysis of What Factors Other Than Speed Limits Cause Drivers to Slow Down (TRBAM-24-01448) - B716

Junghan Baek/Kyonggi University, Taekwan Yoon/Kyonggi University, Jooyong Lee/Kyonggi University

(continued)

Identification the Causes of Spatial Heterogeneity in Traffic Accident Using Post-Analysis: Developing Accident Prediction Models Through Segment-Based Spatial Analysis (TRBAM-24-01516) - B717

Uibeom Chun/University of Seoul, Soobeom Lee/University of Seoul, Shin Hyoung Park/University of Seoul, Joonbum Lim/University of Seoul

Does r Largest Order Statistics Approach Improve Conflict-Based Safety Analysis?: A Bayesian Hierarchical Extreme Value Model (TRBAM-24-01595) - B718

Chuanyun Fu/Harbin Institute of Technology, Tarek Sayed/Harbin Institute of Technology

Mapping Location-Based Driving Volatility and Road Safety: A Study Using Large-Scale Crowdsourced Vehicle Movement Data (TRBAM-24-01642) - B720

Rongshen Zhao/University of Alabama, Jun Liu/University of Alabama, Alexander Hainen/University of Alabama, Asad Khattak/University of Alabama, Steven Jones/University of Alabama

Digitalized Vehicle, Maneuver-Based, Real-Time Crash Risk Prediction Using a Multi-Stage Machine Learning Approach (TRBAM-24-01789) - B722

Nuri Park/Hanyang University, Juneyoung Park/Hanyang University, Ling Wang/Hanyang University

Modeling Urban Traffic Crash Causation Considering Spatio-Temporal Instability in Big Cities (TRBAM-24-01795) - B723

Pengfei CUI/Beijing Jiaotong University, Manli YANG/Beijing Jiaotong University, Zhengqi HUO/Beijing Jiaotong University, Xiaobao YANG/Beijing Jiaotong University, Mohamed Abdel-Aty/Beijing Jiaotong University

Classifying Imbalanced Crash Typing Data Using BERT and RoBERTa (TRBAM-24-01933) - B703

Amir Hossein Oliaae/Texas State University, Subasish Das/Texas State University, Minh Le/Texas State University

An Improved Car-Following Model for Signalized Intersections Based on Driving Risk Field (TRBAM-24-01964) - B726

Siyu Duan/Southeast University, Yueru Xu/Southeast University, Yunyang Gu/Southeast University, Xiaomeng Shi/Southeast University, Zhirui Ye/Southeast University, Yang Liu/Southeast University

Vehicle Group-Based Crash Risk Formation and Propagation Analysis for Expressways (TRBAM-24-01982) - B724

Tianheng Zhu/Purdue University, Ling Wang/Purdue University, Yiheng Feng/Purdue University, Wanjing Ma/Purdue University, Mohamed Abdel-Aty/Purdue University

Discovering Causal Structure of Influential Factors for Improving Heterogeneous Crash Modeling (TRBAM-24-02044) - B733

Xiaoxi Liang/Southeast University, Shuang Li/Southeast University, Jieyu Cao/Southeast University, Xiucheng Guo/Southeast University, Wei Ma/Southeast University, Ziyuan Pu/Southeast University

A New Spatio-Temporal, Causal, Inference-Based, Convolutional Neural Network Model for Short-Term Crash Prediction (TRBAM-24-02111) - B704

Bowen Cai/Imperial College London, Léah Camarcat/Imperial College London, Mohammed Quddus/Imperial College London

Dynamic Driving Risk Assessment for Mountainous Two-Lane Roads Using Driving Risk Field Model (TRBAM-24-02119) - B705

Wenwen Qin/Yunnan University, Huan Li/Yunnan University, Xiaofeng Ji/Yunnan University, Jinjing Gu/Yunnan University

Macro-Micro Fusion in Traffic Safety: Severity Prediction and Exploration of Behavior-Cause Relationships in Accidents (TRBAM-24-02164) - B727

Yichang Shao/Southeast University, Yuhan Zhang/Southeast University, Liyang Hu/Southeast University, Xiaomeng Shi/Southeast University, Zhirui Ye/Southeast University

Rebalancing Traffic Crash Data Based on Generative Adversarial Networks for Crash Severity Modeling (TRBAM-24-02238) - B734

Chen Junlan/Southeast University, Xiao (Luke) Wen/Southeast University, Nan Zheng/Southeast University, Xiucheng Guo/Southeast University, Hongliang Ding/Southeast University, Ziyuan Pu/Southeast University

A Comprehensive Safety Risk Sensing Method for Intersections Utilizing Vehicle Outline Trajectory Data (TRBAM-24-02256) - B735

Zhonghua Wei/Beijing University of Technology, Shi hao Wang/Beijing University of Technology, Yunxuan Li/Beijing University of Technology, Houqiang Ma/Beijing University of Technology, Mingqian Wang/Beijing University of Technology, Jingxuan Peng/Beijing University of Technology

Identification and Analysis of Crash Hotspots and Temporal Shifts Using Kernel Density Estimation, Getis-Ord Gi, and Spatial Autocorrelation: A Case Study on N1 in Bangladesh (TRBAM-24-02280) - B736

Prabal Chandra Bhowmik/Bangladesh University of Engineering and Technology, Md Asif Raihan/Bangladesh University of Engineering and Technology, Md. Shamsul Hoque/Bangladesh University of Engineering and Technology

Crash Prediction on Horizontal Curves: Review and Model Performance Comparison (TRBAM-24-02292) - B737
 Zhongyu Yang/Georgia Institute of Technology, Pingzhou (Lucas) Yu/Georgia Institute of Technology, Ronit Shah/Georgia Institute of Technology, Ron Knezevich/Georgia Institute of Technology, Yi-Chang Tsai/Georgia Institute of Technology

Data Linkage and Text Mining to Estimate Occupational Crashes for Small and Medium Size Vehicles (TRBAM-24-02382) - B740
 Caitlin Northcutt/University of Kentucky, Nikiforos Stamatiadis/University of Kentucky, Tony Fields/University of Kentucky, Reginald Souleyrette/University of Kentucky

Investigation of Run-Off-the-Road Crashes Involving Distracted Drivers in New Jersey: A Utilization of Machine Learning Models and SHAP Analysis (TRBAM-24-02420) - B738
 Ahmed Hasan/Rowan University, Mohammad Jalayer/Rowan University, Subasish Das/Rowan University

A Systematic Review of Machine Learning Methods for Traffic Crash Modeling (TRBAM-24-02556) - B730
 Yang Li/University of Wisconsin, Milwaukee, Xiao Qin/University of Wisconsin, Milwaukee, Md Sayed/University of Wisconsin, Milwaukee, Md Hossain/University of Wisconsin, Milwaukee, Mohammad Amer/University of Wisconsin, Milwaukee

Investigating the Severity of Curve-Related Roadway Departure Crashes: The Role of Driver Distraction, Automation Levels, and Environmental Conditions (TRBAM-24-02571) - B739
 Omar Al-Sheikh/Rowan University, Mohammad Jalayer/Rowan University

Further Exploration of the Full Bayes Markov Chain Monte Carlo Approach for Capturing the Nonlinear Safety Effects of Roadway Attributes in Cross-Sectional Regression Studies (TRBAM-24-02579) - B742
 Maryam Hasanpour/Toronto Metropolitan University, Bhagwant Persaud/Toronto Metropolitan University, Alireza Jafari Anarkooli/Toronto Metropolitan University, Robert Mansell/Toronto Metropolitan University, Yongsheng Chen/Toronto Metropolitan University

Leveraging Machine Learning Algorithms to Predict and Analyze Single-Vehicle and Multi-Vehicle Crash Occurrences on Motorways (TRBAM-24-02607) - B728
 Saumik Sakib Bin Masud/University of Kansas, Kirti Mahajan/University of Kansas, Alexandra Kondyli/University of Kansas, Katerina Deliali/University of Kansas, George Yannis/University of Kansas

Structural Equation Modeling: A Viable Tool for Investigating Behavioral Factors Contributing to Road Crashes (TRBAM-24-02691) - B700
 Mahsa Jafari/Ryerson University: Toronto Metropolitan University, Bhagwant Persaud/Ryerson University: Toronto Metropolitan University

Developing Crash Prediction Models for Under-Bridge Strikes by Over-Height Vehicles (TRBAM-24-02701) - B731
 Mohammad Amer/University of Wisconsin, Milwaukee, Yang Li/University of Wisconsin, Milwaukee, Xiao Qin/University of Wisconsin, Milwaukee

Investigation of the Impact of Traffic Operations Variables on Crash Severity on Expressways (TRBAM-24-02731) - B729
 Gustavo Riente de Andrade/Infraplan Consulting LLC, Karla Rodrigues Silva/Infraplan Consulting LLC, Sivaramakrishnan Srinivasan/Infraplan Consulting LLC, Lily Elfeteriadou/Infraplan Consulting LLC

Understanding the Causes of Work Zone Crashes from the Color-Related Perspective: Indiana Crash Data Analysis Using Natural Language Processing (TRBAM-24-02750) - B745
 Hongyue Wu/Purdue University, Xingzhou Guo/Purdue University, Chi Tian/Purdue University, Yunfeng (Cindy) Chen/Purdue University, Jiansong Zhang/Purdue University, James Jenkins/Purdue University

An Integrated Multi-Resolution Framework for Jointly Estimating Crash Type and Crash Severity (TRBAM-24-02911) - B747
 Shahriar Pervaz/University of Central Florida, Tanmoy Bhowmik/University of Central Florida, Naveen Eluru/University of Central Florida

Exploring Contributing Factors to Wrong-Way Driving Crash Severity: Insights from California Highway Patrol Data (TRBAM-24-02948) - B753
 Tonghui Li/Auburn University, Huaguo Zhou/Auburn University, Fangjian Yang/Auburn University, Zijie Zhao/Auburn University

Incident Prediction on Urban Roads Using Data Fusion: The Case of Toronto (TRBAM-24-02953) - B752
 S. Madeh Pirayonesi/Ryerson University

Assessing Non-Motorist Safety in Motor Vehicle Crashes: A Copula-Based Approach to Jointly Estimate Crash Location and Injury Severity (TRBAM-24-03069) - B748
 Robert Marcoux/University of Central Florida, Shahriar Pervaz/University of Central Florida, Naveen Eluru/University of Central Florida

(continued)

Unraveling the Enigma: New Insights into Factors Impacting the Severity of Autonomous Vehicle Crashes from Two Sources of Automated Vehicle Incident Records (TRBAM-24-03250) - B755

Hanlong Fu/Korea Advanced Institute of Science and Technology, Tiantian CHEN/Korea Advanced Institute of Science and Technology, Jinhua Zhao/Korea Advanced Institute of Science and Technology, Xiaowen Fu/Korea Advanced Institute of Science and Technology

STCM-GCN: A Spatio-Temporal Prediction Method for Urban Road Traffic Accidents Under Road Network Constraints (TRBAM-24-03253) - B757

Pengfei Gao/Southwest Jiaotong University, Bin Shuai/Southwest Jiaotong University, Rui Zhang/Southwest Jiaotong University, Bao Wang/Southwest Jiaotong University

Exploring Traffic Conflict Characteristics and Factors in Short Weaving Section of Expressway (TRBAM-24-03281) - B758

Chunqing Liu/Wuhan University of Technology, Mengfei Liu/Wuhan University of Technology, Chao Liu/Wuhan University of Technology, Xinpeng Yao/Wuhan University of Technology, Nengchao Lyu/Wuhan University of Technology

Identifying the Contributory Chains and Patterns of Road Facilities on Bus-Involved Crashes by Using Latent Class Clustering and Association Rules Mining Approaches (TRBAM-24-03319) - B711

Qinghai Lin/Southeast University, Chunting Nie/Southeast University, Shunchao Wang/Southeast University

Modeling the Risk of Single-Vehicle Run-off-Road Crashes on Horizontal Curves Using Connected Vehicle Data (TRBAM-24-03338) - B759

Yuzhi Chen/Southeast University, Chen Wang/Southeast University, Yuanchang Xie/Southeast University

Investigating E-Scooter Injury and Severity Before and After the Restriction Policies in Helsinki, Finland (TRBAM-24-03348) - B760

Samira Dibaj/Aalto University, Shaghayegh Vosough/Aalto University, Khashayar Kazemzadeh/Aalto University, Steve O'Hern/Aalto University, Miloš Mladenović/Aalto University

A Latent Segmentation Based Correlated Random Parameter Generalized Ordered Logit Model to Address Systematic and Unobserved Heterogeneity in Active Traveler Injury Severity Model (TRBAM-24-03374) - B762

Natakorn Phuksuksakul/Queensland University of Technology, Shamsunnahar Yasmin/Queensland University of Technology, Md. Mazharul Haque/Queensland University of Technology

A Spatio-Temporal Deep Learning Approach for Pedestrian Crash Risk Prediction Based on Point of Interest Trip Characteristics and Pedestrian Exposure Intensity (TRBAM-24-03396) - B763

Manze Guo/Beijing Jiaotong University, Bruce Janson/Beijing Jiaotong University, Yongxin Peng/Beijing Jiaotong University

Estimating Collision Risk of Toll Plaza Diverging Area Using Traffic Cross-Sectional Data (TRBAM-24-03408) - B764

Zhizhi Yang/Changsha University of Science and Technology, Lu Xing/Changsha University of Science and Technology, Siqi Zhong/Changsha University of Science and Technology, Yi Fei/Changsha University of Science and Technology, Xi Li/Changsha University of Science and Technology, Kongning Jin/Changsha University of Science and Technology, Ou Zheng/Changsha University of Science and Technology

Assessing the Severity of Conflicts at Unsignalized Intersection Under Heterogeneous Traffic Conditions (TRBAM-24-03504) - B749

Anamika Yadav/Indian Institute of Technology, Jammu, Ankit Kathuria/Indian Institute of Technology, Jammu

Understanding the Impact of Traffic States on Crash Risk in Urban Areas: A Deep Learning Approach (TRBAM-24-03511) - B750

Jiahui Zhao/Chalmers University of Technology, Mingye Zhang/Chalmers University of Technology, Pan Liu/Chalmers University of Technology, Zhibin Li/Chalmers University of Technology

Robust Bayesian Regression for Outlier Mitigation in Traffic Crash Analysis (TRBAM-24-03585) - B772

Ruru Tang/University of Macau, Haicheng Liao/University of Macau, Zhenning Li/University of Macau, Cong Chen/University of Macau, Ziyuan Pu/University of Macau, Kai Zhang/University of Macau, Wenyu Li/University of Macau, Shengbo Li/University of Macau, Chengzhong Xu/University of Macau

Analyzing and Ranking Causes of Road Accidents in Mining Areas: Insights from Road Safety Experts (TRBAM-24-03645) - B773

Saroj Rajwar/National Institute of Technology, Rourkela, Prasanta Bhuyan/National Institute of Technology, Rourkela, Mahabir Panda/National Institute of Technology, Rourkela

Risk Hotspot Identification from Massive Driving Behavior Data Considering Driver Style Classification: A Bayesian Network Approach (TRBAM-24-03693) - B774

Xiao Hu/Tsinghua University, Yu Qi/Tsinghua University, Ke Zhang/Tsinghua University, Huiping Li/Tsinghua University, Meng Li/Tsinghua University

Uncovering Individual Heterogeneity in Pedestrian Crash Severity with Mixed Logit Models (TRBAM-24-03794) - B775

Monire Jafari/Texas State University, Subasish Das/Texas State University, Reuben Tamakloe/Texas State University, Md Nasim Khan/Texas State University, Ahmed Hossain/Texas State University

Introducing rfars, an R Package to Quickly Download and Analyze Crash Data from FARS, GES, and CRSS (TRBAM-24-03833) - B777

Steve Jackson/Toxcel, LLC

Exploration of Traffic Safety of Battery Electric Vehicles: A Case Study to Tesla Vehicle–Involved Crashes in Pennsylvania (TRBAM-24-03876) - B778

Chenhui Liu/Hunan University, Meiling Su/Hunan University, Zhuanzhan Ma/Hunan University, Ke Long/Hunan University, Chaoru Lu/Hunan University

Investigation of a Machine Learning Sampling Method for Estimating the Frequency of Severe and Non-Severe Crashes Using Traffic Conflicts (TRBAM-24-03884) - B744

Maryam Hasanpour/Toronto Metropolitan University, Bhagwant Persaud/Toronto Metropolitan University, Robert Mansell/Toronto Metropolitan University, Craig Milligan/Toronto Metropolitan University

Data Mining Approach to Explore the Contributing Factors to Fatal Wrong-Way Crashes by Local and Non-Local Drivers (TRBAM-24-03969) - B754

Mohammad Reza Abbaszadeh Lima/Auburn University, Md Mahmud Hossain/Auburn University, Huaguo Zhou/Auburn University, Yukun Song/Auburn University

Identifying High-Risk Road Segments of Traffic Accidents Using Street Map Segmentation and Machine Learning (TRBAM-24-03981) - B765

Yi Zhang/Chang'an University, Mouxing Lai/Chang'an University, Jun Li/Chang'an University, Xiwen Yang/Chang'an University, Siyu Shi/Chang'an University, Sai Tian/Chang'an University, Tong Zhu/Chang'an University

An Automated Threshold Selection Framework for Conflict-Based Road Safety Analyses (TRBAM-24-04004) - B767

Reza Aminghafouri/University of Waterloo, Liping Fu/University of Waterloo

Development and Performance of a Deceleration-Based Surrogate Safety Measure for Rear-End Collision Risk (TRBAM-24-04027) - B768

Wenxuan Wang/Chang'an University, Bo Yan/Chang'an University, Ying Yan/Chang'an University, Yanqiu Cheng/Chang'an University

Applying Explainable Machine Learning for Multi-Occupant Crash Survival Time Prediction and Contributing Factor Analysis (TRBAM-24-04078) - B721

A. Latif Patwary/University of Tennessee, Aliza Sharmin/University of Tennessee, Braxton Haynie/University of Tennessee, Darron Lockett/University of Tennessee, Khojandi Anahita/University of Tennessee, Iman Mahdinia/University of Tennessee, Asad Khattak/University of Tennessee

A Comparative Sensitivity Analysis on Intersection Crash Prediction Models by Control Type: Highway Safety Manual Approach (TRBAM-24-04260) - B769

Seyedehsan Dadvar/GENEX Systems, Michael Dimaiuta/GENEX Systems, In-Kyu Lim/GENEX Systems

A Structure and Narrative Data Fusion–Based Machine Learning Approach to Classifying Distracted Driving Crashes (TRBAM-24-04678) - B732

Md Sayed/University of Wisconsin, Milwaukee, Xiao Qin/University of Wisconsin, Milwaukee

A Full Bayesian Analysis of Safety Evaluation Before and After Freeway Acceleration Lane Extension (TRBAM-24-05525) - B770

Yangsong Gu/University of Tennessee, Knoxville, Diyi Liu/University of Tennessee, Knoxville, Lee Han/University of Tennessee, Knoxville

A Bivariate Random Parameters Beta-Generalized Linear Model for Probabilities of Low-Range and High-Range Speeding Behaviors of Taxi Speeders (TRBAM-24-05548) - B719

Yue Zhou/Harbin Institute of Technology, Chuanyun Fu/Harbin Institute of Technology, Xinguo Jiang/Harbin Institute of Technology, Qiong Yu/Harbin Institute of Technology, Haiyue Liu/Harbin Institute of Technology

Risk Estimation for Vehicles and Road Sections Using a Data-Driven Risk Field Model (TRBAM-24-05629) - B779

Dachuan Zuo/New York University, Zilin Bian/New York University, Fan Zuo/New York University, Kaan Ozbay/New York University

Site-Level Statistical Crash Severity Modeling Using Maximum Abbreviated Injury Scale Scores at Signalized Intersections (TRBAM-24-05968) - B780

Michael Shea/University of Utah, Juan Medina/University of Utah

Utilizing Random Forest Regression in Crash Prediction of Rural Two-Lane Highways (TRBAM-24-05760) - B781

Fahmida Rahman/Rowan University, Cidambi Srinivasan/Rowan University, Xu Zhang/Rowan University, Mei Chen/Rowan University

(continued)

**Accumulated Inconsistency: A Novel Measure to Capture Drivers' Expectations in Crash Models
(TRBAM-24-06310) - B782**

Shilpa Nair/Indian Institute of Technology, Palakkad, Bhavathrathan B. K./Indian Institute of Technology, Palakkad

**Spatial Decision-Support System for the Assessment of High-Risk Areas and Contributing Factors in Road
Traffic Accidents: Application to the Northern Road Axis of Crete, Greece (TRBAM-24-00337) - B783**

Orfeas Karountzos/National Technical University of Athens (NTUA), Alexandros Liazos/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA)

4001

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 103A

Driver Cognition, Distraction, and Risk Taking

Erika Gallegos, Colorado State University, presiding

Dengbo He, Hong Kong University of Science and Technology (Guangzhou), presiding

Sponsored By Standing Committee on Human Factors of Vehicles

Risk-Taking Driving Behavior in Interacting with an Autonomous Vehicle at Two-Way, Stop-Controlled Intersections (TRBAM-24-00574)

QianShan Jiang/Central South University, Jaeyoung Lee/Central South University, Farrukh Baig/Central South University

Classification of Driver Cognitive Load in Conditionally Automated Driving: Utilizing ECG-Based Spectrogram with Lightweight Neural Network (TRBAM-24-02717)

Wenxin Shi/Hong Kong University of Science and Technology (Guangzhou), Zuyuan Wang/Hong Kong University of Science and Technology (Guangzhou), Ange Wang/Hong Kong University of Science and Technology (Guangzhou), Dengbo He/Hong Kong University of Science and Technology (Guangzhou)

The Impact of Advanced Vehicle Technologies and Risk Attitudes on Distracted Driving Behaviors (TRBAM-24-04680)

Evelyn Schneider/Massachusetts Institute of Technology, Lisa D'Ambrosio/Massachusetts Institute of Technology, Chaiwoo Lee/Massachusetts Institute of Technology, Joseph Coughlin/Massachusetts Institute of Technology

Visual Attention and Cognition with Driver-Vehicle Interfaces for Passive and Active Connected Vehicles Safety Alert Systems (TRBAM-24-02546)

Adekunle Adebisi/University of Cincinnati, John Ash/University of Cincinnati

Impact of Texting Induced Distraction on Driving Behavior, A Field Operation Test-Based Study. (TRBAM-24-06366)

Ankit Singh/Indian Institute of Technology, Hyderabad, Aman Srivastava/Indian Institute of Technology, Hyderabad, Rajalakshmi Pachamuthu/Indian Institute of Technology, Hyderabad, Digvijay Pawar/Indian Institute of Technology, Hyderabad

4002

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon C

Artificial Intelligence-Aided Traffic Flow Modeling and Control

Hwasoo Yeo, Korea Advanced Institute of Science and Technology (KAIST), presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

This session presents application of AI-aided methods to traffic flow theory and control.

Data-Enabled Predictive Control for Dynamic Traffic Routing (TRBAM-24-02552)

Kai Zhang/Ecole Polytechnique Federale de Lausanne, Kenan Zhang/Ecole Polytechnique Federale de Lausanne, Linbin Huang/Ecole Polytechnique Federale de Lausanne, Giuseppe Belgioioso/Ecole Polytechnique Federale de Lausanne, John Lygeros/Ecole Polytechnique Federale de Lausanne, Florian Dorfler/Ecole Polytechnique Federale de Lausanne

A Physics-Informed, Deep Learning-Based Method for Lane-Change Models (TRBAM-24-05421)

Yan Li/Southeast University, Yu Han/Southeast University

Evaluating the Effectiveness and Transferability of a Data-Driven, Two-Region Perimeter Control Method Using Microsimulation (TRBAM-24-00147)

Dongqin Zhou/Pennsylvania State University, University Park, Vikash Gayah/Pennsylvania State University, University Park

Communication-Aware Reinforcement Learning for Cooperative Adaptive Cruise Control (TRBAM-24-00125)

Sicong Jiang/University of Minnesota, Seongjin Choi/University of Minnesota, Lijun Sun/University of Minnesota

4003

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Salon B

Safety Performance and Analysis Research

Daniel Carter, North Carolina Department of Transportation, presiding
Sponsored By Standing Committee on Safety Performance and Analysis

Applying Artificial Intelligence Techniques to Examine Nighttime Pedestrian Crash Injury Severity at Intersections (TRBAM-24-02301)

Sheikh Usman/The University of Tennessee Knoxville, Asad Khattak/The University of Tennessee Knoxville

Predicting Crash Reduction with Crash Modification Factors for Friction and Macrotecture (TRBAM-24-02443)

Ross McCarthy/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute, Edgar de León Izeppi/Virginia Polytechnic Institute

A Systematic Unified Approach for Addressing Temporal Instability in Road Safety Analysis (TRBAM-24-02850)

Kazi Redwan Shabab/Portland State University, Tanmoy Bhowmik/Portland State University, Naveen Eluru/Portland State University, Mohamed Zaki/Portland State University

Identifying Typical Pre-Crash Scenarios on Mountainous Freeways (TRBAM-24-03759)

Zhigui Chen/Tongji University, Xuesong Wang/Tongji University, Andrew Tarko/Tongji University, Xiaohan Yang/Tongji University, Qian Liu/Tongji University, Huidan Fu/Tongji University, Xiaomeng Wang/Tongji University

4004

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 147A

Leading Research on Applications in Computer Vision

Ziyuan Pu, Southeast University, presiding
Guohui Zhang, Oak Ridge National Laboratory, presiding
Sponsored By Standing Committee on Information Systems and Technology, Standing Committee on Artificial Intelligence and Advanced Computing Applications

Advanced sensing and perception technologies are playing an increasingly prominent role in all aspects of transportation. This session presents leading research in the area of computer vision from the AED30 Information Systems and Technology Committee's annual paper review process.

Teaching Segment-Anything-Model, Domain-Specific Knowledge for Road Crack Segmentation from On-Board Cameras (TRBAM-24-02647)

wei zhou/Southeast University, Hongpu Huang/Southeast University, Jiutian Zhang/Southeast University, Hancheng Zhang/Southeast University, Longhui Wen/Southeast University, Chen Wang/Southeast University

High-Precision Trajectory Extraction Using Advanced Computer Vision from a Multi-Drone Experiment in South Korea (TRBAM-24-04271)

Robert Fonod/EPFL - École Polytechnique Fédérale de Lausanne, Haechan Cho/EPFL - École Polytechnique Fédérale de Lausanne, Hwasoo Yeo/EPFL - École Polytechnique Fédérale de Lausanne, Nikolas Geroliminis/EPFL - École Polytechnique Fédérale de Lausanne

On the Assessment of Thermal Cameras and Their Safety Implications for Pedestrian Protection: A Mixed Empirical and Simulation-Based Characterization (TRBAM-24-03482)

Riccardo Donà/European Commission Joint Research Centre, Konstantinos Mattas/European Commission Joint Research Centre, Sandor Vass/European Commission Joint Research Centre, Biagio Ciuffo/European Commission Joint Research Centre, Guillaume Delubac/European Commission Joint Research Centre, Jessy Matias/European Commission Joint Research Centre, Sebastien Tinnes/European Commission Joint Research Centre

Single Monocular Camera System for Road Visibility Measurement: A Dark Channel Prior-Based Approach (TRBAM-24-06191)

Chenxi Liu/University of Washington, Lingjiu Lu/University of Washington, Yiran Zhang/University of Washington, Hao Yang/University of Washington, Meixin Zhu/University of Washington, Yin Hai Wang/University of Washington

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 152A

Elevating Travel Behavior Research with Cutting-Edge Methods

Abolfazl (Kouros) Mohammadian, University of Illinois, Chicago, presiding

Khandker Habib, University of Toronto, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

In this session, attendees will learn how to apply advanced econometric methods for analyzing various types of data collected in various ways and means. Data collected through travel surveys, location tracking devices, etc., are necessary for empirical investigations. The session will showcase five different case studies using five different advanced methodologies. These will expose the attendees to the importance of applying advanced methodology to unravel relationships and understanding that are not easy to understand otherwise

Are Mobile Device Location Data Biased for Human Mobility Analysis? (TRBAM-24-02798)

Xiaojian Zhang/University of Florida, Xilei Zhao/University of Florida, Xiang Yan/University of Florida

Exploring Travel Behavior and Mobility Patterns Using Twitter Data (TRBAM-24-03291)

Siroos Shahriari/University of New South Wales, Alireza Abbasi/University of New South Wales, Taha Rashidi/University of New South Wales

Accommodating Non-Monotonic Preference in Multiple Discrete–Continuous Extreme Value Choice Model: Formulation and Application to Time Use Decisions (TRBAM-24-04216)

Mengyi Wang/Tongji University, Xin Ye/Tongji University, Michel Bierlaire/Tongji University

Incorporating the Notion of Habit from Neuroscience in Dynamic Routine Travel Modeling: an Application to Telework Decisions through the Pandemic (TRBAM-24-06408)

Qianhua Luo/University of California, Berkeley, Joan Walker/University of California, Berkeley

Housing Choice in an Evolving Remote Work Landscape (TRBAM-24-01093)

Dale Robbenolt/University of Texas, Austin, Angela Haddad/University of Texas, Austin, Aupal Mondal/University of Texas, Austin, Chandra Bhat/University of Texas, Austin

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 152B

How Could Technology and Post-Pandemic Work Norms Change Travel Behavior?

Katherine Asmussen, University of Texas, Austin, presiding

Flavia Tsang, Metropolitan Transportation Commission (MTC), presiding

Sponsored By Standing Committee on Transportation Demand Forecasting

Most of our existing travel forecasting processes rely on travel behavior being primarily driven by mandatory work trips and supported by a traditional, relatively static, set of mode choices. As our lived experience in recent years has shown, this assumption has not necessarily held. This session explores how travel behavior has and potentially will change and if and how our forecasting processes should evolve.

Relax on the Way to Work or Work on the Way to Relax?: Influences of Vehicle Interior on Travel Time Perceptions in Autonomous Vehicles (TRBAM-24-00743)

Brenden Lavoie/University of Toronto, Felita Ong/University of Toronto, Khandker Habib/University of Toronto

Investigating Objective and Subjective Factors Influencing the Adoption, Frequency, and Characteristics of E-Scooter Trips (TRBAM-24-05425)

Alimurtaza Kothawala/University of Texas, Austin, Angela Haddad/University of Texas, Austin, Basar Ozbilen/University of Texas, Austin, Chandra Bhat/University of Texas, Austin, Giovanni Circella/University of Texas, Austin, Charalampos Saridakis/University of Texas, Austin, Zia Wadud/University of Texas, Austin, Yuanxuan Yang/University of Texas, Austin, Susan Grant-Muller/University of Texas, Austin, Sebastian Castellanos/University of Texas, Austin

Investigating Preferences and Residential Mismatching of Recent (Before, During, and After COVID-19) Movers in the Greater Toronto Area (TRBAM-24-02253)

Yicong Liu/University of Toronto, Saeed Shakib/University of Toronto, Christopher Higgins/University of Toronto, Steven Farber/University of Toronto, Eric Miller/University of Toronto, Khandker Habib/University of Toronto

Does Willingness to Give Control to Automation Differ Among Drivers?: Modeling the Differences Between Internalizers and Externalizers (TRBAM-24-00102)

Muhammad Sajjad Ansar/Toronto Metropolitan University, Nael Alsaleh/Toronto Metropolitan University, Bilal Farooq/Toronto Metropolitan University

The Induced Demand Implications of Alternative Adoption Modalities of Automated Vehicles (TRBAM-24-05904)

Irfan Batur/Arizona State University, Aupal Mondal/Arizona State University, Victor Alhassan/Arizona State University, Katherine Asmussen/Arizona State University, Chandra Bhat/Arizona State University, Ram Pendyala/Arizona State University

From Intention to Action: A Longitudinal Examination of Factors Contributing to Active Transportation Mode Shifts Amid and After the Pandemic (TRBAM-24-05287)

Fan Yu/Arizona State University, Amanda Stathopoulos/Arizona State University, Hani Mahmassani/Arizona State University

4007 CM (1.75)

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 151A

All About Carpooling: What It Takes to Switch and Why It Matters

Lisa Kay Schweyer, Foursquare ITP, presiding

Sponsored By Standing Committee on Transportation Demand Management

In this session, attendees will learn more about various strategies to help reduce vehicle congestion and single occupancy vehicle usage. This session will focus specifically on All about carpooling: what does it take to switch? And why does it matter?, featuring presentations on Casual Carpooling with Incentivized Parking at Universities, An Analytical Model of Many-To-One Carpool System Performance Under Cost-based Detour Limits, What Does It Take for Rural-Urban Commuters to Switch from Driving to Carpooling?, and Economies of Scale in Carpooling and its Effects on Optimal Tolling and HOV Lanes.

Casual Carpooling with Incentivized Parking at Universities (TRBAM-24-01348)

Xiankui Yang/University of South Florida, Daniel Rodriguez-Roman/University of South Florida, Peng Chen/University of South Florida, Ran Tao/University of South Florida, Hector Carlo/University of South Florida

An Analytical Model of Many-to-One Carpool System Performance Under Cost-Based Detour Limits (TRBAM-24-01447)

Xin Dong/Pennsylvania State University, Hao Liu/Pennsylvania State University, Vikash Gayah/Pennsylvania State University

What Does It Take for Rural and Urban Commuters to Switch from Driving to Carpooling? (TRBAM-24-04858)

Helia Mohammadi-Mavi/Pennsylvania State University, Andisheh Ranjbari/Pennsylvania State University, S. Ilgin Guler/Pennsylvania State University, Vikash Gayah/Pennsylvania State University

Economies of Scale in Carpooling and its Effects on Optimal Tolling and HOV Lanes (TRBAM-24-06451)

Ayush Pandey/University of Illinois, Urbana-Champaign, Lewis Lehe/University of Illinois, Urbana-Champaign

4008

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 151B

Navigating and Safeguarding Transportation Agency Information: Applications of Taxonomies, Ontologies, and Knowledge Graphs

Frances Harrison, Spy Pond Partners, LLC, presiding

Sponsored By Standing Committee on Information and Knowledge Management, Standing Committee on Information Systems and Technology

As transportation agencies digitize paper records and move data to the cloud, there is a need for new ways of accessing and protecting the information. This session will explore how transportation agencies are creating and using information classification and organization schemes to make information more findable and secured.

Words Matter: Lists to Ontologies (P24-20430)

Andy Everett/Washington State Department of Transportation

Information Classification at the Massachusetts Department of Transportation: Motivations and Future Directions (P24-20431)

Paul Tykodi/Massachusetts Department of Transportation

A Purpose Built System: Lessons Learned Implementation by the Los Angeles Metro (P24-20432)

Omar Camacho/Los Angeles County Transportation Authority (LACMTA)

How a Project to Digitize Legacy Paper Records Can Be Used as the Basis for a Transit System Knowledge Graph (P24-20433)

Joseph Busch/Taxonomy Strategies

4009

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 156

Who Is Responsible and Who Pays When an Automated Vehicle Crashes: A Case Study of the Tempe, Arizona, Tragedy

Alan Steinberg, California Department of Transportation, presiding

Sponsored By Standing Committee on Emerging Technology Law

The first major crash that led to a fatality involving an Automated Vehicle (AV) was a seminal moment and turning point in the driverless car movement. Like any innovative new mobility service or technology, the existing legal system is tested to allocate responsibility or fault among parties, and to attempt to achieve justice. The Tempe, Arizona tragedy involved the untimely death of a pedestrian by an AV in testing mode, with a test driver. A combination of civil actions, government investigations and criminal prosecutions resulted, involving federal and state authorities and private litigants, and the series of twists and turns recently concluded.

When an Automated Vehicle Crashes, Who Is Responsible and Who Pays?: A Case Study of the Tempe, Arizona, Tragedy (P24-21073)

Matthew Daus/City College of New York, John Campbell/Exponent, Inc.

4010

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 204AB

Steel Bridges: Complex Connections, Bridge Resilience, and Improved Shear Performance

Travis Hopper, American Institute of Steel Construction, presiding

Sponsored By Standing Committee on Steel Bridges, Standing Committee on Testing and Evaluation of Transportation Structures, Standing Committee on Fabrication and Inspection of Metal Structures, Standing Committee on Structures Maintenance, Standing Committee on Bridge Preservation

This session will begin with a discussion of the results of a study that addresses the sufficiency of natural frequencies for structural parameter estimation of complex connections in a benchmark laboratory steel grid by updating its simplified analytical model. The second presentation will discuss a study on nonlinear impact analysis to assess the response of an unprotected vehicle-girder model, yielding realistic deformation outcomes comparable to observed impacts on a US-61 bridge. Lastly, the third presentation will present forming low-frequency sinusoidal (LFS) patterns along a steel plate girder web as a novel, less fabrication-intensive approach to enhancing the shear capacity of thin plates.

Comparison of Using Global and Local Modal Properties for the Estimation of Structural Joint Parameters in Updating Low-Fidelity Analytical Models of a Benchmark Steel Structure with Complex Connections (TRBAM-24-05005)

Erin Bell/University of New Hampshire, Milad Mehrkash/University of New Hampshire

Enhancing Bridge Resilience and Overheight Vehicle Mitigation Through Innovative Sacrificial Cushion Systems (P24-20557)

Aly Mousaad Aly/Louisiana State University

Low-Frequency Sinusoidal Webs for Improved Shear Performance of Plate Girders (P24-20801)

Peter Wang/HNTB Corporation

4011

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 201

Gaining Perspective in Construction Management

Jennifer Shane, Iowa State University, presiding

Sponsored By Standing Committee on Construction Management

In Gaining Perspective in Construction Management we'll look at risk management, schedule quality, and inspection workforce in the transportation sector.

Insights for Effective Risk Management in Transportation Projects (TRBAM-24-05263)

Alyson Tamer/No Organization, Andrew Folz/No Organization, Sina Gholami/No Organization, Abdullah Alsharef/No Organization, Gongfan Chen/No Organization, Edward Jaselskis/No Organization

Recruitment and Retention of Transportation Construction Inspectors (TRBAM-24-04468)

Manideep Tummalapudi/Colorado State University, Christofer Harper/Colorado State University, Jon Elliott/Colorado State University, Daniel Tran/Colorado State University, David Hoyne/Colorado State University

Assessment of Schedule Quality Problems from the Department of Transportation Schedule Reviewers'

Perspective: A Case of the Texas Department of Transportation (TRBAM-24-02431)

Junghye Son/University of Texas, Austin, Byung Gi Han/University of Texas, Austin, Nabeel Khwaja/University of Texas, Austin, William O'Brien/University of Texas, Austin

4012

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 206

Improvements in Ultrasonic Testing of Welds

Curtis Schroeder, Wiss, Janney, Elstner Associates, presiding

Sponsored By Standing Committee on Fabrication and Inspection of Metal Structures, Standing Committee on Steel Bridges

Recent studies and developments on Ultrasonic Testing of steel bridges and structures will be presented. These include studies which evaluated ultrasonic testing of welds, including consistency and improvements in flaw size measurements, evaluation of technician performance testing, and effects of scanning through paint.

U.S. Army Corps of Engineers Phased Array Ultrasonic Testing Flaw Sizing (P24-20648)

Phillip Sauser/Slim Buttes Structural Engineering Services, LLC

UT Performance Qualification Testing (P24-20649)

Robert Connor/Purdue University

Paint Effects on Ultrasonic Testing (P24-20650)

Curtis Schroeder/Wiss, Janney, Elstner Associates

4013

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 209AB

Impact of Water on the Performance of Enhanced Geomaterials

Angelica Palomino, University of Tennessee, Knoxville, presiding

Sponsored By Standing Committee on Geo-Environmental and Climatic Impacts on Geomaterials

Difference in Surface Characteristic Between Montmorillonite and Cement Adsorbed with Sodium Polyacrylate (TRBAM-24-01311)

Zhuoran Li/Southeast University, Ying Gao/Southeast University

Effects of *Bacillus pasteurii*-induced Treatment on Soil-Water Characteristics of Granite Residual Soil (TRBAM-24-01494)

Lihao Liu/Chongqing Jiaotong University, Yongsheng Yao/Chongqing Jiaotong University, Jue Li/Chongqing Jiaotong University, Lihao Liu/Chongqing Jiaotong University, Xiuying Ma/Chongqing Jiaotong University

Flood Impact on Surface-Treated Pavements in Texas Coastal Region (TRBAM-24-05256)

FENG HONG/Texas State University, Jolanda Prozzi/Texas State University

(continued)

Predicting the Water Balance of a Test Levee Slope Improved with Vetiver Grass (TRBAM-24-06525)

Amber Spears/Jackson State University, Mohammad Sadik Khan/Jackson State University, Robert Whalin/Jackson State University

4014

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 207B

Innovative Solutions, Applications, and New Advances in Foundation Design, Performance, and Integrity

Sharid Amiri, California Department of Transportation, presiding

Sponsored By Standing Committee on Foundations of Bridges and Other Structures, Section - Geology and Geotechnical Engineering

This lectern session covers new findings in pile setup, aging and pile Integrity testing, new technics in foundation lateral load design and performance, improved insight into foundation design methodologies in soft clay and sustainability in foundation type selection.

Assessment of Axial Resistance of Piles Considering Consolidation Setup and Aging Setup Using Direct Pile-CPT Methods (TRBAM-24-00211)

Isam Khasib/Louisiana Department of Transportation and Development, Murad Abu-Farsakh/Louisiana Department of Transportation and Development

The Accuracy and Use of Thermal Integrity Profiling and Crosshole Sonic Logging in Illinois (TRBAM-24-02521)

Abedalqader Idries/University of Illinois, Urbana-Champaign, Timothy Stark/University of Illinois, Urbana-Champaign, Abdolreza Osouli/University of Illinois, Urbana-Champaign, Michael Short/University of Illinois, Urbana-Champaign, Heather Shoup/University of Illinois, Urbana-Champaign, Kevin Johnson/University of Illinois, Urbana-Champaign

Effect of Pile-Soil Modulus Ratio on Lateral Capacity of Model Pile Group (TRBAM-24-03519)

Gökhan Baykal/Bogazici Universitesi, Sercan Akbaşak/Bogazici Universitesi

Evaluation of Design Parameters (α and β) for Analysis and Design of Piles on Soft Clays (TRBAM-24-04753)

Md. Haque/Louisiana Department of Transportation and Development, Murad Abu-Farsakh/Louisiana Department of Transportation and Development

Experimental Investigation of Load Capacity: Recycled Plastic Pins as Sustainable Alternatives to Timber Piles (TRBAM-24-04975)

Sehneela Sara Aurpa/University of Texas, Arlington, Md Azijul Islam/University of Texas, Arlington, MD Sahadat Hossain/University of Texas, Arlington

4015

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 202A

Impact of Aging on the Mechanical Performance of Asphalt Mixtures

Xiomara Sanchez, University of New Brunswick, presiding

Sponsored By Standing Committee on Asphalt Mixture Evaluation and Performance

Accelerating Laboratory Long-Term Aging of Asphalt Mixtures Using a New Pressure Vessel (TRBAM-24-00565)

Benjamin Arras/Texas Department of Transportation, Imad Abdallah/Texas Department of Transportation, Soheil Nazarian/Texas Department of Transportation

Effect of Aging on Damping Properties of Rubberized Asphalt Binder and Rubberized Porous Asphalt Mixture (TRBAM-24-02978)

Lei Xu/Tongji University, Yue Deng/Tongji University, Hangtian Ni/Tongji University, Daquan Sun/Tongji University, Yufeng Tian/Tongji University, Senlin Ling/Tongji University

Evaluating Aging Resistant Technologies for Enhancing Cracking Resistance of Asphalt Mixtures (TRBAM-24-05484)

Josue Garita-Jimenez/Auburn University, Nam Tran/Auburn University, Faustina Keuliyani/Auburn University, Raquel Moraes/Auburn University, Carolina Rodezno/Auburn University, Fan Yin/Auburn University

Analysis of Asphalt Mixture Cracking Tolerance Under Different Aging Conditions and Implementation of a Predictive Modeling Framework (TRBAM-24-06196)

Adeoluwa Gbolade/Oklahoma State University, Sina Mousavi Rad/Oklahoma State University, Jason Bausano/Oklahoma State University, David Vivanco-Sala/Oklahoma State University, Mohamed Elkashef/Oklahoma State University, Debakanta Mishra/Oklahoma State University

4016

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 207A

Low Embodied Carbon Pavements

Heather Dylla, Construction Partners Inc., presiding

Migdalia Carrion, Federal Highway Administration (FHWA), presiding

Sponsored By Section - Pavements, Section - Pavements, Subcommittee on Sustainable and Resilient Pavements, Subcommittee on Young Members

The Inflation Reduction Act, provided \$2Billion to FHWA to procure materials with substantially lower embodied greenhouse gas emissions as determined by EPA. This lectern session will look at strategies in quantifying or reducing the environmental impacts of pavement materials.

Life-Cycle Assessment for the Use of Waste Plastics in Asphalt Concrete Mixes (TRBAM-24-00270)

Lara Diab/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

Development of a Systematic Approach to Estimate Mix-Specific Dryer Burner Fuel Consumption at Asphalt Plants (TRBAM-24-04742)

Surendra Chowda Gatiganti/National Center for Asphalt Technology (NCAT), Benjamin Bowers/National Center for Asphalt Technology (NCAT)

Development of a Life-Cycle Assessment Uncertainty Framework (TRBAM-24-00463)

Michelle Cooper/Federal Highway Administration (FHWA), Amlan Mukherjee/Federal Highway Administration (FHWA)

Breaking Barriers to Low Carbon Concrete Pavements (TRBAM-24-02650)

Sarah Lopez/NCE, Lawrence Sutter/NCE, R. Douglas Hooton/NCE, Thomas Van Dam/NCE, Allison Innis/NCE, Kevin Senn/NCE

4017

CM (1.75)

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 146B

Family Structure and Needs: Impact on Gendered Travel Patterns

Nikhil Menon, Pennsylvania State University, Harrisburg, presiding

Sponsored By Standing Committee on Women and Gender in Transportation

This lectern session features presentations on the dynamics of family structure that shape travel and travel-related wellbeing. More specifically, the papers explore the relationships between access to resources and travel, as well as the challenges and tradeoffs undertaken by various members of the household in participating in activities and satisfying mobility needs.

Two Rode, But Not Together: Gender Commuting Trade-Offs in Two-Worker Households (TRBAM-24-00176)

Md Islam/University of California, Irvine, Jean-Daniel Saphores/University of California, Irvine

Decisions and Distance: The Relationship Between Child Care Access and Child Care Travel (TRBAM-24-00210)

Evelyn Blumenberg/University of California, Los Angeles, Madeline Wander/University of California, Los Angeles, Zhiyuan Yao/University of California, Los Angeles

Toward Gender Mainstreaming Transport Planning: Measuring Access to Care (TRBAM-24-02319)

Nicholas Mooney/McMaster University, Léa Ravensbergen/McMaster University, Anastasia Soukhov/McMaster University

Gender Differences in Stress, Happiness, and Meaningfulness During Mobility of Care Among U.S. Adults (TRBAM-24-04399)

Amy Fong/University of Michigan, Ann Arbor, Atiyya Shaw/University of Michigan, Ann Arbor

How Children's Activities Influence Parents' Mobility Patterns (TRBAM-24-02778)

Jimmy ARMOOGUM/The World Bank, ARIANE DUPONT KIEFFER/The World Bank, Yeshtabye GOPAL/The World Bank, Clotilde Minster/The World Bank

4018

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 146C

Inequities in Tribal Transportation Safety

Samuel Ricord, SRF Consulting Group, Inc., presiding

Sponsored By Standing Committee on Native American Transportation Issues

Transportation systems, as integral parts of human settlements, reflect the societal structures and cultural ideologies influenced predominantly by the dominant race or class. Safety equity is a critical concern for rural and American Indian and Alaskan Natives (AI/AN) communities. Both face disproportionate rates of serious injury, fatal, and general collisions. This lectern sessions will feature two research teams. One study aims to address the inequities present in current transportation systems by conducting a comprehensive examination of the transportation experiences of individuals belonging to ten specific underserved communities. The other study addresses gaps by presenting a statistical model that predicts the true demographics of collisions for a community to address safety equity concerns. In the absence of prioritizing the transportation needs of underserved communities, transportation systems may perpetuate systematic inequities.

Introductions and Discussion Facilitator (P24-21406)

Rhonda Fair/Oklahoma Department of Transportation

Identifying Demographics of Collisions in American Indian and Alaskan Native Communities (P24-21407)

Samuel Ricord/SRF Consulting Group, Inc.

Centering the Margins: The Transportation Experience of Underserved Communities (P24-21408)

Yingling Fan/University of Minnesota

4019

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 146A

The Air We Breathe: Intersectionality of Sustainability, Resilience, and Society in Transportation and Public Health

Megan Wier, Oakland Department of Transportation, presiding

Brittney Gick, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Transportation and Public Health, Subcommittee on Young Members-Sustainability and Resilience

Clean air is a fundamental need and right. Transportation systems are responsible for emitting significant pollutants, which can hurt air quality, harm people's health, and reduce the livability of communities. Concurrently, wildfire activity near and far from communities can lead to unhealthy air due to smoke. These smoke events can lead to changes in travel behavior, discourage active modes of transportation, and produce dangerous health conditions for vulnerable populations. In this session, experts in transportation sustainability, resilience, and society will discuss existing challenges and possible public health and transportation strategies for clean air mitigation and smoke adaptation.

Sustainability Perspectives on Air, Public Health, and Transportation (P24-20225)

Regan Patterson/University of California, Los Angeles

Society Perspectives on Air, Public Health, and Transportation (P24-20226)

Lisa Losada Rojas/University of New Mexico

Resilience Perspectives on Air, Public Health, and Transportation (P24-20227)

Stephen Wong/University of Alberta

4020

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 140

Unique Data Collection and Analysis Methods for Alternative Fuel Vehicles

Rachael Nealer, U.S. Department of Energy (DOE), presiding

Sponsored By Standing Committee on Alternative Fuels and Technologies

Sentiments of Rural U.S. Communities on Electric Vehicles and Infrastructure: Insights from Twitter Data (TRBAM-24-03486)

Li Zhao/University of Nebraska, Lincoln, Bryan Ming Wang/University of Nebraska, Lincoln, Abigail Cochran/University of Nebraska, Lincoln

Role of Car Segment and Fuel Type in the Choice of Alternative Fuel Vehicles: A Cross-Nested Logit Model for the English Market (TRBAM-24-01679)

Cristian Domarchi/Newcastle University, Elisabetta Cherchi/Newcastle University

Electric Vehicle Trips Detection and Synthesis via Cellular Data (TRBAM-24-05840)

Xiaowei Chen/Purdue University, Omar Faruqe Hamim/Purdue University, Satish Ukkusuri/Purdue University

Integrated Vehicle Routing and Battery Redistribution Plans for Mobile Battery Swapping Service: Leveraging MPC and Deep Reinforcement Learning (TRBAM-24-01999)

Jiahua Qiu/University of Florida, Lili Du/University of Florida, Qichao Wang/University of Florida

4021 CM (1.75)

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 145A

Economics and Equity of Shared Mobility Services

Francesco Ciari, Ecole Polytechnique de Montreal, presiding

Sponsored By Standing Committee on Innovative Public Transportation Services and Technologies

This lectern session features a collection of papers examining economic issues of shared mobility, including willingness to pay, subsidies, and cost benefit analysis.

Joint Design of Public Transport Services and Ridehailing Subsidies (TRBAM-24-00572)

Bing Liu/Tongji University, Xiao Lin/Tongji University, Yuxiong Ji/Tongji University, Oded Cats/Tongji University

Integrating Human Factors in Dynamic Rideshare Assignment: Willingness to Pay for Delay (TRBAM-24-04041)

Joseph Paul/Clemson University, Krishna Murthy Gurusurthy/Clemson University, Taner Cokyasar/Clemson University, Haotian Su/Clemson University, Joshua Auld/Clemson University, Yunyi Jia/Clemson University

On-Demand Autonomous Vehicles in a Periurban Territory: A Cost-Benefit Analysis (TRBAM-24-04645)

Felix Carreyre/IRT SystemX, Tarek Chouaki/IRT SystemX, Nicolas Coulombel/IRT SystemX, Jaâfar Berrada/IRT SystemX, Laurent Bouillaut/IRT SystemX, Sebastian Hörl/IRT SystemX

Exploring the Effects of Monetary and Time Cost on Travel Mode Choice: A Study of Transit and Ridehailing in California (TRBAM-24-03161)

Marlon Boarnet/University of Southern California, Qifan Shao/University of Southern California, Clemens Pilgram/University of Southern California

4022 CM (1.75)

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 145B

Insights on Operations and System Design

Jason Mumford, STV, Inc, presiding

Sponsored By Standing Committee on Urban Rail Transit Systems

Urban rail operations and system design involve planning/scheduling, design/construction, and management of rail transit systems. Urban rail system design, such as station design, is crucial for providing efficient transit services to improve mobility for all types of passengers. Presenters will explore the optimal operating strategies, study delay prediction, and use integrated data to aid station design.

Real-Time Merging Coordination for Subway Lines with Branches: A Reinforcement Learning Approach (TRBAM-24-01192)

Jiali Zhou/University of Hong Kong, Haris Koutsopoulos/University of Hong Kong

An Explainable Network-Wide Metro Passenger Delay Prediction Model (TRBAM-24-04705)

Yuxing Cheng/Technische Universiteit Delft, Panchamy Krishnakumari/Technische Universiteit Delft, Oded Cats/Technische Universiteit Delft

Strategies to Optimize the Deployment of Roadway Maintenance Machines for Overnight Maintenance in Urban Rail Systems (TRBAM-24-06470)

John Moody/Northeastern University, Haris Koutsopoulos/Northeastern University, Michael Eichler/Northeastern University, Yann Ulysse/Northeastern University

Impact of Station Design and Passengers Flow on Urban Rail Dwell Time: A System-Wide Analysis Using Automatic Passenger Count and Automatic Vehicle Location Data (TRBAM-24-05476)

Suryakant Buchunde/University of Calgary, Saeid Saidi/University of Calgary, Shervin Ataeian/University of Calgary

Toward Age-Friendly Station Design: Using Integrated Data to Uncover Indoor Mobility Challenges for Elderly Metro Riders (TRBAM-24-02874)

Shuyu Lei/University of Hong Kong, Jiali Zhou/University of Hong Kong, Jiangyue Wu/University of Hong Kong, Jiangping Zhou/University of Hong Kong

4023

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 144AB

Advances in Methodologies and Data in Freight Transportation Planning

Bo Zou, University of Illinois, Chicago, presiding

Jose Holguin-Veras, Rensselaer Polytechnic Institute (RPI), presiding

Sushant Sharma, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Freight Transportation Planning and Logistics, Subcommittee on Freight Modeling

These top rated papers will provide insights into most the most recent advances in methodologies and data to solve freight planning and logistics challenges. The issues covered deal with truck tour problems, application of machine learning in freight modeling, e-commerce, and supply chain issues.

Integrated Synchmodal Transport Planning and Preference Learning (TRBAM-24-00620)

Mingjia He/Technische Universiteit Delft, Yimeng Zhang/Technische Universiteit Delft, Bilge Atasoy/Technische Universiteit Delft

Truck Trip and Long-Haul Truck Tour Identification Based on National-Level Truck Global Positioning System Data (TRBAM-24-06354)

Yixuan Pan/University of Maryland, College Park, Aliakbar Kabiri/University of Maryland, College Park, Aref Darzi/University of Maryland, College Park, Mohammad Ashoori/University of Maryland, College Park, Qianqian Sun/University of Maryland, College Park, Lei Zhang/University of Maryland, College Park

Refining TSP Solutions with Real-World Planner Feedback Using Machine Learning (TRBAM-24-03921)

Mohammad Hesam Rashidi/University of Toronto, Mehdi Nourinejad/University of Toronto, Matthew Roorda/University of Toronto

A Spatial Panel Analysis of Warehouse Location Choice, E-Commerce Facilities, Logistics Businesses, and Supply Chain Entities in the Three Metropolitan Areas of Texas (TRBAM-24-01089)

Kailai Wang/University of Houston, Yunpeng Zhang/University of Houston, Bruce Race/University of Houston, Lu Gao/University of Houston, Fengxiang (George) Qiao/University of Houston

4024 CM (1.75)

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 143AB

Economics of Urban and Advanced Air Mobility

Tony Diana, Federal Aviation Administration (FAA), presiding

Sponsored By Standing Committee on Aviation Economics and Forecasting, Standing Committee on Aviation System Planning, Standing Committee on New Users of Shared Airspace

The session will explore the impact of Urban Air Mobility and Advanced Air Mobility on the economy and the aviation industry. The discussion will address issues related to passenger forecasting, the relationship between airlines and UAM/AAM, and how vertiports will affect short-range travel.

Government Accountability Office Perspective (P24-20139)

Alison Snyder/U.S. Government Accountability Office (GAO)

Federal Aviation Administration Perspective (P24-20135)

Roger Schaufele/Federal Aviation Administration (FAA)

(continued)

MITRE Perspective (P24-20136)

Simon Tsao/MITRE Corporation

University of South Florida Perspective (P24-20137)

Yu Zhang/University of South Florida

Ferrovial Perspective (P24-20140)

ALBERTO BARREIRO/Ferrovial Vertiports

4025

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 143C

Hot Topics in Aviation Safety

Gaël Le Bris, WSP, presiding

Sponsored By Standing Committee on Aviation Safety, Security and Emergency Management, Standing Committee on Aircraft/Airport Compatibility

Probabilistic Analysis of Mid-Air Collision Risk by Data-Driven Approach (TRBAM-24-00392)

Jingshu Wu/Federal Aviation Administration (FAA), Firdu Bati/Federal Aviation Administration (FAA), Ilya

Pistryakov/Federal Aviation Administration (FAA), Donald McNeill/Federal Aviation Administration (FAA)

Actuarially Based Safety Benefit Estimation for Visual Tower Services (TRBAM-24-00624)

Gregory Won/No Organization, Jingshu Wu/No Organization

Government Funding Gap Impacts on Commercial Aviation Safety: Presidents Carter Through Trump (TRBAM-24-00690)

Linfeng Jin/Embry Riddle Aeronautical University, Richard Sykes/Embry Riddle Aeronautical University, Aman

Shah/Embry Riddle Aeronautical University, Anoop Jain/Embry Riddle Aeronautical University

Discovering Latent Themes in Aviation Safety Reports Using Text Mining and Network Analytics (TRBAM-24-03028)

Haoyuan Cui/Tongji University, Shiwen Zhang/Tongji University, Yingying Xing/Tongji University, Bo Jia/Tongji University,

Hongwei Wang/Tongji University, Ling Wang/Tongji University

4026

Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, 147B

Innovative Approaches to Examine Maritime Safety Issues

Todd Ripley, Maritime Administration, presiding

Sponsored By Standing Committee on Marine Safety and Human Factors

Ship Motion State Identification Based on Automatic Identification System Data and Unsupervised Naive Bayes Model (TRBAM-24-03579)

Zheng Yuan/Southeast University, China, Lei Liu/Southeast University, China, Cheng Cheng/Southeast University, China,

JingYi Sun/Southeast University, China, Wen Dou/Southeast University, China

Causation Analysis of Shipping Container Overboard Based on the Fault Tree Analysis-Bayesian Network Model (TRBAM-24-03158)

Jian xiang Guo/Tongji University, Meiting Tu/Tongji University

Maritime Incident Severity Assessment with Text Mining (TRBAM-24-01778)

Hui Zhao/A*STAR: Agency for Science Technology and Research, Xiuju Fu/A*STAR: Agency for Science Technology and

Research, Nina Zhou/A*STAR: Agency for Science Technology and Research, Zheng Qin/A*STAR: Agency for Science

Technology and Research, Zong Han Lee/A*STAR: Agency for Science Technology and Research, Daichi

Ogawa/A*STAR: Agency for Science Technology and Research

3058



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Young Professional Research in Sustainability, Society, and Resilience

Brittney Gick, Texas A&M Transportation Institute, presiding

Sponsored By Transportation Sustainability and Resilience Group, Subcommittee on Young Members-Sustainability and Resilience

Young professionals (35 and under) from the Sustainability and Resilience Group will share research and projects on a wide range of innovative and emerging topics related to Sustainability, Resilience, and Society.

Assessing Urban Form and Its Role in Shaping Perceived and Objective Access to Healthful Opportunities (P24-20282) - A110

Lisa Losada Rojas/University of New Mexico, Nikhil Menon/Pennsylvania State University, Harrisburg, V. Dimitra Pyrialakou/West Virginia University

Resilience in Motion: Evacuation Planning for a Stronger Tomorrow (P24-20452) - A111

Adrita Islam/Fehr & Peers, Meredith Milam/Fehr & Peers

Using Big Data to Evaluate Effectiveness of Vehicle Miles Traveled Reduction Strategies (P24-20454) - A113

Marissa Milam/Fehr & Peers

Socio-Economic Differences in Preferences of Amenities for an Ideal Neighborhood: A Study in Scarborough, Toronto (P24-20298) - A123

Shaila Jamal/University of Toronto

Charging Management Strategies for Medium- and Heavy-Duty Electric Vehicles Under Various Utility Tariff Structures (P24-20280) - A122

Ruolin Zhang/University of Illinois, Urbana-Champaign

Equitable Design of Shared E-Scooter and E-Bike Systems (P24-20371) - A121

Uriah Campos/University of California, Irvine, Arash Ghaffar/University of California, Irvine

The Effects of Immigration Enforcement, Border Proximity, and Driver's License Laws on Travel Outcomes for Latine Migrant Workers (P24-20455) - A120

Calvin Wuthrich/University of Vermont

Multi-Depot Electric Bus Scheduling Considering Heterogeneous Vehicle Fleets and Limitation of Charging Facilities (P24-20279) - A130

Yiran Wang/Southeast University

Elevating Sustainable Mobility: Exploring Eco-Innovation in Electric Vehicle Research Through Stakeholder and Institutional Theories (P24-20297) - A131

Ann Mary Varghese/Indian Institute of Technology, Kharagpur

How Local Context Defines the Identity and Future of Electric Vehicles in Vermont (P24-20456) - A112

Owen Palcsik/University of Vermont

4027



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Omnibus Session on Bicycle Modeling and Shared Micromobility Research

Kari Watkins, University of California, Davis, presiding

Sponsored By Standing Committee on Bicycle Transportation, Joint Subcommittee on Emerging Vehicles for Low Speed Transportation (with ACH10, ANB40, and AP020)

Join us in this session to see the latest research on bicycle modeling and shared micromobility.

Comparison of E-Scooter and Bike Users' Behavior in Mixed Traffic (TRBAM-24-00976) - B720

Natalia Distefano/No Organization, Salvatore Leonardi/No Organization, Mariusz Kiec/No Organization, Carmelo D'Agostino/No Organization

Scouting Through the Magic City: Analysis of Trip Characteristics and Usage Patterns of Shared E-Scooters in Birmingham, Alabama (TRBAM-24-01134) - B721

Mithila Hasan/HDR, Virginia P. Sisiopiku/HDR

(continued)

What Are the Characteristics of Successful Neighborhood Bikeshare Docking Stations That Encourage Trips to Bikeshare Docking Stations at Metrorail?: A Study of Capital Bikeshare in Washington, DC (TRBAM-24-02390) - B722

Md Shazalal Tushar/Virginia Polytechnic Institute, Ralph Buehler/Virginia Polytechnic Institute

Users of Shared Micromobility: Today and Tomorrow (TRBAM-24-03684) - B723

Roxani Gkavra/University of Natural Resources and Life Sciences, Yusak Susilo/University of Natural Resources and Life Sciences, Oliver Roider/University of Natural Resources and Life Sciences, Anna Grigolon/University of Natural Resources and Life Sciences, Karst Geurs/University of Natural Resources and Life Sciences

Prediction of Bikesharing Station Capacity Using Explainable Artificial Intelligence (TRBAM-24-05094) - B724

Frank Ngeni/Consort Engineers LLC, Boniphace Kutela/Consort Engineers LLC, Tumlumbe Juliana Chengula/Consort Engineers LLC, Cuthbert Ruseruka/Consort Engineers LLC, Hannah Musau/Consort Engineers LLC, Norris Novat/Consort Engineers LLC

Cycling Network Design Using a Genetic Algorithm and OpenStreetMap Data (TRBAM-24-02154) - B726

David Murray/Polytechnique Montréal, Catherine Morency/Polytechnique Montréal

Bridging the Expectation Versus Reality Gap on Route Choice Behavior of E-Bike Users: Evidence from the Greater Helsinki Region in Finland (TRBAM-24-03308) - B727

Shaghayegh Vosough/Aalto University, Claudio Roncoli/Aalto University, Khashayar Khavarian/Aalto University

Modeling the Intention to Wear Helmets for E-Bike Riders Based on an Integrated Model: An Empirical Study of Chinese College Students (TRBAM-24-01014) - B728

Ying Yang/Guangdong University of Technology, Chun Li/Guangdong University of Technology, Sangen Hu/Guangdong University of Technology, Kun Cheng/Guangdong University of Technology

Logsum Analysis of Bicycle Parking Infrastructure Improvements (TRBAM-24-00271) - B729

David Kohlrantz/RWTH Aachen University, Tobias Kuhnimhof/RWTH Aachen University

Assessing the Impacts of Micromobility Using a Novel Agent-Based Model: An Experiment in Athens, Greece (TRBAM-24-00450) - B730

Lambros Mitropoulos/National Technical University of Athens (NTUA), Panagiotis Tzouras/National Technical University of Athens (NTUA), Eirini Stavropoulou/National Technical University of Athens (NTUA), Christos Karolemeas/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA)

A Decision Tree Analysis of Attitudinal Factors Associated with Use or Non-Use of E-Scooters in Five Countries (TRBAM-24-00566) - B731

Narelle Haworth/Queensland University of Technology, Amy Schramm/Queensland University of Technology, Katrine Karlsen/Queensland University of Technology, Aslak Fyhri/Queensland University of Technology, Elisabeta Drimlová/Queensland University of Technology, Matúš Šucha/Queensland University of Technology, Pontus Wallgren/Queensland University of Technology, Peter Silverans/Queensland University of Technology, Freya Sloomans/Queensland University of Technology

Addressing System Imbalance in the Bikesharing Inventory Problem: An Enhanced Balanced Cascading Algorithm (TRBAM-24-00614) - B732

Nicola Damiano/Technical University of Denmark, Thomas Rasmussen/Technical University of Denmark, Guido Cantelmo/Technical University of Denmark

Cycling in a Crisis: Employing Quasi-Experimental Designs to Estimate the Effects of Provisional Bicycle Infrastructure (TRBAM-24-00664) - B733

Joshua Davidson/Oberlin College, Stephanie Nam/Oberlin College, Shriya Karam/Oberlin College, Megan Ryerson/Oberlin College

Injury Severity Analysis of Imbalanced E-Scooter and Bicycle Crash Data Using Statistical and Machine Learning Models (TRBAM-24-00703) - B734

Pranik Koirala/Texas A&M Transportation Institute, Ipek Sener/Texas A&M Transportation Institute, Yunlong Zhang/Texas A&M Transportation Institute

Greater London's Bike Hire Scheme: Detrimental or Beneficial to Cyclist Safety? (TRBAM-24-00767) - B735

Michael Forrest/University of Southampton, Shahram Heydari/University of Southampton

Simulating Microscopic Bicycle Flow Considering Behavioral Heterogeneity and None-Lane-Based Traffic Characteristics (TRBAM-24-00849) - B736

Johannes Brunner/ETH Zurich, Ying-Chuan Ni/ETH Zurich, Michail Makridis/ETH Zurich, Anastasios Kouvelas/ETH Zurich

Unlocking Sustainable Mobility: Exploring the Impact of Built Environment on Elderly Bikesharing Use in Chicago (TRBAM-24-00963) - B737

Tanhua Jin/Ghent University, Xiaobing Wei/Ghent University, Long Cheng/Ghent University, Kailai Wang/Ghent University, Yanan Xin/Ghent University, Frank Witlox/Ghent University

Dockless E-Scooter Demand Modeling (TRBAM-24-01115) - B739

Merkebe Demissie/University of Calgary, Lina Kattan/University of Calgary, Santi Phithakkitnukoon/University of Calgary

(continued)

Factors Influencing the Market Share of E-Bike Sharing: Evidence from New York City (TRBAM-24-01208) - B740
Xiao Zhang/Southwest Jiaotong University, Rong Zheng/Southwest Jiaotong University, Jinghai Huo/Southwest Jiaotong University

An Investigation on Bikesharing Brand Selection of Young People Using a Mixed Logit Model: A Case Study of Shanghai (TRBAM-24-01230) - B742
Yiwei Zhou/University of Shanghai for Science and Technology, Shuo Yang/University of Shanghai for Science and Technology, Hongcheng Gan/University of Shanghai for Science and Technology, Dan Liu/University of Shanghai for Science and Technology, Mo Xia/University of Shanghai for Science and Technology, Yinan Lao/University of Shanghai for Science and Technology

Congestion and Environmental Impacts of Short Car Trip Replacement with Micromobility Modes (TRBAM-24-01376) - B743
Zhufeng Fan/Carnegie Mellon University, Corey Harper/Carnegie Mellon University

E-Scooters and Transit: When Do They Compliment, When Do They Compete? (TRBAM-24-01450) - B744
Mahesha Jayawardhena/Monash University, Alexa Delbosc/Monash University, Graham Currie/Monash University, Geoff Rose/Monash University

Is Competition for Losers in Dockless Bikesharing? (TRBAM-24-01496) - B745
Hongyu Zheng/Northwestern University, Kenan Zhang/Northwestern University, Yu Nie/Northwestern University

Bikeable Streets: Uncovering the Impact of Link-Level Street Design on Bikesharing Usage (TRBAM-24-01824) - B700
Yijia HU/University of Hong Kong, Zhan Zhao/University of Hong Kong

Could Dockless and Docked Bikesharing Substitute Each Other? Analyzing the Relationship Between Two Bikesharing Patterns from Flow Clustering (TRBAM-24-02021) - B738
Xize Liu/Southeast University, Wendong Chen/Southeast University, Xuewu Chen/Southeast University, Jingxu Chen/Southeast University, Long Cheng/Southeast University

Powering Bikeshare in New York City: Does The Usage of E-Bikes Differ from Regular Bikes? (TRBAM-24-02205) - B748
Yingning Xie/Rutgers University, Michael Smart/Rutgers University, Robert Noland/Rutgers University

Quantifying E-Scooter Riders' Discomfort in Interactions with Vulnerable Road Users (TRBAM-24-02584) - B757
Khashayar Kazemzadeh/Institute of Transportation Studies (ITS), Prateek Bansal/Institute of Transportation Studies (ITS), Dillon Fitch-Polse/Institute of Transportation Studies (ITS)

Exploring Factors Affecting Helmet Use Intention Among Shared E-Bike Riders in China: A Structural Equation Modeling Approach (TRBAM-24-03077) - B749
Mingyang Pei/Tongji University, Ting Huang/Tongji University, Ke Wang/Tongji University, Xin Ye/Tongji University

A Novel Hierarchical Multimodal Spatio-Temporal Architecture for Shared Electric Bicycle Demand Predicting (TRBAM-24-03110) - B769
Ailing Yin/Tongji University, Xiaohong Chen/Tongji University

Methodology of a Large-Scale Bicycle Exposure Estimation (TRBAM-24-03133) - B752
Md Mintu Miah/University of California, Berkeley, Julia Griswold/University of California, Berkeley, Frank Proulx/University of California, Berkeley, John Bigham/University of California, Berkeley, Offer Grembek/University of California, Berkeley

Investigating the Effect of Time-Space Proximity on Cyclist Behavior (TRBAM-24-03844) - B755
Rulla Al-Haideri/Carleton University, Adam Weiss/Carleton University, Karim Ismail/Carleton University

Predicting Cycling Flows in Cities Without Cycling Data (TRBAM-24-03982) - B762
Eduardo Falbel/USP: Universidade de Sao Paulo, Lucas Meyer de Freitas/USP: Universidade de Sao Paulo, Kay Axhausen/USP: Universidade de Sao Paulo, Fabio Kon/USP: Universidade de Sao Paulo, Raphael Camargo/USP: Universidade de Sao Paulo

Extracting, Processing, and Analyzing the Interaction Between Vehicles and Bicycles on Road Segments from Automated Vehicle-Oriented Empirical Data Sets (TRBAM-24-04034) - B750
Ying Ni/Tongji University, Yilin Cai/Tongji University, Shihan Wang/Tongji University, Jiayuan He/Tongji University, Jian Sun/Tongji University

Mesosopic Modeling of Cycling Trip Energy Expenditure Based on Operating Modes (TRBAM-24-04125) - B763
Fajar Ausri/University of British Columbia, Alexander Bigazzi/University of British Columbia

Examining Social-Demographic Determinants of Bikesharing Station Capacity Using Smart Location Database (TRBAM-24-04779) - B725
Boniphace Kutela/Texas A&M Transportation Institute, Hamza Khalaf/Texas A&M Transportation Institute, Meshack Mihayo/Texas A&M Transportation Institute, Emmanuel Kidando/Texas A&M Transportation Institute, Angela Kitali/Texas A&M Transportation Institute

(continued)

Roadblocks to Ride: Unraveling Barriers to Access Shared Micromobility Systems in the United States (TRBAM-24-04799) - B764

Farzana Tuli/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville, Ty Carnahan/University of Arkansas, Fayetteville, Daibelis Arauz/University of Arkansas, Fayetteville, Jack Barnes/University of Arkansas, Fayetteville

To What Extent Does Micromobility Enable Car-Light Lifestyles? (TRBAM-24-04860) - B758

HOSSAIN MOHIUDDIN/University of California, Davis, Dillon Fitch-Polse/University of California, Davis, Susan Handy/University of California, Davis

Examining the Lateral Positioning and Clearance of Cyclists and Motorists in Christchurch, New Zealand (TRBAM-24-05099) - B765

Yu Li/University of Canterbury, Jacobus Van der Walt/University of Canterbury, Alan Basnet/University of Canterbury, Tejaswi Acharya/University of Canterbury, Eric Scheepbouwer/University of Canterbury, Brian Guo/University of Canterbury, Tirth Patel/University of Canterbury

Rider-Centric Insights into Cyclists' Behavior and Perception: A Review of Eye-Tracking Device Instrumented Cycling Experiments (TRBAM-24-05119) - B767

Shiyu Ma/Rutgers University, New Brunswick, Wenwen Zhang/Rutgers University, New Brunswick

Shared Micromobility Fees: Current Patterns, Impacts, and Best Practices (TRBAM-24-05772) - B753

Calvin Thigpen/Lime, Kevin Fang/Lime, John MacArthur/Lime

Developing Realistic Bicycle Overtaking Simulation Model Using Domain Knowledge Guided Reinforcement Learning (TRBAM-24-05895) - B760

Shuqiao Wei/Tongji University, Ying Ni/Tongji University, Jian Sun/Tongji University, Shihan Wang/Tongji University

Navigating the Urban Jungle: Evaluating the Impact of Infrastructure Policies on Energy-Efficient Access for Micromobility (TRBAM-24-05996) - B768

Shivam Sharda/National Renewable Energy Laboratory, Christopher Hoehne/National Renewable Energy Laboratory, Sailesh Acharya/National Renewable Energy Laboratory, Michael Allen/National Renewable Energy Laboratory, Venu Garikapati/National Renewable Energy Laboratory, Ambarish Nag/National Renewable Energy Laboratory, Yantao Huang/National Renewable Energy Laboratory

The Impact of Parking Density and Land Uses on Shared Scooter Parking Compliance and Demand (TRBAM-24-05153) - B754

Sian Meng/University of Oregon, Anne Brown/University of Oregon, Calvin Thigpen/University of Oregon, Brandon Haydu/University of Oregon, Nicholas Klein/University of Oregon

Paving the Way for Micromobility Services: A Cross-Sector Research Roadmap (TRBAM-24-04404) - B759

Angela Sanguinetti/University of California, Davis, Dillon Fitch-Polse/University of California, Davis, Beth Ferguson/University of California, Davis, Mollie D'Agostino/University of California, Davis

4028



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Vehicle-Highway Automation, Part 3 (Part 1, Session 3162; Part 2, Session 3229)

Parth Bhavsar, Kennesaw State University, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation

The Effect of Riding Experience on Changing Opinions Toward Connected and Autonomous Vehicle Safety: Evidence from Field Experiments (TRBAM-24-01469) - B772

Yang Li/University of Wisconsin, Milwaukee, Xiaowei Shi/University of Wisconsin, Milwaukee, Xiaopeng (Shaw) Li/University of Wisconsin, Milwaukee

Traffic Sign Detection Algorithm Based on Improved YOLOv8 (TRBAM-24-01667) - B773

Yongneng Xu/NanJing University of Science and Technology, Ruilong Niu/NanJing University of Science and Technology

Deep Reinforcement Learning-Based Control Strategy for Mixed-Autonomy Traffic at Signalized Intersections: Considering the Impacts of Aggressive Human Driving Behaviors (TRBAM-24-01726) - B770

Haoming Li/Shanghai Jiao Tong University, Linjun Lu/Shanghai Jiao Tong University, Xianing Wang/Shanghai Jiao Tong University, Yin Wang/Shanghai Jiao Tong University

Augmenting Loop Closure Detection Performance in Autonomous Navigation: A Temporal Similarity-Based Approach (TRBAM-24-01744) - B780

wuqi wang/Chang'an University, Haigen Min/Chang'an University, Xia Wu/Chang'an University, Xinmeng Hou/Chang'an University, Xiangmo Zhao/Chang'an University

(continued)

Research State of the Art in Testing and Evaluation Technology for Highly Autonomous Vehicles (TRBAM-24-01990) - B774

Lan Yang/Chang'an University, Xia Li/Chang'an University, Xiangmo Zhao/Chang'an University, Fei Hui/Chang'an University, Yuan Qi/Chang'an University, He Yu/Chang'an University, Li Jie/Chang'an University, Li Ran/Chang'an University, Liu Yan/Chang'an University

Development of Testbed of Connected and Autonomous Vehicles (TRBAM-24-02160) - B775

Tienake Phuapaiboon/North Carolina A&T State University, Jose Matute/North Carolina A&T State University, Daniel Tobias/North Carolina A&T State University, Tesfamichael Getahun/North Carolina A&T State University, Ali Karimodini/North Carolina A&T State University

Comparing the Lane-Changing Execution Behavior of Human-Driven and Autonomous Vehicles: Evidence from the Waymo Data Set (TRBAM-24-02167) - B777

Yasir Ali/Loughborough University, Anshuman Sharma/Loughborough University, Danjue Chen/Loughborough University

Virtual Assessment of Advanced Driving Assistance Messages for Safety of Pedestrian Crossing: A Realistic Simulation Using Unreal Engine (TRBAM-24-02826) - B778

Milad Sashurpour/Concordia University, Maziyar Layegh/Concordia University, Golnoosh Sarkandi/Concordia University, Ciprian Alecsandru/Concordia University

A Brain-Inspired, Perception-to-Planning Framework for Lane-Changing Empowered by Cognitive Map (TRBAM-24-02884) - B782

Hongliang Lu/Hong Kong University, Guangzhou, Chao Lu/Hong Kong University, Guangzhou, Meixin Zhu/Hong Kong University, Guangzhou, Hai Yang/Hong Kong University, Guangzhou

Vehicle Trajectory Prediction with Temporal-Spatial Fusion Attention Based on Lane Flow Learning (TRBAM-24-02929) - B789

Kai Xiao/Shenzhen University, Xuxin Zhang/Shenzhen University, Haipeng Cui/Shenzhen University

Off-Ramp, Lane-Changing Model Based on Deep Reinforcement Learning Method (TRBAM-24-02935) - B788

Ye Li/Central South University, Weiran Li/Central South University

Modeling Electric Adaptive Cruise Control Vehicle Car-Following Behavior with Experimental Data (TRBAM-24-03034) - B787

Arian Zare/University of Minnesota, Mingfeng Shang/University of Minnesota, X. David Kan/University of Minnesota, Raphael Stern/University of Minnesota

Sentiment Analysis of News Media Presentation of Automated and Self-Driving Vehicle Technology (TRBAM-24-03070) - B786

Sunday Okafor/University of Alabama, Tuscaloosa, Praveena Penmetsa/University of Alabama, Tuscaloosa, Emmanuel Adanu/University of Alabama, Tuscaloosa, Matthew Hudnall/University of Alabama, Tuscaloosa, Somayeh Ramezani/University of Alabama, Tuscaloosa, Steven Holiday/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

The Effect of Pavement Surface Texture, Speed, and Water Depth on Braking Performance of Autonomous Shuttles: An Experimental Evaluation (TRBAM-24-03180) - B785

Manuela Gennesseaux/Université Gustave Eiffel, Veronique Cerezo/Université Gustave Eiffel, Edjeou Wiyao/Université Gustave Eiffel, Aboubakar Kone/Université Gustave Eiffel, Minh-Tan Do/Université Gustave Eiffel

Spatial-Temporal Reliability Assessment of Multi-Vehicle Cooperative Perception in Unprotected Left-Turn Scenarios at Signalized Intersection (TRBAM-24-04520) - B783

Chen Chai/Tongji University, Tao Liu/Tongji University, Geyuan Zhang/Tongji University, Jiashun Xu/Tongji University, Songhao Lai/Tongji University, Jiajun Xia/Tongji University, Minyue Hu/Tongji University

Exploring the Effects of Fleet Size and Pricing Policy in Shared Autonomous Vehicle Systems on Travel Efficiency, Equity, and Profitability (TRBAM-24-04620) - B784

Haoming Yang/Carnegie Mellon University, Corey Harper/Carnegie Mellon University

Risley Prism-Based, Multi-Beam LiDAR Model for Autonomous Vehicle Testing (TRBAM-24-05274) - B779

Cheng Peng/Chang'an University, Xiangmo Zhao/Chang'an University, Zhen Wang/Chang'an University

4029



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Modeling and Analysis of Roadway Noise

Mukul Pal, HDR, presiding

Sponsored By Standing Committee on Transportation-Related Noise and Vibration

This poster session provides emerging traffic noise analysis issues focusing on urban intersections and optimization of noise prediction models.

Analysis of Traffic Noise at Intersections in Mid-Sized Indian Cities Using Artificial Neural Network

(TRBAM-24-00026) - A100

Adarsh Yadav/Indian Institute of Technology, Roorkee, Pushpa Choudhary/Indian Institute of Technology, Roorkee, Manoranjan Parida/Indian Institute of Technology, Roorkee, Brind Kumar/Indian Institute of Technology, Roorkee

Noise Emission Equivalency-Based Genetic Algorithm Optimization Traffic Noise Prediction Model

(TRBAM-24-04424) - A102

Anirudh Mishra/SVNIT Surat: Sardar Vallabhbhai National Institute of Technology, Dr. Bhaven Tandel/SVNIT Surat: Sardar Vallabhbhai National Institute of Technology, Avnish Shukla/SVNIT Surat: Sardar Vallabhbhai National Institute of Technology

Modeling Traffic Noise Annoyance at Intersections in Mid-Sized Cities: An Integrated Structural Equation

Modeling-Artificial Neural Network Approach (TRBAM-24-00982) - A101

Adarsh Yadav/Indian Institute of Technology, Roorkee, Manoranjan Parida/Indian Institute of Technology, Roorkee, Pushpa Choudhary/Indian Institute of Technology, Roorkee, Brind Kumar/Indian Institute of Technology, Roorkee

4030



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Building Better Bridges

Sponsored By Standing Committee on Construction of Bridges and Structures, Standing Committee on Innovative Highway Structures and Appurtenances, Standing Committee on Quality Assurance Management

3D Printing Methods Using New Concepts and Ultra-High Performance Concrete Suitable for Accelerated

Bridge Construction (TRBAM-24-01782) - B697

Atorod Azizinamini/Florida International University

A Comprehensive Accelerated Bridge Construction Decision-Support Tool Considering Safety, Social Equity, and Environmental Justice (TRBAM-24-04890) - B694

Nasim Mohamadiazar/Florida International University, Ali Ebrahimian/Florida International University

Framework for Integrating the Reliability of the Inspection Technique into Risk-Based Inspection Practice

(TRBAM-24-02388) - B699

AEDH ALHARTHI/Purdue University, Glenn Washer/Purdue University, Robert Connor/Purdue University

Parametric Study on Buckling Capacity of Concrete Encased Steel H-Piles on Highway Bridge Structures

(TRBAM-24-02813) - B696

Seyedamin Mousavi/AECOM, Zhengyu Liu/AECOM, Brent Phares/AECOM

Design of Precast Hollow Core Slab Using Topology Optimization: Analysis and Validation (TRBAM-24-05828) - B698

Ke Cheng/Tongji University, Jiading, Dachen Gao/Tongji University, Jiading, HongDuo Zhao/Tongji University, Jiading, Lukuan Ma/Tongji University, Jiading, Mengyuan Zeng/Tongji University, Jiading

Experimental Investigation of Corroded Steel H-Piles Repaired with Ultra-High Performance Concrete Plates Under Eccentric Axial Compressive Loads (TRBAM-24-05889) - B695

Binod Shrestha/Missouri University of Science and Technology, Mohanad Abdulazeez/Missouri University of Science and Technology, Mohamed ElGawady/Missouri University of Science and Technology



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Building Better Asphalt Pavements

Jason Wielinski, Asphalt Institute, presiding

Sponsored By Standing Committee on Asphalt Pavement Construction and Rehabilitation, Standing Committee on Quality Assurance Management

Performance Evaluation of Cold Recycled Binder Course with Same Day Overlay on Heavy Traffic Expressway (TRBAM-24-04972) - B691

Stephane Charnot/Ingevity Corporation, Rino Effendy Abu Haris/Ingevity Corporation, Nordin Yunus/Ingevity Corporation, Azmi Atan/Ingevity Corporation

Thermal Profiling of Asphalt Pavement Construction Using Uncrewed Aerial Vehicles (TRBAM-24-05269) - B690

Naaga Viswanath Vedula/Arizona State University, Tempe, Masih Beheshti/Arizona State University, Tempe, Othman Al-Alawi/Arizona State University, Tempe, Hasan Ozer/Arizona State University, Tempe

Pilot Studies to Compare Single and Multi-Unit Recycling Trains on Partial Depth (Cold In-Place) Recycling Projects (TRBAM-24-05491) - B693

Stephanus Louw/University of California, Davis, David Jones/University of California, Davis

Effects of Matrix Asphalt Mixture Temperature Prior to Grouting Cement Slurry on Perfusion Rate and Performance for Semi-Flexible Pavement (TRBAM-24-03477) - B682

Jiahao Li/Tongji University, Liping Liu/Tongji University, Lijun Sun/Tongji University

Evaluation of Thick-Lift Paving of Asphalt Concrete (TRBAM-24-06300) - B684

Bryan Wilson/Texas A&M Transportation Institute, Moises Saca/Texas A&M Transportation Institute, Darlene Goehl/Texas A&M Transportation Institute

Study of Existing Pavement Condition Effect on As-Constructed Asphalt Density (TRBAM-24-05853) - B680

Jinwoong Lee/Purdue University, Greeshma Shameema/Purdue University, Kyubung Kang/Purdue University, Jusang Lee/Purdue University

Drying Behavior Modeling of Bitumen Emulsion-Based, Cold, In-Place Recycling Pavement Considering Heat-Moisture Coupling Effects (TRBAM-24-01694) - B686

Jingling Wang/Southeast University, Jiwang Jiang/Southeast University, Zili Zhao/Southeast University, Fujian Ni/Southeast University, Duo Xu/Southeast University, Zhu Zhang/Southeast University

Edge Effect in Dielectric Profiling of Cylindrical Hot Mixed Asphalt Specimens Using Time-of-Flight Method (TRBAM-24-00879) - B681

Heng Liu/Highway Technology Partners LLC, Hoda Azari/Highway Technology Partners LLC, Sadegh Shams/Highway Technology Partners LLC, Nikesh Jose/Highway Technology Partners LLC

Simulation Analysis and Optimization of Temperature Field for Hot-in-Place Recycling of Asphalt Pavement (TRBAM-24-04019) - B678

Zhaocheng Li/Southeast University, DongDong Han/Southeast University, YongLi Zhao/Southeast University

Construction of Resilient Pavement Using Proper Interface Layer and Pavement Solar Collector (TRBAM-24-01927) - B677

Seyed Reza Omrani/Universiteit Antwerpen, Taher Ghalandari/Universiteit Antwerpen, Ermin Djug/Universiteit Antwerpen, Bart Craeye/Universiteit Antwerpen, Cedric Vuye/Universiteit Antwerpen, Wim Van den bergh/Universiteit Antwerpen

Comparative Study of Air and Ground Coupled Systems for Dielectric Constant Estimation of Pavement Using Surface Reflection Method (TRBAM-24-02267) - B688

Ali Fares/Hong Kong Polytechnic University, Tarek Zayed/Hong Kong Polytechnic University, Nour Faris/Hong Kong Polytechnic University, Eslam Abdelkader/Hong Kong Polytechnic University, Sherif Abdelkhalek/Hong Kong Polytechnic University

Comparative Study of Ground-Penetrating Radar Systems with Time Delay Methods for Accurate Pavement Thickness and Dielectric Constant Estimation (TRBAM-24-02228) - B689

Ali Fares/Hong Kong Polytechnic University, Tarek Zayed/Hong Kong Polytechnic University, Nour Faris/Hong Kong Polytechnic University, Sherif Abdelkhalek/Hong Kong Polytechnic University, Eslam Abdelkader/Hong Kong Polytechnic University

Analysis of Alkali Leaching Mechanism on As-Built Cement Concrete Bridge Deck Pavement: View from the Perspective of Mesostructured Characteristics (TRBAM-24-02349) - B687

Bowei Sun/Civil Aviation University of China, Xin Huang/Civil Aviation University of China, Lin Qi/Civil Aviation University of China, Haiwei Zhang/Civil Aviation University of China, Xiaogang Guo/Civil Aviation University of China

(continued)

Segregation Evaluation of Hot Mix Asphalt Mixture Based on 3D Laser Scanning Technology (TRBAM-24-03335) - B685

Man Io Leong/Tongji University, Hui Xiang/Tongji University, Difei Wu/Tongji University, Yuchuan Du/Tongji University, Zihang Weng/Tongji University, Hao Wu/Tongji University

Intelligent Compaction Measurement Values Based Prediction of Non-Nuclear Gauge Density and Temperature Using Extreme Gradient Boosting (TRBAM-24-01878) - B683

Kamal Ahmad/Southeast University, Jiulonghu, Xianhua Chen/Southeast University, Jiulonghu, Adnan Khan/Southeast University, Jiulonghu, Syed Khaliq Shah/Southeast University, Jiulonghu

Determining Asphalt Pavement Milling Best Practices Through Enhanced Understanding of Milling Operations (TRBAM-24-04396) - B692

Kaleigh Miech/University of New Hampshire, Eshan Dave/University of New Hampshire, Jo Sias/University of New Hampshire, Rajib Mallick/University of New Hampshire

Comparison of Three Versus Two Replicates for Testing Bulk Specific Gravity Using AASHTO T 166 and AASHTO T 275 for Asphalt Concrete Specimens Compacted Under AASHTO T 312 (TRBAM-24-04185) - B679

Biplab Bhattacharya/California Department of Transportation, Shweta Jayant/California Department of Transportation, Aemero Hailemichael/California Department of Transportation, Paul Curren/California Department of Transportation, Thomas Carter/California Department of Transportation, Baron Colbert/California Department of Transportation

4032



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Case Studies and Applications on Low-Volume Roads

Victor Garcia, U.S. Army Engineer Research and Development Center, presiding

Laura Fay, Western Transportation Institute (WTI), presiding

Sponsored By Standing Committee on Low-Volume Roads

Innovative Practice for Hard Surfacing Roads to Improve Rural Connectivity and Optimize Road Networks (TRBAM-24-00077) - B663

Steven Latoski/Mohave County Public Works

Effectiveness of Speed Management Measures on Rural Roads: Bangladesh Insights (TRBAM-24-03513) - B664

Md Asif Raihan/Bangladesh University of Engineering and Technology, S. M. Sohel Mahmud/Bangladesh University of Engineering and Technology, Shahnewaz Hasanat-E-Rabbi/Bangladesh University of Engineering and Technology, Md. Imran Uddin/Bangladesh University of Engineering and Technology, Nazmul Haque/Bangladesh University of Engineering and Technology, Sudeshna Mitra/Bangladesh University of Engineering and Technology, Natalya Stankevich/Bangladesh University of Engineering and Technology

A New Pavement Condition Assessment System for Local Roads and Its Application (TRBAM-24-04105) - B665

Shajib Guha/City of Toronto - Transportation Services, Kamal Hossain/City of Toronto - Transportation Services

4033



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Landscape and Environmental Design

Jeffrey Lormand, Parsons, presiding
Ellen White, State University of New York, ESF, presiding
Christine Colley, New York State Department of Transportation, presiding
William Riggs, University of San Francisco, presiding
Richard Record, RL RECORD LLC Consultants, presiding

Sponsored By Standing Committee on Landscape and Environmental Design, Standing Committee on Roadside Maintenance Operations

The Landscape and Environmental Design Committee - AKD40, effectively influences transportation policy and practice through the development, distribution and support of transportation research. The committee focuses on design parameters that relate to protection, conservation, restoration and enhancement of transportation systems, facilities, and their associated environments. The Committee is specifically concerned with:

- Researching how to integrate transportation facilities into their settings
- Creating a visually pleasing travel experience for all who live, work, and travel
- Conserving natural elements
- Preserving cultural and historic resources
- Maintaining aesthetic and scenic quality
- Identifying and preserving scenic opportunities

Landscape and Environmental Design (P24-20013) - B652

Christine Colley/New York State Department of Transportation, Raymond Willard/Washington State Department of Transportation

New York State Department of Transportation Pollinator Initiative (P24-20017) - B654

Christine Colley/New York State Department of Transportation, Peter Dunleavy/New York State Department of Transportation

New York State Department of Transportation Reforestation Initiative: Rapid Growth (Mini-Forest): Region 10 (Long Island) (P24-20123) - B655

Ken Murphy/New York State Department of Transportation, Robb Smith/New York State Department of Transportation, Phyllis Elgut/New York State Department of Transportation

Urban Polder Landscape in East Harlem, New York City (P24-20124) - B656

Zihao Zhang/City College of New York, Shurui Zhang/Office of Speculative Ecologies

How Complete Is Your Street? (P24-20125) - B657

Jeff Lackey/North Carolina Department of Transportation

Landscape-Scale Considerations in Improved Urban Area Environmental Performance and Outcomes for a Transportation Mega Project in Progressive Design-Build Delivery (P24-20794) - B653

Richard Record/RL RECORD LLC Consultants

4034



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Insights in the Advancement of Hydrology, Hydraulics, and Stormwater Research

Andrew McDaniel, North Carolina Department of Transportation, presiding
Sponsored By Standing Committee on Hydrology, Hydraulics, and Stormwater

Optimization of Sediment Basin Configurations (P24-21387) - B667

Megan Armstrong

Maximizing Performance: Large-Scale Testing of an In-Channel Sediment Basin Design (P24-21390) - B659

Jaime Schussler/Oklahoma State University

Approaches for Assessing Flows, Concentrations, and Loads of Highway and Urban Runoff and Receiving-Stream Stormwater in Southern New England with the Stochastic Empirical Loading and Dilution Model (P24-21433) - B668

Alana Spaetzel/U.S. Geological Survey, Gregory Granato/Federal Highway Administration (FHWA)



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Electric Vehicles and Charging Infrastructure: Impacts and Trends

Roy Sturgill, Iowa State University, presiding

Sponsored By Standing Committee on Utilities

Vehicle-to-Grid Enabled Charging Infrastructure Planning and Operations Considering Demand Uncertainties (TRBAM-24-01746) - B672

Zhenning Niu/Tongji University, Kun An/Tongji University, Wanjing Ma/Tongji University

Vehicle-to-Grid Enables Profitable Wind and Solar Capacity Expansion But Can Increase Greenhouse Gas Emissions Unless Renewable Energy Capacity Is Substantial (TRBAM-24-02251) - B673

Jiahui Chen/University of Michigan, Ann Arbor, Parth Vaishnav/University of Michigan, Ann Arbor, Michael Craig/University of Michigan, Ann Arbor, Jeremy Michalek/University of Michigan, Ann Arbor

Enhancing Electric Vehicle Charging Management with Long Short-Term Memory–Based Prediction of Non-Critical Charging Sessions and Renewable Energy Integration (TRBAM-24-02581) - B674

Hanif Tayarani/University of California, Davis, Vaishnavi Karanam/University of California, Davis, Christopher Nitta/University of California, Davis, Gil Tal/University of California, Davis

Modeling the Impacts of Incorporating Mobile Charging Services into Urban Electric Vehicle Charging Network Using an Agent-Based Approach (TRBAM-24-03100) - B675

Bingkun Chen/Monash University, Zhuo Chen/Monash University, Xiaoyue Liu/Monash University

Impact Analysis of Residential Electric Vehicle Charging Based on Coordinated Load Profile Generation (TRBAM-24-03398) - B662

Han Wang/Imperial College London, Fangce Guo/Imperial College London, Aruna Sivakumar/Imperial College London



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Student Research on Emerging Concrete Technologies

Hee Jeong Kim, University of Arizona, presiding

Dan Huang, Coastal Carolina University, presiding

Sponsored By Standing Committee on Advanced Concrete Materials and Characterization

Early-Age Shrinkage Behavior of Ultra-High Performance Concrete (TRBAM-24-00155) - A210

Pedram Ghassemi/Ohio State University, Garrett Tatum/Ohio State University, Natassia Brenkus/Ohio State University

Calcined Clays as Alternative Supplementary Cementitious Material in Concrete (TRBAM-24-04576) - A223

Marwa Hassan/Louisiana State University, Adriana de los Angeles Alvarado Ramirez/Louisiana State University, Sujata Subedi/Louisiana State University, Hassan Noorvand/Louisiana State University, Ruwa AbuFarsakh/Louisiana State University, Oscar Huang/Louisiana State University, Miladin Radovic/Louisiana State University

Feasibility Assessment of Utilization of Used Automobile Tire in Concrete (TRBAM-24-04840) - A212

Abu Akid/Arkansas State University, Zahid Hossain/Arkansas State University

Sustainable High-Strength and Ultra-High Strength Engineered Cementitious Composites with Substitution of Fly Ash by Alternative Supplementary Cementitious Materials (TRBAM-24-05331) - A213

Daniel Game/Louisiana State University, Adriana de los Angeles Alvarado Ramirez/Louisiana State University, Ilerioluwa Giwa/Louisiana State University, Hassan Noorvand/Louisiana State University, Marwa Hassan/Louisiana State University, Louay Mohammad/Louisiana State University

Evaluating Bond Strength and Chloride Ion Permeability of Concrete–Grout Interfaces (TRBAM-24-05513) - A211

Anthony Addai Boateng/Ohio State University, Garrett Tatum/Ohio State University, Natassia Brenkus/Ohio State University

4037



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Cementitious Materials and Concrete Properties and Technologies

Gabriel Arce, Virginia Department of Transportation, presiding

John Kevern, University of Missouri, Kansas City, presiding

Sponsored By Standing Committee on Advanced Concrete Materials and Characterization

Advances in Cementitious Materials, Admixtures, Tests, and Specifications in Virginia (TRBAM-24-00146) - A233

H. Celik Ozyildirim/Virginia Department of Transportation, Mary Sharifi/Virginia Department of Transportation

Sugarcane Bagasse Ash as a Potential Cementitious Material in Portland Cement Concrete (TRBAM-24-00672) - A221

Jumana Ali/American University in Cairo, Seif Naguib/American University in Cairo, Ahmed Bayoumi/American University in Cairo, Maram Saoudy/American University in Cairo, Mohamed Abou-Zeid/American University in Cairo

Sustainability Index: A Portland Cement Concrete Mix Selection Tool (TRBAM-24-01368) - A220

Maya Ghataty/Ball State University, Malak Soliman/Ball State University, Tahani Abdelaziz/Ball State University, Kareem Shehab/Ball State University, Karim Omran/Ball State University, Mayer Farag/Ball State University, Reem Gamal/Ball State University, Yosra El Maghraby/Ball State University, Tamer Breakah/Ball State University, Mohamed Abou-Zeid/Ball State University

Improving the Interfacial Bonding Between Steel Fiber and Cement Mortars Using a Bio-Inspired Functionalization (TRBAM-24-02506) - A231

Jianming Ling/Tongji University, Jiading, Heng Yang/Tongji University, Jiading, Xin Qian/Tongji University, Jiading, Chenguang Jia/Tongji University, Jiading, Fan Yang/Tongji University, Jiading, Mengxiao Li/Tongji University, Jiading

Enhancing the Mechanical Properties of Metakaolin-Based Engineered Geopolymer Composites Through Fiber Treatment (TRBAM-24-03800) - A222

Ruwa AbuFarsakh/Louisiana Department of Transportation and Development, Hassan Noorvand/Louisiana Department of Transportation and Development, Adriana de los Angeles Alvarado Ramirez/Louisiana Department of Transportation and Development, Gabriel Arce/Louisiana Department of Transportation and Development, Marwa Hassan/Louisiana Department of Transportation and Development, Sujata Subedi/Louisiana Department of Transportation and Development, Zhen Sang/Louisiana Department of Transportation and Development, Svetlana Sukhishvili/Louisiana Department of Transportation and Development

Development of Ultra-High Performance Concrete with Limestone Calcined Clay Based Binder: A Feasibility Study (TRBAM-24-04347) - A232

Qian Zhang/FAMU-FSU College of Engineering, Emily Mank/FAMU-FSU College of Engineering

Study on the Engineering Properties and Expansion Mechanisms of FGDA Cementitious Materials (TRBAM-24-06332) - A230

Ziyue Zhou/Southeast University, Ying Gao/Southeast University, Shaoquan Wang/Southeast University, Zhuoran Li/Southeast University, Yingsong Li/Southeast University, Ziyao Wei/Southeast University, Tianshuo Zhang/Southeast University, Zeqi Chen/Southeast University, YongLi Zhao/Southeast University

4038



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

What Is New with Concrete Durability Research

Gina Ahlstrom, Federal Highway Administration (FHWA), presiding

Sponsored By Standing Committee on Durability of Concrete

This is an opportunity to engage with researchers and discuss recent concrete durability work. This session features a variety of topics impacting concrete durability including materials related distresses and various types concrete mixtures.

The Effect of Internal Curing Using Saturated Lightweight Aggregate on Calcium Sulfoaluminate Cement Concrete Shrinkage and Freezing-Thawing Resistance (TRBAM-24-00853) - A251

Christopher Jones/Kansas State University, Faisal Qadri/Kansas State University, Ragini Nikumbh/Kansas State University

(continued)

Assessment of Durability and Performance of Rapid Setting Concrete Used in Accelerated Bridge Construction (TRBAM-24-04325) - A250

Spencer McKinnon/University of New Hampshire College of Engineering and Physical Sciences, Eshan Dave/University of New Hampshire College of Engineering and Physical Sciences, Jo Sias/University of New Hampshire College of Engineering and Physical Sciences, Saeed Azam/University of New Hampshire College of Engineering and Physical Sciences

Pozzolanic Reactivity of High-Alkali Supplementary Cementitious Materials and Its Impact on the Mitigation of Alkali-Silica Reaction (TRBAM-24-05649) - A240

Weiqi Wang/Clemson University, James Roberts/Clemson University, Prasad Rangaraju/Clemson University

Use of Lightweight Concretes with Different Densities (TRBAM-24-00203) - A243

H. Celik Ozyildirim/Virginia Department of Transportation, Mary Sharifi/Virginia Department of Transportation, Hari Krishnan Nair/Virginia Department of Transportation

Quantitative Assessment and Validation of Freeze-Thaw Durability of Reclaimed Asphalt Pavement Concrete Mixes (TRBAM-24-00355) - A242

Sarah Abraham/IIT Jammu: Indian Institute of Technology Jammu, Gaurav Tiwari/IIT Jammu: Indian Institute of Technology Jammu, Pawan Saini/IIT Jammu: Indian Institute of Technology Jammu

Correlation Between Two Non-Destructive Health Monitoring Tools: Maturity and Electrical Resistivity (TRBAM-24-00388) - A241

Pratanu Ghosh/California State University, Fullerton, Rajthilak Ganesan/California State University, Fullerton, Quang Tran/California State University, Fullerton

4039



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Influence and Evaluation of Microstructural, Mineralogical, and Physical Characteristics of Aggregates

Matthew Hinck, CalPortland Company, presiding

Sponsored By Standing Committee on Aggregates, Standing Committee on Binders for Flexible Pavement, Joint Subcommittee on Unbound Granular Materials (with AKG00)

Microstructural Measurement of the Pore Size and Volume Distribution of Bentonite at Two Different Hydraulic States Utilizing Different Drying Techniques (TRBAM-24-05457) - B643

Nilufar Chowdhury/University of Louisville, Omid Ghasemi-Fare/University of Louisville

The Effect of Polishing Duration and Mineralogical Composition on the Microtexture and Polishing Resistance to Emery Projection (TRBAM-24-05058) - B642

Mbayang Kandji/Université Laval, Benoit Fournier/Université Laval, Josée Duchesne/Université Laval, Félix Doucet/Université Laval

Characteristics of Unbound Aggregate Moduli at Various Strain Levels (TRBAM-24-04882) - B645

Mingu Kang/University of Illinois, Urbana-Champaign, Han Wang/University of Illinois, Urbana-Champaign, Yong-Hoon Byun/University of Illinois, Urbana-Champaign, Issam Qamhia/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign, Navneet Garg/University of Illinois, Urbana-Champaign, Jeb Tingle/University of Illinois, Urbana-Champaign

Investigation of the Skeleton Composition of the Wearing Layer on the Surface Texture Based on Discrete Element Method (TRBAM-24-02026) - B641

Xiyin Liu/Southeast University School of Transportation, Bu Tianxiang/Southeast University School of Transportation, Siyu Chen/Southeast University School of Transportation, Tao Ma/Southeast University School of Transportation, Xiaodong Zhou/Southeast University School of Transportation, Haoyuan Luo/Southeast University School of Transportation, Can Chen/Southeast University School of Transportation

Effect of Composition on the Homogeneity of Particle Distribution in Aggregate Blends (TRBAM-24-01413) - B651

Weixiao Yu/University of Science and Technology Beijing, Sudi Wang/University of Science and Technology Beijing, Zhenlong Gong/University of Science and Technology Beijing, Yinghao Miao/University of Science and Technology Beijing

Influence of Coarse Aggregate Morphology on the Pore Structures in Porous Asphalt Concrete (TRBAM-24-00481) - B650

Yang Liu/Southeast University, Zhendong Oian/Southeast University

The Influence of Aggregate Mineralogy and Chemical Properties on Imaging-Based Morphological Shape Indices (TRBAM-24-02485) - B644

Maziar Moaveni/Savannah State University, Brice Lacroix/Savannah State University, Craig Lundstrom/Savannah State University, Miles Wilford/Savannah State University, Akili Gonzales/Savannah State University

(continued)

Microtexture Characterization of Bulk Aggregate Samples for Application in High-Friction Surface Treatments (TRBAM-24-02162) - B640

Kyle Maeger/Clemson University, Adam Biehl/Clemson University, Prasad Rangaraju/Clemson University

4040



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Novel and Enhanced Laboratory-Based Evaluations of Aggregates in Road Construction

Karl Fletcher, Bowser-Morner, Inc., presiding

Sponsored By Standing Committee on Aggregates, Standing Committee on Binders for Flexible Pavement

Enhanced Imaging Analysis Evaluation of Crushed Stones and Ferro Slags for Road and Railway Applications (TRBAM-24-02459) - B646

Joseph Anochie-Boateng/University of Pretoria, Gculisile Mvelase/University of Pretoria, Maziar Moaveni/University of Pretoria

Quantitative Evaluation of Asphalt Blending Characteristics in Epoxy-Modified Hot Recycled Asphalt Mixtures Based on 3D Confocal Fluorescence Technology (TRBAM-24-02192) - B647

Zijian Zhang/Southeast University, Long Cheng/Southeast University, Long Cheng/Southeast University

A Preliminary Study of the Fine Scale Damage Characteristics of Pavement Surface Aggregate Under the Effect of Tire Wear (TRBAM-24-01706) - B648

Miao Yu/Chongqing Jiaotong University, Zhi Yang/Chongqing Jiaotong University, Geng Chen/Chongqing Jiaotong University, Zhanping You/Chongqing Jiaotong University, Liming Yang/Chongqing Jiaotong University, Jue Li/Chongqing Jiaotong University, Jia Peng/Chongqing Jiaotong University

Laboratory-Based Evaluation of Properties of Typical Aggregates and Their Influence on Friction Performance (TRBAM-24-00522) - B649

Xiaoqiang Hu/Purdue University, Jieyi Bao/Purdue University, Yi Jiang/Purdue University, Shuo Li/Purdue University

4041



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advancements in Winter Maintenance Technologies

Anna Arvidsson, Swedish National Road and Transport Research Institute (VTI), presiding

Sponsored By Standing Committee on Winter Maintenance, Standing Committee on Road Weather

Using Explainable Artificial Intelligence for Enhanced Understanding of Winter Road Safety: Insights with Support Vector Machines and SHAP (TRBAM-24-01390) - B714

Zehua Shuai/University of Alberta, Tae Kwon/University of Alberta, Qian Xie/University of Alberta

Developing a Prototype of a Digital Twin for Winter Road Maintenance (TRBAM-24-04940) - B710

Yasuhiro Nagata/Hokkaido Development Engineering Center, Toru Hagiwara/Hokkaido Development Engineering Center, Sho Takahashi/Hokkaido Development Engineering Center, Masahiro Yagi/Hokkaido Development Engineering Center, Genki Ooi/Hokkaido Development Engineering Center

A Winter Pavement Temperature Prediction Model Based on Transfer Learning and Long- and Short-Term Memory Neural Networks (TRBAM-24-02117) - B705

Shumin Bai/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Bingyou Dai/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Zhen Yang/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Wenchen Yang/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Yuwei Fang/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Feng Zhu/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention

Enhancing Winter Road Maintenance with Explainable Artificial Intelligence: SHAP Analysis for Interpreting Machine Learning Models in Road Friction Estimations (TRBAM-24-02450) - B716

Xueru Ding/University of Alberta, Tae Kwon/University of Alberta

Winter Maintenance Multi-Spectral Performance Evaluation: Salt Brine Versus Solid Salt Applications (TRBAM-24-04150) - B711

Boris Claros/University of Wisconsin, Madison, Cesar Andriola/University of Wisconsin, Madison, Madhav Chitturi/University of Wisconsin, Madison, Andrea Bill/University of Wisconsin, Madison, David Noyce/University of Wisconsin, Madison

(continued)

Implementation of Salt Stockpile Inventory Using LiDAR Measurements (TRBAM-24-04140) - B712

Justin Mahlberg/Purdue University, Haydn Malackowski/Purdue University, Mina Joseph/Purdue University, Yerassyl Koshan/Purdue University, Raja Manish/Purdue University, Zach DeLoach/Purdue University, Ayman Habib/Purdue University, Darcy Bullock/Purdue University

Multi-Functionalization of Rumble Strips for Improving Snowplow Resistance of Retroreflective Pavement Markers (TRBAM-24-04855) - B713

Savitha Srinivasan/University of Texas, Austin, Md Al Amin/University of Texas, Austin, Mike Rung/University of Texas, Austin, Raissa Ferron/University of Texas, Austin

4042



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Advancements in Road Weather Management

Shawn Truelson, DTN, LLC, presiding

Joshua Seeherman, Remington & Vernick Engineers, presiding

Sponsored By Standing Committee on Road Weather

Given the many ways that weather affects the transportation system, there are an equal number of research topics that study them. This poster session presents several studies that explore ways that the community is improving the operation and maintenance of the system under a variety of weather impacts.

Predicting Winter Road Surface Conditions Using a Data-Driven Approach (TRBAM-24-02960) - B708

Jeswin Wilson/Cornell University, Bo Yuan/Cornell University, Ali Amadeh/Cornell University, David Orr/Cornell University, Ke Zhang/Cornell University

Assessment of Desired Speeds of Drivers with Changing Fog Levels (TRBAM-24-03524) - B703

Angshuman Pandit/IIST Shibpur: Indian Institute of Engineering Science and Technology, Anuj Budhkar/IIST Shibpur: Indian Institute of Engineering Science and Technology

Frost-Induced Black Ice Prediction Using Atmospheric Data (TRBAM-24-00002) - B709

Jinhwan Jang/Korea Institute of Civil Engineering and Building Technology (KICT)

Exploring the Impacts of the Intelligent Information System on Travel Choices in Winter Weather: A

Reveal-Preference Survey Preliminary Study (TRBAM-24-00170) - B704

Gongda Yu/University at Buffalo, SUNY, Jiajun Pang/University at Buffalo, SUNY, Irina Benedyk/University at Buffalo, SUNY

Impact of Weather and Solar Glare on Pedestrian Crashes (TRBAM-24-00701) - B702

David Sathiaraj/Trabus Technologies, Minh Le/Trabus Technologies, Michael Pratt/Trabus Technologies, Eric Rohli/Trabus Technologies, James Cline, Jr./Trabus Technologies

Weather Event Characterization: A Catalyst for Improved Spatial Mapping and Benefit Quantification in Winter Road Maintenance (TRBAM-24-01073) - B707

Mingjian Wu/University of Alberta, Tae Kwon/University of Alberta

Lane-Level Joint Control of Off-Ramp and Main Line Speed Guidance on Expressways in Rainy Weather (TRBAM-24-01802) - B701

Boyao Peng/Chang'an University, Lexing Zhang/Chang'an University, Enkai Li/Chang'an University

Research on the Influence of Nighttime Rainfall on Traffic Visual Distance (TRBAM-24-01939) - B700

Qingyun Cao/Beijing University of Technology, Jiangbi Hu/Beijing University of Technology, Ronghua Wang/Beijing University of Technology

Strategic Planning for Equitable Road Weather Information System Implementation: A Comprehensive Study Incorporating a Multi-Variable Semivariogram Model (TRBAM-24-02171) - B706

Simita Biswas/University of Alberta, Tae Kwon/University of Alberta

4043



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Extreme Weather and Climate Change Adaptation Research Activities

Tom Wall, Argonne National Laboratory, presiding

Sponsored By Standing Committee on Extreme Weather and Climate Change Adaptation

Building Rail System Resilience: A Framework for Incorporating Vulnerability Assessments and Hazard-Specific Adaptation into Planning (TRBAM-24-04435) - A140

Adair Garrett/Georgia Institute of Technology, Tom Wall/Georgia Institute of Technology, Michael Johnsen/Georgia Institute of Technology

Existing Natural and Nature-Based Features for Current and Future Coastal Road Protection Framework and New Hampshire Case Study (TRBAM-24-03592) - A143

Lauren Dwyre/University of New Hampshire, Jennifer Jacobs/University of New Hampshire, Eshan Dave/University of New Hampshire, Alyson Eberhardt/University of New Hampshire, Jo Sias/University of New Hampshire

Resiliency in Pavement Geotechnics: A Practice Review of State Transportation Agencies (TRBAM-24-04393) - A153

Syed Husain/University of Illinois, Urbana-Champaign, Robert Wiggins/University of Illinois, Urbana-Champaign, Youngdae Kim/University of Illinois, Urbana-Champaign, Yusra Alhadidi/University of Illinois, Urbana-Champaign, Erol Tutumluer/University of Illinois, Urbana-Champaign

Comparison of Static and Dynamic Traffic Assignment Models in the Evaluation of Disruptive Precipitation Impacts on Surface Transportation: A Behavioral Validation Study (TRBAM-24-04914) - A142

Raif Bucar/Rutgers University, New Brunswick, Ramin Talebi Khameneh/Rutgers University, New Brunswick, Yeganeh Hayeri/Rutgers University, New Brunswick

Automated Floodwater Extent Detection on Roadways from Video Using Edge Analysis (TRBAM-24-05338) - A150

Behrouz Salahshour/Old Dominion University, Mecit Cetin/Old Dominion University, Khan Iftekharuddin/Old Dominion University

Beyond the Storm: Advancing a Holistic Approach to Understand the Relationship Between Disaster Challenges and Behaviors in Shaping Hurricane Experiences (TRBAM-24-05701) - A141

Jiayun Shen/Clemson University, Emilia Ptak/Clemson University, Pamela Murray-Tuite/Clemson University

A Modeling Framework for Exploring Resilience Patterns of Road Traffic Systems Under Rainfall Disturbances (TRBAM-24-00747) - A151

Wei Gao/Harbin Institute of Technology, Yaxin Wu/Harbin Institute of Technology, Naihui Wang/Harbin Institute of Technology, Xiaowei Hu/Harbin Institute of Technology

Modeling Link-Level Road Traffic Resilience to Extreme Weather Events Using Crowdsourced Data (TRBAM-24-02083) - A163

Songhua Hu/University of Maryland, College Park, Kailai Wang/University of Maryland, College Park, Lingyao Li/University of Maryland, College Park, Yingrui Zhao/University of Maryland, College Park, Zhengbing He/University of Maryland, College Park, Yunpeng Zhang/University of Maryland, College Park

Multi-Scale Vulnerability Analysis for Transportation Electrification Under Extreme Weather Events (TRBAM-24-02089) - A152

Ning Zhang/University of California, Los Angeles, Yu-chen Chu/University of California, Los Angeles, Qinhua Jiang/University of California, Los Angeles, Brian He/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

Fragility Framework of Highway Embankment's Slope Stability Under Climate Change-Induced Extreme Rainfall Patterns (TRBAM-24-02426) - A162

Ege Kurter/University of South Carolina, Mohammad Sadik Khan/University of South Carolina, Laura Micheli/University of South Carolina, Austin Downey/University of South Carolina, Jasim Imran/University of South Carolina

Crisis Communication of Public Agencies in Twitter: A Case Study of Hurricane Irma Exploring the Relationship Between Topics and Engagement (TRBAM-24-02875) - A172

Tasuba Binte Jamal/University of Central Florida, Aidan Rogers/University of Central Florida, Samiul Hasan/University of Central Florida

Spatial Accessibility of Hurricane Shelters: A Case Study of Hurricane Michael with Sea Level Rise Consideration (TRBAM-24-02964) - A183

Jieya Yang/Florida State University, Onur Alisan/Florida State University, Mengdi Ma/Florida State University, Linoj Vijayan/Florida State University, Wenrui Huang/Florida State University, Eren Ozguven/Florida State University

Exploring the Impact of Extreme Weather on Urban Road Network Based on Percolation Theory (TRBAM-24-02965) - A173

Zhen Chen/Tongji University, Yingying Xing/Tongji University, Kexin Fang/Tongji University, Hong Lang/Tongji University

Resilience Analysis of Urban Multi-Mode Transportation Systems Under Extreme Conditions of Rainstorms Within Rush Hour (TRBAM-24-04015) - A193

Yilin Hong/Shanghai Jiao Tong University, Xinyi Fang/Shanghai Jiao Tong University, Ziwen Wang/Shanghai Jiao Tong University, Linjun Lu/Shanghai Jiao Tong University

(continued)

Critical Shelter Analysis in Northwest Florida Using Social Vulnerability and Accessibility Based on Uncertain Hurricane Tracks (TRBAM-24-04278) - A182

Jieya Yang/Florida State University, Onur Alisan/Florida State University, Linoj Vijayan/Florida State University, Wenrui Huang/Florida State University, Eren Ozguven/Florida State University

Effects of Climate Change on Future Yearly Cycling Demand in Canadian Cities (TRBAM-24-04439) - A192

Eduardo Adame Valenzuela/McGill University, Luis Miranda-Moreno/McGill University, Van-Thanh-Van Nguyen/McGill University, Chenglong You/McGill University

Data-Driven Quantification of the Resilience of Enforcement Policies on Transportation Systems: A Comparative Study of Two Major Winter Storms in Buffalo, New York (TRBAM-24-05191) - A203

Eren Kaval/New York University, Zilin Bian/New York University, Kaan Ozbay/New York University

Bus Bridging Planning for Massive Subway Passenger Flow Under Various Rainfall Scenarios (TRBAM-24-05286) - A202

Sanghuiyu Yan/Tongji University, Rui Ma/Tongji University, Pengju Ren/Tongji University, Jian Li/Tongji University

Hot and Bothered: Exploring the Effect of Heat on Pedestrian Behavior and Accessibility (TRBAM-24-05927) - A201

Rounaq Basu/Massachusetts Institute of Technology, Nicola Colaninno/Massachusetts Institute of Technology, Abdulaziz Alhassan/Massachusetts Institute of Technology, Andres Sevtsuk/Massachusetts Institute of Technology

Urban Heat Risk Assessment: Exploring a Novel Pedestrian Network-Based Framework (TRBAM-24-05949) - A200

Nicola Colaninno/Massachusetts Institute of Technology, Rounaq Basu/Massachusetts Institute of Technology, Maryam Hosseini/Massachusetts Institute of Technology, Abdulaziz Alhassan/Massachusetts Institute of Technology, Liu Liu/Massachusetts Institute of Technology, Andres Sevtsuk/Massachusetts Institute of Technology

4044



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Electric, Automated, and Autonomous Bus Planning, Design, and Operations

Chun-Hung "Peter" Chen, Santa Clara Valley Transportation Authority (VTA), presiding

Yi Deng, MTA New York City Transit, presiding

Sponsored By Standing Committee on Bus Transit Systems

Research in the areas of electric bus fleet and design; autonomous bus fleet and design, including modular and connected public transit schemes.

Zero-Emission Bus Fleet: An Optimization Model for Electric Bus Charging Station Location (TRBAM-24-05050) - B570

Zahra Vafakhah/HDR, Mohammad Jalayer/HDR, Jie Li/HDR, Thomas Brennan/HDR

Optimizing In-Garage Charging Schedules to Maximize Electrified Mileage for Electric Bus Fleets (TRBAM-24-04667) - B562

Yen-Chu Wu/Massachusetts Institute of Technology, Xiaotong Guo/Massachusetts Institute of Technology, Jinhua Zhao/Massachusetts Institute of Technology

Yen-Chu Wu/Massachusetts Institute of Technology, Xiaotong Guo/Massachusetts Institute of Technology, Jinhua Zhao/Massachusetts Institute of Technology

Evolving School Transportation: A Comprehensive Approach to Bus Electrification with Dynamic Route Optimization and Partial Charging for Mixed Fleets (TRBAM-24-06149) - B601

Megh Bahadur KC/University at Buffalo, SUNY, Ziqi Song/University at Buffalo, SUNY

Online Energy Consumption Forecast for Battery Electric Buses: A Learning-Free Method Based on Algebraic Derivative Estimation (TRBAM-24-02921) - B563

Ruixiao Sun/Oak Ridge National Laboratory, Guanhao Xu/Oak Ridge National Laboratory, Zejiang Wang/Oak Ridge National Laboratory, Anye Zhou/Oak Ridge National Laboratory, Adian Cook/Oak Ridge National Laboratory, Yuche Chen/Oak Ridge National Laboratory

Subsidy Policies Toward Zero-Emission Bus Fleets: A Systematic, Techno-Economic Analysis (TRBAM-24-03349) - B564

Zhuowei Wang/Hong Kong Polytechnic University, Jiangbo Yu/Hong Kong Polytechnic University, Anthony Chen/Hong Kong Polytechnic University, Xiaowen Fu/Hong Kong Polytechnic University

Cost-Optimal Charging Strategies for Electric Bus Fleets Considering Battery Degradation and Nonlinear Charging (TRBAM-24-02715) - B572

Kun Jin/Southeast University, Wei Wang/Southeast University, Xinran Li/Southeast University, Xuedong Hua/Southeast University

(continued)

Optimization of Electric Bus Fleet Scheduling and Dynamic Charging Considering Battery Degradation (TRBAM-24-05822) - B573

Yiping Gao/Southeast University, Hao Yu/Southeast University

A Hybrid, Online Approach for Predicting the Energy Consumption of Electric Buses Based on Vehicle Dynamics and System Identification (TRBAM-24-01148) - B574

Wenpeng Fang/Chang'an University, Zhenzhen Ge/Chang'an University, Yingjiu Pan/Chang'an University, Caifeng Wang/Chang'an University, Baochang Guo/Chang'an University

Energy Efficiency and Performance Analysis of Electric Buses in Central Florida (TRBAM-24-06104) - B583

MdRezwan Hossain/University of Central Florida, Arjun Babuji/University of Central Florida, MD Hasibul Hasan/University of Central Florida, Hatem Abou-Senna/University of Central Florida, Haofei Yu/University of Central Florida

A Multi-Objective Algorithm for the In-Motion-Charging Transit Route Network Design Problem (TRBAM-24-00199) - B584

Christina Iliopoulou/National Technical University of Athens (NTUA), Ioannis Tassopoulos/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA)

A Multi-Group Analysis of the Impact of Transit Electrification on the Intentions to Use Public Transit: An Extension of the Theory of Planned Behavior (TRBAM-24-01253) - B600

Prasanna Humagain/Metro Analytics, Konstantinos Flaris/Metro Analytics, Konstantina Gkritza/Metro Analytics, Patrick Singleton/Metro Analytics, Ziqi Song/Metro Analytics

Planning Dynamic Wireless Charging Infrastructure for Battery Electric Bus Systems with the Joint Optimization of Charging Scheduling (TRBAM-24-03680) - B592

Wenlong Li/Massachusetts Institute of Technology, Yi He/Massachusetts Institute of Technology, Songhua Hu/Massachusetts Institute of Technology, Zhengbing He/Massachusetts Institute of Technology

Charging Scheduling Coordination of Buses and Passenger Cars at Bus Depots (TRBAM-24-03350) - B611

Zuoning Jia/Tongji University, Kun An/Tongji University, Wanjing Ma/Tongji University

Data-Driven Prediction of E-Bus Battery Consumption Rates Using Machine Learning Techniques in the Canadian Environment (TRBAM-24-04253) - B610

Kareem Othman/University of Toronto, Diego Da Silva/University of Toronto, Amer Shalaby/University of Toronto, Baher Abdulhai/University of Toronto

Bus Fleet Decarbonization Under Macroeconomic and Technological Uncertainties: A Real Option Approach to Support Decision Making (TRBAM-24-00809) - B593

Daniele De Santis/Sapienza University, Rome, Alessandro Avenali/Sapienza University, Rome, Mirko Giagnorio/Sapienza University, Rome, Giorgio Matteucci/Sapienza University, Rome

Assigning Vehicle and Charging Resources Based on Optimized Electric Bus Scheduling Considering Partial Charging and Battery Degradation (TRBAM-24-01152) - B602

Chenming Niu/University of California, Berkeley, Quizi Chen/University of California, Berkeley, Ran Tu/University of California, Berkeley

A Rule-Based, Energy-Saving Driving Strategy for Battery Electric Bus at Signal Intersection (TRBAM-24-01228) - B603

Bingyan Xie/Southeast University, Tiezhu Li/Southeast University, Ran Tu/Southeast University, Haibo Chen/Southeast University

Integrated Optimization of Battery Electric Bus Scheduling and Charging Scheduling Considering Time-of-Use Electricity Price (TRBAM-24-01676) - B614

Jie Xiong/Beijing University of Technology, Jingjing Liang/Beijing University of Technology, Songpo Yang/Beijing University of Technology, Tongfei Li/Beijing University of Technology

Scheduling Optimization of Modular Autonomous Transit in Multi-Line Operation Mode (TRBAM-24-06432) - B594

Yixuan Bao/Beijing Jiaotong University, Xumei Chen/Beijing Jiaotong University, Ming Wang/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Integrated Optimization of Timetable, Bus Formation, and Vehicle Scheduling in Autonomous Modular Public Transport Systems (TRBAM-24-01498) - B604

Siyu Zhuo/Beijing Jiaotong University, Xiaoning Zhu/Beijing Jiaotong University, Pan Shang/Beijing Jiaotong University, Zhengke Liu/Beijing Jiaotong University

A Joint Factor and Latent Class Ordered Probit Analysis of the Intention to Use Unstaffed Automated Buses (TRBAM-24-01377) - B605

Achille Fonzone/Aristotle University of Thessaloniki, Grigorios Fountas/Aristotle University of Thessaloniki, Lucy Downey/Aristotle University of Thessaloniki, Anshamol Rahim/Aristotle University of Thessaloniki

Joint Control of Connected and Autonomous Buses and Signal Timing with Heterogeneous Flow Stability and Punctuality (TRBAM-24-04530) - B613

Lichao Wang/Chalmers University of Technology, Jiaming Wu/Chalmers University of Technology, Min Yang/Chalmers University of Technology, Ziyi Zhou/Chalmers University of Technology, Fan Jiang/Chalmers University of Technology

Modeling Connected and Autonomous Buses on the Dynamics of Mixed Traffic in Partial Connected and Automated Traffic Environments (TRBAM-24-01618) - B612

Tianqi Wang/Dalian Maritime University, Weihai Xu/Dalian Maritime University, Huaiyue Li/Dalian Maritime University, Yun Yuan/Dalian Maritime University, Xin Li/Dalian Maritime University

Jointly Optimization of Passenger Route Assignment and Transfer Incentivization Scheme for a Customized Modular Bus System (TRBAM-24-01002) - B582

Jianbiao Wang/Nagoya University - Higashimaya Campus: Nagoya Daigaku, Tomio Miwa/Nagoya University - Higashimaya Campus: Nagoya Daigaku, Takayuki Morikawa/Nagoya University - Higashimaya Campus: Nagoya Daigaku

4045



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Bus Transit Systems Planning, Design, Technology, and Operations

Chun-Hung "Peter" Chen, Santa Clara Valley Transportation Authority (VTA), presiding
Yi Deng, MTA New York City Transit, presiding

Sponsored By Standing Committee on Bus Transit Systems

Bus Passenger Origin-Destination Flow Estimation Using Entry-Only Smartcard Data: A Self-Supervised Learning Method Without Ground Truth (TRBAM-24-00007) - B622

Yun Yuan/University of Utah, Zheng Tan/University of Utah, Xin Li/University of Utah

Automated Bus Stops and Routes Generation Using Artificial Intelligence Clustering of Taxi Origin-Destination Data (TRBAM-24-00477) - B606

Kibong Moon/Central Connecticut State University, Joonkoo Kang/Central Connecticut State University, MYUNGJIN CHAE/Central Connecticut State University

Coordinated and Dual-Objective Transit Signal Priority in Urban Corridors: A Centralized Deep Reinforcement Learning Approach (TRBAM-24-00523) - B620

Wen Xun Hu/University of Toronto, Yu Shen Lu/University of Toronto, Yifan Zhao/University of Toronto, Hirota Ishihara/University of Toronto, Amer Shalaby/University of Toronto, Baher Abdulhai/University of Toronto

Designing Efficient and Reliable Urban Bus Networks: A Case Study of Barcelona, Spain (TRBAM-24-00446) - B607

JOSEP MENSION/Transports Metropolitans de Barcelona, Michael Pellot/Transports Metropolitans de Barcelona

Machine Learning-Based, Stop-Line Arrival Prediction for Bus Near Signalized Intersection (TRBAM-24-02601) - B608

Aayush Jain/Indian Institute of Technology, Madras, Lelitha Vanajakshi/Indian Institute of Technology, Madras

Evaluation of Transit Signal Priority at Signalized Intersections Under Connected Vehicle Environment (TRBAM-24-01387) - B631

Tianjia Yang/University of North Carolina, Charlotte, Wei Fan/University of North Carolina, Charlotte

Equity-Based Traffic Signal Control Under Connected Vehicle Environment: Deep Reinforcement Learning Approach (TRBAM-24-01385) - B630

Tianjia Yang/University of North Carolina, Charlotte, Wei Fan/University of North Carolina, Charlotte

Transit Signal Priority Based on Deep Reinforcement Learning for Multiple Intersections (TRBAM-24-01998) - B609

Tomoki Nishi/Toyota Central R&D Labs., Inc., Eiji Hato/Toyota Central R&D Labs., Inc.

Estimating Bus Occupancy in Real Time from Wi-Fi Frames with Randomized Media Access Control Addresses (TRBAM-24-05409) - B616

Esther Mneney/FAMU-FSU College of Engineering, Yanshuo Sun/FAMU-FSU College of Engineering, Md Alam/FAMU-FSU College of Engineering, Zhaomiao Guo/FAMU-FSU College of Engineering

Examining Soft-Target Dispatching Strategies for Shuttle Services Considering Uncertain Passenger Arrivals (TRBAM-24-01774) - B617

Wenbo Fan/Southwest Jiaotong University, Shuguang Wang/Southwest Jiaotong University, Xiaotian Yan/Southwest Jiaotong University

The Impacts of COVID-19 Pandemic on Bus Transit Demand: A 2-Year Naturalistic Observation in Jiading, Shanghai, China (TRBAM-24-01846) - B618

Weihai Bi/Tongji University, Yu Shen/Tongji University, Yuxiong Ji/Tongji University, Yuchuan Du/Tongji University

(continued)

A Multiple Mediation Analysis to Untangle the Impacts of COVID-19 on Nationwide Bus Ridership in the United States (TRBAM-24-00662) - B619

Abubakr Ziedan/University of Tennessee, Knoxville, Luiz Lima/University of Tennessee, Knoxville, Candace Brakewood/University of Tennessee, Knoxville

Assessing the Vulnerability of Public Transportation for Different City Types Using GIS-Based Data Mining Techniques (TRBAM-24-03437) - B625

Donghee Oh/Hanyang University, Sangjae Lee/Hanyang University, Juneyoung Park/Hanyang University, Jaehong Park/Hanyang University, Chang-Gyun Roh/Hanyang University

Evaluating the Transit Accessibility and Equity of the Bus Rapid Transit System: The Case of Dar-Es-Salaam, Tanzania (TRBAM-24-03583) - B626

Leonard Mwesigwa/University of Toronto - St George Campus: University of Toronto, Zehui Yin/University of Toronto - St George Campus: University of Toronto, Steven Farber/University of Toronto - St George Campus: University of Toronto

Segmenting and Exemplifying Potential Flex Route Transit Adopters (TRBAM-24-01163) - B627

Jingcai Yu/Southeast University, Zijuan Yin/Southeast University, Yan Zheng/Southeast University, Rongrong Guo/Southeast University, Wenquan Li/Southeast University

Joint Optimization of Scheduling and Passenger Matching for Flexible and Conventional Bus Services (TRBAM-24-03596) - B621

Xinyan Zhang/Tongji University, Kun An/Tongji University, Wanjing Ma/Tongji University

Impacts of Bus Rapid Transit Introduction on Local Economy in a Developing City: A Case Study in Brasilia (TRBAM-24-01215) - B628

Masanori Sagawa/University of Tokyo, Daniel del Barrio Alvarez/University of Tokyo, Hironori Kato/University of Tokyo, Lucas Alves/University of Tokyo

Exploring Effect of Urban Shuttle Bus Service using Agent-based Simulations (TRBAM-24-06404) - B632

Chaowen Wu/Inner Mongolia University, Yuan Zhu/Inner Mongolia University, Guoqing Song/Inner Mongolia University, Jingqiao Yu/Inner Mongolia University, Hailong Sun/Inner Mongolia University

Bus Priority Lanes Improve Stop-to-Stop Marginal Performance: Evidence from General Transit Feed Specification Realtime (TRBAM-24-01482) - B629

Tingsen (Tim) Xian/University of Sydney, John Nelson/University of Sydney, Emily Moylan/University of Sydney

Estimation of Bus Origin-Destination Matrix Using Passenger Boarding Counts: An Application of Transit Symmetry (TRBAM-24-02423) - B634

Tara Saeidi/University of Manitoba Faculty of Engineering, Mostafa Abolfazli/University of Manitoba Faculty of Engineering, Babak Mehran/University of Manitoba Faculty of Engineering

Optimization of Bus Stop Location based on Spatial Analysis and K-Means Clustering Method – A Case Study in Hohhot City (TRBAM-24-06504) - B633

Jingqiao Yu/Inner Mongolia University, Yuan Zhu/Inner Mongolia University, Chaowen Wu/Inner Mongolia University, Guoqing Song/Inner Mongolia University

The Dial-a-Ride Problem with Meeting Points: A Problem Formulation for Shared Demand Responsive Transit (TRBAM-24-01160) - B635

Lianne Cortenbach/National Technical University of Athens (NTUA), Konstantinos Gkiotsalitis/National Technical University of Athens (NTUA), Eric van Berkum/National Technical University of Athens (NTUA)

Enhancing Resilience of a Bus Rapid Transit Corridor Service Through Timetabling: Two-Stage Stochastic Model and Improved Integer L-Shaped Method (TRBAM-24-01031) - B636

Yiran Wang/Southeast University, Pengli Mo/Southeast University, Jingxu Chen/Southeast University, Zhiyuan Liu/Southeast University

Evaluation of Bus Bay Performance: A Picoscopic Simulation-Based Approach (TRBAM-24-00926) - B623

Yawei Wang/University of Utah, Xin Li/University of Utah, Yun Yuan/University of Utah

An Evaluation of Public Transportation System Through Social Network Analysis Approach (TRBAM-24-05239) - B637

Jahun Koo/Hongik University, gyeongjae Lee/Hongik University, Sujae Kim/Hongik University, Sangho Choo/Hongik University

Analyzing Factors of Customized Bus Choice: A Random Parameters with Heterogeneity in Means and Variances Model (TRBAM-24-03605) - B638

Mengzhu Zhang/Harbin Institute of Technology, Weihai, Junqiang Leng/Harbin Institute of Technology, Weihai, Qinzhou Hou/Harbin Institute of Technology, Weihai

Does the License Plate Restriction Enhance Transit?: Analyzing the Effects of the Measure on Mixed-Traffic Bus Operation (TRBAM-24-04336) - B639

Alvaro Rodriguez-Valencia/Universidad de Los Andes, Angelica Castillo/Universidad de Los Andes, Paula Lopez/Universidad de Los Andes, Laura Arroyo/Universidad de Los Andes, Juan Nicolas Gonzalez/Universidad de Los Andes, Hernan Ortiz-Ramirez/Universidad de Los Andes

Identifying Opportunities to Advance Bus Priority in Northern Virginia (TRBAM-24-04884) - B615

Xavier Harmony/Northern Virginia Transportation Commission, Sophie Spiliotopoulos/Northern Virginia Transportation Commission

Vehicle Routing Optimization Problem with Split Delivery of Customized Buses (TRBAM-24-01655) - B624

Jie Xiong/Beijing University of Technology, Zhuxuan Cheng/Beijing University of Technology, Tongfei Li/Beijing University of Technology, Yan Xu/Beijing University of Technology

4046



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Emerging Trends in Urban Freight Transportation

Alireza Ermagun, George Mason University, presiding

Sponsored By Standing Committee on Urban Freight Transportation

This session includes poster presentations about the latest developments in urban freight. It covers both innovations in methods to better understand and model urban freight flows, as well as the assessment of solutions to enhance the efficiency and sustainability of urban freight transportation. The presentations will cover different topics, such as, the use of autonomous robots for urban deliveries, the use of urban consolidation centers and lockers for the last mile.

Analysis of Urban Freight Flows and Retail Goods Movement Using Inference with GPS Trajectory Data (TRBAM-24-06047) - B500

Olcay Sahin/Argonne National Laboratory, Monique Stinson/Argonne National Laboratory, Hui Shen/Argonne National Laboratory, Abdelrahman Ismael/Argonne National Laboratory

Energy-Efficient, Last-Mile Deliveries Through Integrated Automation of Freight and Passenger Transport (TRBAM-24-05871) - B552

Aditya Kumar/Indian Institute of Technology, Delhi, Lokesh Kalahasthi/Indian Institute of Technology, Delhi, Abhishek Abhishek/Indian Institute of Technology, Delhi, Laxman Bisht/Indian Institute of Technology, Delhi, Ivan Sanchez-Diaz/Indian Institute of Technology, Delhi

Pricing and Matching in Three-Sided On-Demand Delivery Services (TRBAM-24-05794) - B522

Mojtaba Davoodi/York University, Mehdi Nourinejad/York University, Peter Park/York University

Optimized, Cooperative Routing Strategy for Autonomous Last-Mile Delivery Robots and Delivery Trucks (TRBAM-24-05725) - B551

Avani Aravind/University of Memphis, Suvin Padinjare Venthuruthiyil/University of Memphis, Sabyasachee Mishra/University of Memphis

Understanding the Equity Perspectives of Online Shopping (TRBAM-24-05612) - B531

Subasish Das/Texas State University, Anandi Dutta/Texas State University

Formal and Informal Freight Transportation at Marketplaces in Urban Areas: Empirical Evidence from Medellin, Colombia (TRBAM-24-05515) - B521

Carlos Gonzalez-Calderon/University of Missouri, St Louis, Susana Londoño-Moreno/University of Missouri, St Louis, Mario Peñaranda-Márquez/University of Missouri, St Louis, Juan Galeano-Gallego/University of Missouri, St Louis, Lina Vasco-Diaz/University of Missouri, St Louis, John Posada-Henao/University of Missouri, St Louis, Claudia Muñoz-Hoyos/University of Missouri, St Louis, Claudia Aldana-Ramirez/University of Missouri, St Louis, Paula A. Penagos-Rodriguez/University of Missouri, St Louis

Economic Analysis of On-Street Parking with Urban Delivery (TRBAM-24-05251) - B532

Zhengtian Xu/George Washington University, Xiaotong Sun/George Washington University

Consumers Intention to Adopt Parcel Lockers as an Alternative for Last-Mile Delivery in Emerging Economies (TRBAM-24-05216) - B504

Paula A. Penagos-Rodriguez/University of Missouri, St Louis, Trilce Encarnacion/University of Missouri, St Louis, Carlos Gonzalez-Calderon/University of Missouri, St Louis, Matias Enz/University of Missouri, St Louis

Delivering Efficiency: Joint Optimization of Parcel Locker Location and Configuration Considering Vehicle Routing and Flexible Delivery Alternatives (TRBAM-24-04920) - B503

Lissa Melis/Pennsylvania State University, Andisheh Ranjbari/Pennsylvania State University, Vikash Gayah/Pennsylvania State University

(continued)

A Microsimulation Approach to Assess the Impacts of Demand Management Strategies on E-Commerce Delivery Tours (TRBAM-24-04599) - B510

Jose Holguin-Veras/Georgia Institute of Technology, Sofia Pérez-Guzmán/Georgia Institute of Technology, Abdelrahman Ismael/Georgia Institute of Technology, Julia Amaral/Georgia Institute of Technology

Integrated Agent-Based Modeling and Simulation Framework for Urban Parcel Shipments to and from Establishments (TRBAM-24-04566) - B524

Lukas Barthelmes/Karlsruhe Institute of Technology (KIT), Jelle Kübler/Karlsruhe Institute of Technology (KIT), Mehmet Görgülü/Karlsruhe Institute of Technology (KIT), Martin Kagerbauer/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

An Urban Freight Model Considering Intra-Firm and Supply Chain Relationships (TRBAM-24-04372) - B512

Usman Ahmed/University of Toronto, Tho Le/University of Toronto, Matthew Roorda/University of Toronto

The State of Sustainable Urban Freight Planning in the United States (TRBAM-24-04343) - B541

Thomas Maxner/University of Washington, Giacomo Dalla Chiara/University of Washington, Anne Goodchild/University of Washington

E-Cargo Tricycles for Urban Goods Movement: A Comprehensive Analysis of a Pilot Study in Toronto (TRBAM-24-04285) - B513

Usman Ahmed/University of Toronto, Junshi Xu/University of Toronto, Farah Ghizzawi/University of Toronto, Milad Saeedi/University of Toronto, Lisa Guseva/University of Toronto, Marianne Hatzopoulou/University of Toronto, Matthew Roorda/University of Toronto

Truck Tour Synthesis for Multi-Agent Simulations from Public Data (TRBAM-24-04205) - B523

Haggai Davis/New York University, Hector Landes/New York University, Farnoosh Namdarpour/New York University, Hai Yang/New York University, Joseph Chow/New York University, Kaan Ozbay/New York University

Understanding Social Perception, Interactions, and Safety Aspects of Sidewalk Delivery Robots Using Sentiment Analysis (TRBAM-24-04014) - B553

Tho Le/Purdue University, Yuchen Du/Purdue University

Use of Parcel Lockers and Travel Behavior (TRBAM-24-03686) - B502

Jaehyun Ha/University of Southern California, Genevieve Giuliano/University of Southern California, Robert Binder/University of Southern California, Andrea Holmes/University of Southern California

Evaluating Policy Support for an Urban Consolidation Center Based on Retailer Adoption (TRBAM-24-03276) - B520

Yahui Yao/Tongji University, Rong Zhang/Tongji University, Jesus Gonzalez-Feliu/Tongji University

Optimization of Last-Mile Parcel Delivery: Leveraging Crowdsourcing and Mobile Parcel Lockers (TRBAM-24-02497) - B501

Mina Akbarpour/Danmarks Tekniske Universitet, Yu Jiang/Danmarks Tekniske Universitet, Otto Anker Nielsen/Danmarks Tekniske Universitet

The Evolving Landscape of Urban Logistics: A Study of the Greater Golden Horseshoe (TRBAM-24-02370) - B514

Carlos Rivera-Gonzalez/University of Toronto, Usman Ahmed/University of Toronto, Matthew Roorda/University of Toronto

Assessing Autonomous Delivery Robots as Enablers of Resiliency for Urban Grocery Delivery: A Chance-Constraint Model (TRBAM-24-02348) - B544

Dan Liu/University of Shanghai for Science and Technology, Yiwei Zhou/University of Shanghai for Science and Technology, Evangelos I. Kaisar/University of Shanghai for Science and Technology

Metro Logistics Network Location Considering Supply and Demand: A Case Study for Chengdu (TRBAM-24-02260) - B540

Xiaoyuan Yang/Southwest Jiaotong University, Mi Gan/Southwest Jiaotong University, Qiujun Qian/Southwest Jiaotong University, Tao Peng/Southwest Jiaotong University

How Ready a Municipality Is for Zero Emission City Logistics?: Development and Application of Maturity Model for Dutch Municipalities (TRBAM-24-02168) - B534

Nilesh Anand/Rotterdam University of Applied Sciences, Kasper Mittelmeijer/Rotterdam University of Applied Sciences, Rory Brand/Rotterdam University of Applied Sciences, Thato Motloung/Rotterdam University of Applied Sciences, Hans Quak/Rotterdam University of Applied Sciences, J.H.R van Duin/Rotterdam University of Applied Sciences

Study of Household E-Commerce Demand-Driven Urban Freight Using an Agent-Based Simulation Framework (TRBAM-24-02121) - B530

Virgilio Ma. Jr. RAMOS/Tokyo University of Marine Science and Technology (TUMST), Takanori Sakai/Tokyo University of Marine Science and Technology (TUMST), Riki Motojima/Tokyo University of Marine Science and Technology (TUMST), Tetsuro Hyodo/Tokyo University of Marine Science and Technology (TUMST)

Node Location of Bi-Level, Urban, Metro-Based, Ground, Underground Logistics Distribution (TRBAM-24-02067) - B533

Zhang Haiyan/Southeast University, Zhang Jian/Southeast University, Zheng Changjiang/Southeast University, Wang Bo/Southeast University, Chen Juan/Southeast University

Impact of Double Parking on Urban Traffic Flow: A Comparative Study of Extended Cargo Bikes with Trailers and Conventional Delivery Vehicles (TRBAM-24-01828) - B543

Marcus Klatte/RWTH Aachen University, Tobias Kuhnimhof/RWTH Aachen University

Analytic and Heuristic Approach to Drone-Assisted Parcel Delivery with an Adjusted Rendezvous Point (TRBAM-24-01611) - B542

Sang-Wook Han/Seoul National University, Sedong Moon/Seoul National University, Dong-Kyu Kim/Seoul National University

Analytical Model for Large-Scale Design of Sidewalk Delivery Robot Systems (TRBAM-24-01264) - B554

Hai Yang/New York University, Yuchen Du/New York University, Tho Le/New York University, Joseph Chow/New York University

Spatial Distribution of Economic Activities and Freight Trips in Metropolitan Areas (TRBAM-24-01070) - B511

Carlos Rivera-Gonzalez/University of Toronto, Jose Holguin-Veras/University of Toronto, Oriana Calderon/University of Toronto

4047



Wednesday, 08:00 a.m. - 09:45 a.m., Convention Center, Hall A

Research in Ports and Container Terminals

Nathan Huynh, University of Nebraska, Lincoln, presiding

Sponsored By Standing Committee on Intermodal Freight Transport

Multi-Objective Ship Schedule Recovery at Liner Shipping Routes with Voluntary Ship Speed Reduction Zones and Emission Control Areas (TRBAM-24-01021) - B560

Zeinab Elmi/Florida A&M University-Florida State University, Bokang Li/Florida A&M University-Florida State University, Amir Fathollahi-Fard/Florida A&M University-Florida State University, Guangdong Tian/Florida A&M University-Florida State University, Marta Borowska-Stefańska/Florida A&M University-Florida State University, Szymon Wiśniewski/Florida A&M University-Florida State University, Maxim Dulebenets/Florida A&M University-Florida State University

Research on Train Track Allocation in Double-Yard Railroad Container Terminals (TRBAM-24-01128) - B550

Yansen Pei/Beijing Jiaotong University, Xiaoning Zhu/Beijing Jiaotong University, Li Wang/Beijing Jiaotong University, Wenqian Liu/Beijing Jiaotong University

4048

CM (1.75)



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 152B

City Department of Transportation Leadership Roundtable: Automated Vehicles Are on Our Streets, Now What?

Stephanie Dock, District Department of Transportation, presiding

Sponsored By City Transportation Issues Coordinating Council, Standing Committee on Vehicle-Highway Automation

Autonomous vehicles (AVs) have begun to test and deploy more widely in cities and reports from San Francisco and beyond have brought this topic to the forefront for many. What happens when the rubber meets the road and AI meets your city's streets? Join this roundtable discussion with leadership from major cities to talk about what they are seeing with AV testing and deployment, how their cities are responding, and what the future of deployment might look like.

Seattle Perspective (P24-21068)

Francisca Stefan/Seattle Department of Transportation

Nashville Perspective (P24-20854)

Diana Alarcon/Nashville Department of Transportation

New York City Perspective (P24-20870)

William Carry/New York City Department of Transportation

4049

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon B

Pedestrian Safety

Srinivas Pulugurtha, University of North Carolina, Charlotte, presiding

Sponsored By Standing Committee on Pedestrians

This session will feature five papers on pedestrian safety including interactions with autonomous vehicles, nighttime conditions, and safety disparities.

Will Pedestrians Perceive Autonomous Vehicles Safer Than Conventional Vehicles When Crossing the Road?: A Virtual Reality Experiment (TRBAM-24-02138)

Alastair Shipman/Imperial College London, Ahmadsreza Faghih-Imani/Imperial College London, Amir Pooyan

Afghari/Imperial College London, Aruna Sivakumar/Imperial College London

Nighttime Safety of Pedestrians: The Role of Pedestrian Autonomous Emergency Braking Systems (TRBAM-24-02568)

Nastaran Moradloo/University of Tennessee, Iman Mahdinia/University of Tennessee, Asad Khattak/University of Tennessee

Examining Pedestrian Crash Frequency and Environmental Factors for Three Subgroups of the Elderly Population: A Micro-Level Analysis (TRBAM-24-03631)

Pei-Fen Kuo/National Cheng Kung University, Hung-Jui Lin/National Cheng Kung University, Umroh Dian

Sulistiyah/National Cheng Kung University, I Gede Brawiswa Putra/National Cheng Kung University, Ching-Ju

Chiu/National Cheng Kung University

Investigating Racial and Poverty-Level Disparities Associated with Pedestrian Nighttime Crashes (TRBAM-24-04528)

Sia Mwende/Western Michigan University, Valerian Kwigizile/Western Michigan University, Jun-Seok Oh/Western

Michigan University, Ron Van Houten/Western Michigan University

Vehicle Design and Speed: Factors Associated with Pedestrian Injury Severity in the Pacific Northwest (TRBAM-24-05490)

Josh Roll/Oregon Department of Transportation

4050

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 103A

Infrastructure Messages and Warnings

Jared Young, OST-R/Volpe Center, presiding

Sponsored By Standing Committee on Human Factors of Infrastructure Design and Operations

Contextual Effects to Modulate Sign Adherence: Moderating Driver Behavior in Response to Creative Versus Traditional Dynamic Message Signs Under Varying Driving Conditions (TRBAM-24-04690)

MD Rezwan Hossain/University of Central Florida, Hatem Abou-Senna/University of Central Florida, Mary Jean

Amon/University of Central Florida, Dana Knox/University of Central Florida

Impact Analysis and Effectiveness Assessment of Different Warning Measures on Drivers' Avoidance of Typical Freeway Debris (TRBAM-24-02233)

Haijian Li/Beijing University of Technology, Erlong Lou/Beijing University of Technology, Silu Yang/Beijing University of

Technology, Xiaohua Zhao/Beijing University of Technology

Driver's Visual Attention in Response to Message Type: Creative Versus Traditional Dynamic Message Signs (TRBAM-24-05555)

Hatem Abou-Senna/University of Central Florida, MD Rezwan Hossain/University of Central Florida, Mary Jean

Amon/University of Central Florida, Dana Knox/University of Central Florida

Evaluation of Infrastructure-Based Warning System on Driving Behaviors: A Roundabout Study (TRBAM-24-04501)

Cong Zhang/Purdue University, Chi Tian/Purdue University, Tianfang Han/Purdue University, Hang Li/Purdue University,

Yiheng Feng/Purdue University, Yunfeng (Cindy) Chen/Purdue University, Robert Proctor/Purdue University, Jiansong

Zhang/Purdue University

4051

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Salon C

Moving Automated Vehicle Research into Practice

Hao Liu, University of California, Berkeley, presiding

Kakan Dey, Michigan State University, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation, Joint Subcommittee on Human Factors in Road Vehicle Automation (with ACH40)

This interactive session explores how to implement recently researched AV projects. Come join the discussion.

Operational Safety Hazard Identification of Fleet Maintenance Activities for Automated Driving Systems in Mobility-as-a-Service (TRBAM-24-01952)

Camila Correa-Jullian/University of California, Los Angeles, Marilia Ramos/University of California, Los Angeles, Ali Mosleh/University of California, Los Angeles, Jiaqi Ma/University of California, Los Angeles

A Cooperative Perception System for Aiding Connected and Automated Vehicles' Navigation and Improving Safety (TRBAM-24-05208)

hanlin chen/Purdue University, Vamsi Krishna Bandaru/Purdue University, Yilin Wang/Purdue University, Mario Romero/Purdue University, Andrew Tarko/Purdue University, Yiheng Feng/Purdue University

How Do Stakeholders in Norway's Private and Public Sectors Perceive the Prospects and Feasibility of Commercializing Positioning and Navigation Technologies for Autonomous Driving? (TRBAM-24-00088)

Randi Fagerholt/SINTEF, Hanne Seter/SINTEF, Petter Arnesen/SINTEF

Achieving Human-Like Trajectory Prediction for Autonomous Vehicles: A Behavior-Aware Approach (TRBAM-24-03724)

Haicheng Liao/University of Macau, Hanlin Kong/University of Macau, Huanming Shen/University of Macau, Zhenning Li/University of Macau, Ruru Tang/University of Macau, Ziyuan Pu/University of Macau, Shengbo Li/University of Macau, Chengzhong Xu/University of Macau

4052

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 102B

Applications of Probe, Connected Vehicle, and Alternative Types of Data in Traffic Monitoring

Ioannis Tsapakis, Texas A&M Transportation Institute, presiding

John Ash, University of Cincinnati, presiding

Sponsored By Standing Committee on Highway Traffic Monitoring

This session presents new methods, uses, and applications of probe, connected vehicle, and alternatives types of data to improve traffic monitoring programs and address common challenges faced by transportation agencies.

Network-Wide Traffic Volume Estimation Based on Probe Vehicle Data (TRBAM-24-00825)

Kia Eisinga/TomTom, Stefan Lorkowski/TomTom

Evaluating Probe-Based Traffic Volume Estimates: Insights from a Multi-Vendor, Multi-Product Validation in North Carolina (TRBAM-24-05894)

Zachary Vander Laan/University of Maryland, College Park, Stanley Young/University of Maryland, College Park, Aliakbar Kabiri/University of Maryland, College Park

Data-Driven Analytics on Annual Average Daily Traffic Calibration and Estimation for Town Maintained Highways: A Case Study for Connecticut (TRBAM-24-02285)

Kai Wang/University of Connecticut, Shanshan Zhao/University of Connecticut, Niloufar Shirani/University of Connecticut, Eric Jackson/University of Connecticut

Real-Time Monitoring Method of Traffic Flow Stability Based on Vehicle Trajectory Data (TRBAM-24-01125)

Zhongxing Che/Southeast University, Jian Lu/Southeast University, Yongfeng Ma/Southeast University, Jun Zhang/Southeast University, Junde Chen/Southeast University, Chao Gu/Southeast University

Real-Time Urban Traffic Monitoring Using Transit Buses as Probes (TRBAM-24-04798)

Shangkun Jiang/University of Canterbury, Yiming Xu/University of Canterbury, Wai Wong/University of Canterbury, Xilei Zhao/University of Canterbury

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 152A

Navigating the Future: Travel Behavior in the Age of New Mobilities

Naveen Eluru, University of Central Florida, presiding

Khandker Habib, University of Toronto, presiding

Sponsored By Standing Committee on Traveler Behavior and Values

In this session, attendees will learn about various aspects of new mobility options, including on-demand mobility services (Uber, Lyft, etc.), private car sharing, and e-scooters. Five presentations will present five different applications of statistical and econometric methods for five different datasets. Attendees will learn about factors influencing various aspects of the usage of these services. Empirical case studies will enhance knowledge about the impact of such services on urban transportation

Ridesourcing Use in Metro Vancouver: Looking Through the Lens of Disability (TRBAM-24-00740)

Felita Ong/University of Toronto, Patrick Loa/University of Toronto, Khandker Habib/University of Toronto

E-Scooter Multi-Riding: Analyzing Riding Practices in Helsinki, Finland (TRBAM-24-03772)

Samira Dibaj/Aalto University, Daniel Lopatnikov/Aalto University, Miloš Mladenović/Aalto University

Understanding Factors Influencing User Retention in European Union Shared E-Scooter Schemes (TRBAM-24-04350)

Yuanxuan Yang/University of Leeds, Charalampos Saridakis/University of Leeds, Zia Wadud/University of Leeds, Alimurtaza Kothawala/University of Leeds, Aurojeet Jena/University of Leeds, Basar Ozbilen/University of Leeds, Kailai Wang/University of Leeds, Giovanni Circella/University of Leeds, Sebastian Castellanos/University of Leeds, Susan Grant-Muller/University of Leeds

Participation Decision in Private Carsharing Under Uncertainty (TRBAM-24-04810)

Mengxia Li/Hiroshima University, Tao Feng/Hiroshima University

Understanding the Role of Transportation Network Companies in Addressing Transportation Demand: A Chicago Case Study (TRBAM-24-04037)

Dewan Ashraful Parvez/University of Central Florida, Sudipta Dey Tirtha/University of Central Florida, Tanmoy Bhowmik/University of Central Florida, Srinivas Peeta/University of Central Florida, Naveen Eluru/University of Central Florida

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 151B

Emerging Economic and Finance Approaches: Global Findings

Sabyasachee Mishra, University of Memphis, presiding

Sponsored By Standing Committee on Economics and Finance

This session presents a series of emerging topics in transportation economics and finance from researchers around the globe. Attendees will learn about: Meta-analysis on the Indirect Impacts of Highway Investment: Evidence from Japan Access-Based Hedonic Model of Land Value in Sydney, Australia Modelling Transport in Quantitative Spatial Economics: Towards a New Generation of Appraisal Methods Is Contractual Flexibility in Public Private Partnerships a Good Thing? The Case of Additional Investments in French Motorway Concessions

Meta-Analysis on the Indirect Impacts of Highway Investment: Evidence from Japan (TRBAM-24-00492)

Yoshikazu Kanai/Creative Research and Planning Co.,Ltd., Jetpan Wetwitoo/Creative Research and Planning Co.,Ltd., Hironori Kato/Creative Research and Planning Co.,Ltd.

Access-Based Hedonic Model of Land Value in Sydney (TRBAM-24-00604)

Isaac Mann/The University of Sydney, David Levinson/The University of Sydney

Modeling Transport in Quantitative Spatial Economics: Toward a New Generation of Appraisal Methods (TRBAM-24-02438)

Daniel Hörcher/Imperial College London, Daniel Graham/Imperial College London

Is Contractual Flexibility in Public-Private Partnerships a Good Thing?: The Case of Additional Investments in French Motorway Concessions (TRBAM-24-04929)

Nicolas Wagner/Autorité de Régulation des transports, Jennifer Siroteau/Autorité de Régulation des transports

4055

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 156

The Roundtable of Good Faith

Chris Huffman, Huffman Corridor Consulting , presiding

Sponsored By Standing Committee on Eminent Domain and Land Use, Standing Committee on Access Management, Standing Committee on Tort Liability and Risk Management

This panel discussion begins with a brief presentation by each panelist on the subject of good faith in the real world. These presentations are followed by a facilitated discussion between Participants and Panelists during which Participants are encouraged to share their experiences (positive and negative) with the real-politique of good faith, and suggesting models or definitions they have found useful.

Good Faith and the Uniform Act (P24-20459)

Christopher Kramer/Nossaman LLP

Good Faith and Reputational Risk (P24-20461)

Terri Parker/Missouri Department of Transportation

The Importance of the Public Trust (P24-20462)

Stuart Samberg/Rummel, Klepper, and Kahl, LLP (RK&K)

Good Faith Is a Two-Way Street (P24-20463)

Philip Demosthenes/Philip B. Demosthenes, LLC

4056

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 204AB

Rehabilitation of Buried Structures

Brent Bass, SGH, presiding

Sponsored By Standing Committee on Culverts, Buried Bridges and Soil Structure Interaction, Subcommittee on Geotechnical Asset Management

This session will consist of four presentations showing various aspects of rehabilitation of culverts and buried bridges (and not only). The first two talk about liners (HDPE and cementous) used to rehabiliate steel and concrete culverts. The third presentation discusses machine learning and data analytics for highway culvert management. The last presentation shows European examples of bridges and culverts rehabilitation with use of flexible steel culverts(structural plates).

Applying New York State Department of Transportation Culvert Liner Specifications to Design High-Density Polyethylene Liners for Deteriorate Corrugated Steel Pipes (P24-20368)

Jeremy Bowers/SGH

Structural Design of Cementitious Sprayed Liners for Reinforced Concrete Culverts and Sewers Considering Host Pipe Condition (P24-20369)

Ian Moore/Queen's University

Machine Learning and Data Analytics for Highway Culvert Management (P24-20370)

Xiong Yu/Case Western Reserve University

European Examples of Innovative Rehabilitation of Bridges and Culverts with the Use of Corrugated Steel Structural Plates (P24-20458)

Paulina Andersz/ViaCon Polska

4057

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 206

Inspection of Welded Anisotropic Steel Plates

Ronnie Medlock, High Steel Structures, presiding

Sponsored By Standing Committee on Fabrication and Inspection of Metal Structures, Standing Committee on Steel Bridges

This session will discuss the recently discovered challenges of inspecting welded steel bridges fabricated by steel plates having significant acoustic anisotropy such as TMCP plates. The acoustic anisotropy can result in erroneous flaw detection by ultrasonic inspection and potentially unsafe structures. Proposed evaluation procedure and changes to the bridge fabrication specifications will be presented.

What Are Thermo-Mechanical Process Steels (P24-20645)

Todd Nelson/SSAB Americas, David Stoddard/SSAB Americas

Characterizing Wave Velocities in Bridge Steels and the Effects on Ultrasonic Testing (TRBAM-24-04408)

Glenn Washer/University of Missouri, Columbia, Joshua Agbede/University of Missouri, Columbia, Kalpana Yadav/University of Missouri, Columbia, Robert Connor/University of Missouri, Columbia, Ryan Turnbull/University of Missouri, Columbia

Evaluation of Proposed Weld Inspection Procedure in Anisotropic Steel (P24-20646)

Karl Frank/No Organization

Proposed Changes to the Bridge Welding Code for Addressing Variations in Acoustic Velocity (P24-20647)

Ronnie Medlock/High Steel Structures

4058

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 207B

Advances in Geotechnical Aspects of Pavement Modeling and Management

Derrick Dasenbrock, Federal Highway Administration (FHWA), presiding

Thomas Oommen, University of Mississippi, presiding

Surya Congress, Michigan State University, presiding

Raul Velasquez, Minnesota Department of Transportation, presiding

Sponsored By Standing Committee on Geotechnical Instrumentation and Modeling

This session highlights advances in pavement instrumentation, modeling, and asset management.

Inverting Compaction System to Obtain Stiffness Index for Intelligent Compaction (TRBAM-24-05083)

Zhou Fang/Southeast University, Tao Ma/Southeast University

Advancing Light Weight Deflectometer Measurements: Integrating Viscoelastic Plastic Model

Through Numerical Simulation and Large-Scale Laboratory Physical Model Validation (TRBAM-24-06144)

Nitin Tiwari/Indiana Department of Transportation, Boonam Shin/Indiana Department of Transportation, Peter

Becker/Indiana Department of Transportation, Antonio Bobet/Indiana Department of Transportation

The Effect of Asphalt Temperature and Base-Subgrade Saturation on the Steady State Response of Flexible Pavements (TRBAM-24-05749)

Jeremiah Stache/U.S. Army Engineer Research and Development Center

Application of Satellite-Based Remote Sensing for the Management of Pavement Infrastructure Assets (TRBAM-24-01468)

Amit Gajurel/Texas A&M University, College Station, Anand Puppala/Texas A&M University, College Station, Nriporjyoti

Biswas/Texas A&M University, College Station, Hiramani Chimaurya/Texas A&M University, College Station

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 146B

Got a Ride?: Evaluating Disparities in Car Ownership

Gloria Jeff, Minnesota Department of Transportation, presiding

Tracee Strum-Gilliam, PRR, Inc., presiding

Sponsored By Standing Committee on Equity in Transportation

This session features papers that examine geographic, racial, and ethnic disparities in car access and ownership in the US and globally. Participants will learn about rural car ownership in China, burdens associated with car ownership across racial groups, car use behavior among low-income households, and the experiences of rural migrants with limited car access.

Exploring the Influencing Factors of Rural Residents' Car Ownership and Use: Evidence from Guiyang, Western China (TRBAM-24-01185)

Junfeng Yu/Kunming University of Science and Technology, Mingwei He/Kunming University of Science and Technology, Guoji Cheng/Kunming University of Science and Technology, Jie Liu/Kunming University of Science and Technology, Jianbo Li/Kunming University of Science and Technology

Black Households Are More Burdened by Vehicle Ownership Than White Households (TRBAM-24-06379)

Quinn Molloy/University of Connecticut, Norman Garrick/University of Connecticut, Carol Atkinson-Palombo/University of Connecticut

Spatio-Temporal Differences in Car Usage Among Low-Income Carless and Car-Owning Households in the United States (TRBAM-24-03887)

Subid Ghimire/North Carolina State University, Eleni Bardaka/North Carolina State University

Mobility, Community, and Connection: Transportation Experiences of Rural Latinx Migrant Workers (TRBAM-24-05016)

Julia LanzDuret-Hernandez/The University of Vermont, Sarah Grajdura/The University of Vermont, Dana Rowangould/The University of Vermont

Driving A-loan: Race and the Geography of Automobile Debt in California (TRBAM-24-05300)

Evelyn Blumenberg/University of California, Los Angeles, Samuel Speroni/University of California, Los Angeles, Fariba Siddiq/University of California, Los Angeles, Jacob Wasserman/University of California, Los Angeles

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 146C

How Safe Is This?: A Gender Perspective

Shamsunnahar Yasmin, Queensland University of Technology, presiding

Sponsored By Standing Committee on Women and Gender in Transportation

This session is centered around women's unique views, needs, and perspectives on safety during travel. More specifically, the presentations highlight women's experiences as they utilize transportation modes at various times of the day while also navigating unforeseen challenges during travel.

The Role of Gender in Responding to a Public Railway Disruption Event (TRBAM-24-00789)

Katie McPeake/University of Southampton, Katie Parnell/University of Southampton, Katherine Plant/University of Southampton

Gender Split and Safety Behavior of Cyclists and E-Scooter Users in Asbury Park, New Jersey (TRBAM-24-04031)

Hannah Younes/Rutgers University, Robert Noland/Rutgers University, Clinton Andrews/Rutgers University

Rethinking Transit Safety: Understanding and Addressing Gender-Based Harassment and Enhancing Safety on San Francisco's Muni Transit System (TRBAM-24-04697)

Pearl Liu/Cambridge Systematics, Greer Cowan/Cambridge Systematics

Modeling Female Commuter Travel Mode Preferences for Nighttime Travel: Integrating Safety and Accessibility Factors (TRBAM-24-01558)

B. M. Assaduzzaman Nur/Bangladesh University of Engineering and Technology, Shayeda Shoulin/Bangladesh University of Engineering and Technology, Md. Shibber Hossain/Bangladesh University of Engineering and Technology, B. M. Ashikujaman Nur Shoron/Bangladesh University of Engineering and Technology, Md. Mizanur Rahman/Bangladesh University of Engineering and Technology

(continued)

The Role of Bystanders on Women's Self-Efficacy and Perception of Safety for Public Transport Journeys (TRBAM-24-01577)

Kirsten Tilleman/University of Auckland, Subeh Chowdhury/University of Auckland

4062

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 146A

Making Progress on the National Electric Vehicle Infrastructure Program: Updates and Perspectives from States

Alan Jenn, University of California, Davis, presiding

Sponsored By Standing Committee on Transportation Energy, Section - Transportation and Sustainability, Standing Committee on Air Quality and Greenhouse Gas Mitigation, Standing Committee on Resource Conservation and Recovery, Standing Committee on Alternative Fuels and Technologies, Standing Committee on Economic Development and Land Use

Updates from the Joint Office of Energy and Transportation (P24-20531)

Rachael Nealer/U.S. Department of Energy (DOE)

Perspectives from Virginia (P24-20526)

Erin Belt/Virginia Department of Transportation

Perspectives from Utah (P24-20529)

Lyle McMillan/Utah Department of Transportation

Perspectives from Colorado (P24-21405)

Michael King/Colorado Department of Transportation

4063 CM (1.75)

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 145A

Enhancing Bus Transit Systems Operation and Planning

Jennifer Frost, Dallas Area Rapid Transit (DART), presiding

Sponsored By Standing Committee on Bus Transit Systems

This session includes topics on strategies for mitigating congestion to improve bus performance day to day and in adverse weather conditions. Bus stop amenities will also be addressed.

Deploying Bus Bypasses in Dense, Congested Cities (TRBAM-24-00206)

Nadav Bronicki/University of California, Berkeley, Jean Doig Godier/University of California, Berkeley, Michael Cassidy/University of California, Berkeley

Enhancing Transit Corridor Performance Through Dynamic Bus Lanes: Analyzing Performance at Different Traffic Compliance Rates (TRBAM-24-00889)

Kareem Othman/University of Toronto, Amer Shalaby/University of Toronto, Baher Abdulhai/University of Toronto

Bus Stop Amenities Policies: Evidence from the United States (TRBAM-24-02135)

Ian Trivers/Washington University in St. Louis, Karel Martens/Washington University in St. Louis

The Impact of Adverse Weather on Urban Bus Performance (TRBAM-24-04057)

Mohammad Mohammadi/University of Calgary, Cuauhtémoc Tonatiuh Vidrio-Sahagún/University of Calgary, Saeid Saidi/University of Calgary, Jianxun He/University of Calgary

4064

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 145B

Transit Data Governance in Practice: Success Stories and Strategies

Michael Eichler, Washington Metropolitan Area Transit Authority, presiding

Sponsored By Standing Committee on Transit Data

The first step in using data for decision making is gaining access to the data, which at some agencies can be no small accomplishment. As agency data practices mature, new struggles arise including establishing consistent formats across systems, understanding the meaning of data fields, ensuring data quality, establishing ownership and oversight over data sources. This session features public transit leaders who are bringing established and emerging data governance strategies to their agencies. Speakers will share their agency's data journeys including how and when awareness of the need for data governance evolved and how these governance practices were established and supported by agency leadership.

Mobilizing the Authority Toward Better Data Quality (P24-20584)

Soohuey Yap/Metropolitan Atlanta Rapid Transit Authority

Strong Foundations for Data Governance: People and Process Behind Effective Data Management (P24-20585)

John Levin/Metro Transit, Minneapolis-St. Paul

From Proof of Concept to Production: The Process and the Platform (P24-20586)

Stephan Schindehette/Capital Metro

Transit Data Analytics Growing Pains: Getting Out of Data Debt (P24-20587)

Ellie Newman/Port Authority of Allegheny County

Utilizing Top-Down Open Government Edicts to Motivate Data Governance (P24-20588)

Lisa Fiedler/Metropolitan Transportation Authority (MTA)

4065

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 144AB

Current Trends in Agriculture and Food Transportation

James Nolan, University of Saskatchewan, presiding

Sponsored By Standing Committee on Agriculture and Food Transportation

This lectern session features presentations on trends in the transportation of agriculture and food transportation. More specifically, the papers explore changes in containerized grain exports between 2018 and 2022, the impacts of COVID on US containerized agricultural exports, rural transportation insecurity, and how COVID impacted the consumption of restaurant meals in California.

Analysis of U.S. Containerized Grain, Dried Distillers Grains, and Other Feed Exports Trend (TRBAM-24-03082)

Wesam Helmi/North Dakota State University, Kimberly Vachal/North Dakota State University, Jeremy Mattson/North Dakota State University

A Planning Model for Flexible Route Delivery Optimization of Farm Products: A Case Study in Central Appalachia (TRBAM-24-04252)

Zheyu Li/University of Maryland, College Park, Jason Wang/University of Maryland, College Park, Paul Schonfeld/University of Maryland, College Park

The Impact of COVID-19 on U.S. Containerized Agricultural Exports (TRBAM-24-05642)

Jake Wagner/Washington State University, Mengshan Zhao/Washington State University, Eric Jessup/Washington State University, Bart Kenner/Washington State University

Restaurant Food Consumption in the Time of the Pandemic: A California Case Study (TRBAM-24-05977)

Bumsub Park/University of California, Irvine, Jean-Daniel Saphores/University of California, Irvine

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 143C

Revisiting Net Zero: Unforeseen Challenges and Emerging Opportunities

Jen Wolchansky, Mead & Hunt, Inc., presiding

Carly Shannon, Linx Strategies LLC, presiding

Sponsored By Standing Committee on Environmental Issues in Aviation, Standing Committee on Aviation System Planning, Standing Committee on Aviation Safety, Security and Emergency Management

The Net Zero journey is not bereft of (surmountable) obstacles. Speakers will discuss challenges encountered after establishing a Net Zero Roadmap and strategies to address them. Additionally, this panel will cover new considerations and emerging technologies when pursuing Net Zero. Topics may include utility constraints, Sustainable Aviation Fuel (SAF) availability, airports as energy nodes, electrification, and incentives like the Inflation Reduction Act.

Tackling Aircraft Emissions (P24-20805)

Prem Lobo/Federal Aviation Administration (FAA)

Emerging Technologies to Support Aviation Decarbonization (P24-20806)

Scott Cary/National Renewable Energy Laboratory (NREL)

AlphaStruxure Perspective (P24-20815)

Christine Weydig/AlphaStruxure

Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, 143AB

Integrated Advanced Air Mobility with Landside First- and Last-Mile Connections

Adam Cohen, University of California, Berkeley, presiding

Sponsored By Standing Committee on New Users of Shared Airspace, Standing Committee on Aviation System Planning, Standing Committee on Aviation Economics and Forecasting, Standing Committee on Airfield and Airspace Performance

This session will explore considerations for integrating advanced air mobility with surface landside connections, such as public transportation, shared mobility, mobility-as-a-service, shared automated vehicles, and other mobility services. Attendees will learn about the vast opportunities that arise from integrating advanced air mobility with landside first and last-mile connections.

California State Transportation Agency Perspective (P24-20208)

Gregory Pecoraro/National Association of State Aviation Officials

Schweiger Consulting LLC Perspective (P24-20209)

Carol Schweiger/Schweiger Consulting LLC

Nelson Nygaard Perspective (P24-20210)

Bill Schwartz/Nelson\Nygaard Consulting Associates

Ferrovial Perspective (P24-20211)

Caryn Moore Lund/Ferrovial Vertiports



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Sustainable and Resilient Pavements

Heather Dylla, Construction Partners Inc., presiding

Amir Golalipour, Federal Highway Administration (FHWA), presiding

Surendra Chowda Gatiganti, National Center for Asphalt Technology (NCAT), presiding

Sponsored By Section - Pavements, Section - Pavements, Subcommittee on Sustainable and Resilient Pavements, Subcommittee on Young Members

This poster session highlights research related to pavement resilience, Urban Heat Island and cool pavement strategies, environmental life cycle assessment, pavement social impacts, and recycled materials.

Assessment of Climate Change Impacts on Life-Cycle Performance and Costs of Highway Asphalt Pavements in Eastern China (TRBAM-24-01288) - A323

Linyi Yao/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Fujian Ni/Hong Kong Polytechnic University, Guoyang Lu/Hong Kong Polytechnic University, Jiwang Jiang/Hong Kong Polytechnic University

-Understanding Thermal and Mechanical Properties of Cool Pavement Coatings for Urban Heat Island Mitigation (TRBAM-24-01875) - A322

Jolina Karam/Arizona State University, Portia Lartey/Arizona State University, Mohammed Alhozaimy/Arizona State University, Jose Medina/Arizona State University, Ryan Stevens/Arizona State University, Kamil Kaloush/Arizona State University

Assessing the Microwave Healing Characterization of Asphalt Mixtures Incorporating Coal Gasification Slag (TRBAM-24-03336) - A321

Rui-meng Song/Chang'an University, Aimin Sha/Chang'an University, Wenxiu Jiao/Chang'an University, Jiarong Li/Chang'an University

Laboratorial Investigation on Optical, Thermal, and Mechanical Properties of Biomimetic Dark Reflective Coatings with Composite Structure for Pavement Cooling (TRBAM-24-03995) - A320

Xue Zhang/Tongji University, Hui Li/Tongji University, Ming Jia/Tongji University, Ning Xie/Tongji University, Lei Wang/Tongji University, Kelei Li/Tongji University

Investigation on Mixed Reflection Behavior of Cool Pavement Coating and Its Influence on Light Environment (TRBAM-24-04055) - A333

Lei Wang/Tongji University, Hui Li/Tongji University, Ning Xie/Tongji University, Xue Zhang/Tongji University, Yuzhao Han/Tongji University, Yiding Liu/Tongji University

Investigation of Sound Absorption Characteristics of Rubberized Porous Asphalt Mixture for Tire Pavement Noise Reduction (TRBAM-24-00752) - A332

Lei Xu/Tongji University, Hangtian Ni/Tongji University, Daquan Sun/Tongji University, Mingjun Hu/Tongji University, Zhongbo Chen/Tongji University, Yufeng Tian/Tongji University

Sustainable Innovation Processes in the Asphalt Paving Sector: Analysis of Actors, Interactions, and Institutions (TRBAM-24-00822) - A331

Angie Ruiz Robles/University of Twente, João Santos/University of Twente, Joanne Vinke de Kruijff/University of Twente, Leentje Volker/University of Twente, André Dorée/University of Twente

Toward a Sustainable Highway: Exploring Resilient Pavement and Reclaimed Modified Asphalt Solutions (TRBAM-24-01549) - A330

Jian-Shiuh Chen/National Cheng Kung University, Chin Yang/National Cheng Kung University

Using Sensing, Statistical, and Numerical Analysis Approaches to Evaluate the Performance of Highway Pavement Under the Impact of Climate Change (TRBAM-24-02137) - A343

Chun-Hsing Ho/University of Nebraska, Lincoln, Kewei Zen/University of Nebraska, Lincoln, Dada Zhang/University of Nebraska, Lincoln

Quantitative Measures of Social Sustainability for Pavements (TRBAM-24-02304) - A342

Egemen Okte/University of Massachusetts, Amherst, Jessica Boakye/University of Massachusetts, Amherst, Mark Behrend/University of Massachusetts, Amherst

Environmental Damage Cost of Ontario Road Pavement Condition (TRBAM-24-02726) - A381

Jessica Achebe/McMaster University, Susna Tighe/McMaster University, Rebecca saari/McMaster University, Ushnik Mukherjee/McMaster University, Alex Penlidis/McMaster University

Life-Cycle Assessment–Based Impact Assessment of Climate Change on Highway Pavements (TRBAM-24-02854) - A353

Jieying Zhang/National Research Council, Canada, Mohammad Shafiee/National Research Council, Canada, Geoffrey Guest/National Research Council, Canada, Jaitegh Singh/National Research Council, Canada, Hessam AzariJafari/National Research Council, Canada, Farzad Jalaei/National Research Council, Canada

Natural Rubber Latex Modified Asphalt Mixtures: Performance Predictions Using Pavement Mechanistic-Empirical Design and Life-Cycle Cost Analysis (TRBAM-24-03481) - A352

Fardzanela Suwanto/University of Nottingham, Ahmed Abed/University of Nottingham, Gordon Airey/University of Nottingham, Tony Parry/University of Nottingham, Nick Thom/University of Nottingham

A Comparative Life-Cycle Assessment of Chemically Stabilized Gravel Road (TRBAM-24-03740) - A363

Md Islam/Michigan State University, Angela Farina/Michigan State University, Bora Cetin/Michigan State University, Annick Anctil/Michigan State University

Evaluating the Impact of Modified Post-Consumer Plastic and Fiber Additives on Asphalt Mixtures (TRBAM-24-04049) - A362

Julissa Larios Rodriguez/University of Nevada, Reno, Peter Sebaaly/University of Nevada, Reno, Elie Hajj/University of Nevada, Reno, Adam Hand/University of Nevada, Reno, Edgard Hitti/University of Nevada, Reno

(continued)

A Short-Term Performance of Recycled Pavement Sections in Virginia (TRBAM-24-04452) - A373

Carolina Benavides-Ruiz/Virginia Polytechnic Institute, Gerardo Flintsch/Virginia Polytechnic Institute, Brian Diefenderfer/Virginia Polytechnic Institute, Bilin Tong/Virginia Polytechnic Institute

Markov Model of Asphalt Pavement Including Internal Deterioration for Evaluating Life-Cycle Costs (TRBAM-24-05030) - A372

Yuya Wakabayashi/National Institute for Land and Infrastructure Management, Eiji Hato/National Institute for Land and Infrastructure Management, Kazuhiro Watanabe/National Institute for Land and Infrastructure Management

UPDAPS-Flood: A Mechanistic-Empirical Flexible Pavement Analysis Tool to Evaluate the Effect of Flooding Events on Flexible Pavement Performance (TRBAM-24-05859) - A383

Seyed Farhad Abdollahi/Michigan State University, Muhammed Emin Kutay/Michigan State University, Michele Lanotte/Michigan State University

Evaluation of Climate Change Impact on Asphalt Pavement in Arizona (TRBAM-24-06022) - A382

Taslina Akter Elma/North Carolina State University, Shane Underwood/North Carolina State University

4068



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Traffic Flow Theory, Part 3: Network Modeling and On-Demand Mobility (Part 1, Session 2233; Part 2, Session 2234; Part 4, Session 4069)

Allister Loder, TU Munich, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

Integrating Regional Traffic Models for Ridehailing Systems in a Multi-Layer Repositioning Framework (TRBAM-24-00625) - A143

Caio Vitor Beojone/Ecole Polytechnique Federale de Lausanne (EPFL), Pengbo Zhu/Ecole Polytechnique Federale de Lausanne (EPFL), Isik Sirmatel/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Joint Routing and Pricing Control in Bimodal Mixed Autonomy Networks with Elastic Demand and Three-Dimensional Passenger Macroscopic Fundamental Diagram (TRBAM-24-01451) - A151

Mohammadhadi Mansourianfar/University of New South Wales, Ziyuan Gu/University of New South Wales, Meead Saberi/University of New South Wales

Spatial-Temporal Graph Convolution Network Model with Traffic Fundamental Diagram Information for Network Traffic Flow Prediction (TRBAM-24-01661) - A141

Zhao Liu/Southeast University, Fan Ding/Southeast University, Yunqi Dai/Southeast University, Huachun Tan/Southeast University, Jiankun Peng/Southeast University, Yu Han/Southeast University

A Two-Stage Framework for Parking Behavior Prediction Based on Generative Adversarial Imitation Learning and Transformer (TRBAM-24-05199) - A120

Tianyi Ji/Tongji University, Cong Zhao/Tongji University, Jing Chen/Tongji University, Shengchuan Jiang/Tongji University, Yuchuan Du/Tongji University

Impacts of Shared Autonomous Vehicles Connecting with Mass Rapid Transit System on Transformation of Mobility: A Cyber-Physical Experiment Approach (TRBAM-24-06462) - A111

Pham Son/Hiroshima University, Akimasa Fujiwara/Hiroshima University, Makoto Chikaraishi/Hiroshima University, Hyewon Namgung/Hiroshima University, Thi Anh Hong Nguyen/Hiroshima University, Canh Do/Hiroshima University, Son Le/Hiroshima University, Nang Ho/Hiroshima University

Investigation of Traffic Congestion and Safety Indices Using Trajectory Data Collected with Drones (TRBAM-24-01742) - A142

Jasso Espadaler-Clapés/Ecole Polytechnique Federale de Lausanne (EPFL), Robert Fonod/Ecole Polytechnique Federale de Lausanne (EPFL), Emmanouil Barmounakis/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Dynamic Ride-Sourcing Optimization through Spatially Aggregated Flow Maximization (TRBAM-24-06235) - A132

Minru Wang/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Partitioning Multimodal Urban Traffic Networks for Deriving Well-Shaped, Three-Dimensional Fundamental Diagrams (TRBAM-24-01649) - A113

Siyi Tang/Southwest Jiaotong University, Fangfang Zheng/Southwest Jiaotong University, Nan Zheng/Southwest Jiaotong University, Xiaobo Liu/Southwest Jiaotong University

(continued)

Estimating Critical Parameters for Macroscopic Fundamental Diagram Models Based on Incomplete License Plate Recognition Data (TRBAM-24-01680) - A130

Cheng Hu/Central South University, Jinjun Tang/Central South University, Ke Ji/Central South University

Characterizing On-Street Cruising-for-Parking in Agent-Based Microscopic Simulation Using Gaussian Process Regression (TRBAM-24-03782) - A152

Zhi Cao/Southeast University, Zhiyuan Liu/Southeast University, Ziyuan Gu/Southeast University, Kai Huang/Southeast University

Integrated Feedback Perimeter Control-Based Ramp Metering and Variable Speed Limits for Multi-Bottleneck Freeways (TRBAM-24-03933) - A131

Ziang He/Southeast University, Yu Han/Southeast University, Pan Liu/Southeast University

Influence of Public Transportation in Munich: An Empirical MFD Traffic Analysis (TRBAM-24-06466) - A110

Yamam Alayasreih/Technical University of Munich, Allister Loder/Technical University of Munich, Klaus Bogenberger/Technical University of Munich, Anna Takayasu/Technical University of Munich

Spatial Partitioning for Road Networks: Insights from Incomplete License Plate Recognition Data (TRBAM-24-01668) - A140

Cheng Hu/Central South University, Jinjun Tang/Central South University, Ke Ji/Central South University

Research on On-Ramp Merging Strategy Based on Dual-Layer Optimization Model Predictive Control (TRBAM-24-03218) - A121

Xuemei Chen/Beijing Institute of Technology, Jiachen Hao/Beijing Institute of Technology, Jiahe Liu/Beijing Institute of Technology

A New Multi-Region, Trip-Based Model for the Coupled Road Parking System (TRBAM-24-03979) - A150

Yang Cao/Southeast University, Zhiyuan Liu/Southeast University, Ziyuan Gu/Southeast University

Application of Transfer Learning for Proactive Ramp Metering Performance Assessment (TRBAM-24-03190) - A122

Xiaobo Ma/University of Arizona, Adrian Cottam/University of Arizona, Mohammad Shaon/University of Arizona, Yao-Jan Wu/University of Arizona

Fostering Cooperation Between Public Transport and On-Demand Services Through Tradable Credits: A Modeling Framework Based on the Trip-Based Macroscopic Fundamental Diagram (TRBAM-24-00361) - A103

Louis Balzer/Universite Gustave Eiffel, Ludovic Leclercq/Universite Gustave Eiffel

Multimodal Traffic Management Optimization Using Gaussian Process and Pareto-Based, Multi-Objective, Evolutionary Approach (TRBAM-24-02503) - A102

Mélanie Cortina/Universite Gustave Eiffel, Mina Khalesian/Universite Gustave Eiffel, Ludovic Leclercq/Universite Gustave Eiffel

Distributed Perimeter Control for Urban Road Network Considering Heterogeneous Cordon Traffic Conditions (TRBAM-24-04214) - A101

Jiajie Yu/Southeast University, Pierre-Antoine Laharotte/Southeast University, Yu Han/Southeast University, Ludovic Leclercq/Southeast University

A Community Charging-Oriented Electric Vehicle Traffic Assignment Model with Link Interaction (TRBAM-24-05892) - A112

Yang Song/Pennsylvania State University, Xianbiao Hu/Pennsylvania State University

Pedestrian Flow Control in Solid Networks of Railway Stations Based on Pedestrian Macroscopic Fundamental Diagrams (TRBAM-24-03154) - A133

Wanling Huang/Guangdong University of Technology, Saifei Chen/Guangdong University of Technology, Hui Fu/Guangdong University of Technology, Jiechu Lu/Guangdong University of Technology

Surrogate-Based, Real-Time, Curbside Management for Ridehailing and Delivery Operations (TRBAM-24-04616) - A100

Suyash Vishnoi/University of Texas, Austin, Michele Simoni/University of Texas, Austin

4069



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Traffic Flow Theory, Part 4: Traffic Modeling, Monitoring, and Control (Part 1, Session 2233; Part 2, Session 2234; Part 3, Session 4068)

Claudio Roncoli, Aalto University, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics

Fundamental Diagram of Mixed Traffic Flow Considering Dedicated and Shared Lanes Management Policies for Connected and Autonomous Vehicles (TRBAM-24-00305) - A173
Tingting Ren/Southwest Jiaotong University, Yi Wang/Southwest Jiaotong University, Zeqi Xu/Southwest Jiaotong University, Zhihong Yao/Southwest Jiaotong University

Stability Analysis of a Leader-Based Connected and Automated Vehicle Platoon with Communication Delays Using Bessel-Legendre Inequalities and the Lyapunov-Krasovskii Stability Theorem (TRBAM-24-02779) - A201
Tiancheng Ruan/Southeast University, Ruan Tiancheng/Southeast University, Hao Wang/Southeast University, Xiaopeng Li/Southeast University

Hybrid Hidden Markov Long Short-Term Memory for Short-Term Traffic Flow Prediction (TRBAM-24-00563) - A172
Agnimitra Sengupta/HNTB Corporation, Adway Das/HNTB Corporation, S. Ilgin Guler/HNTB Corporation

Advancing Non-Recurring Congestion Forecasting: A Novel Approach for Robust, Multi-Step, Spatio-Temporal Prediction (TRBAM-24-02572) - A203
Jing Li/McMaster University, Hao Yang/McMaster University, Saiedeh Razavi/McMaster University, Harith Abdulsattar/McMaster University

Lightweight Multi-Scale Feature Fusion and Global Attention Network for Efficient Crowd Density Estimation (TRBAM-24-03475) - A211
Chenxi Lin/Southeast University, Xiaojian Hu/Southeast University, Yunfei Zhan/Southeast University, dongxin Ji/Southeast University

Trajectory Reconstruction Under the Traffic Oscillation with a Cascaded Model Based on the Interpretable Attention Mechanism (TRBAM-24-04197) - A213
Shan Fang/Chang'an University, Lan Yang/Chang'an University, Xiangmo Zhao/Chang'an University, Guoyuan Wu/Chang'an University, Cheng Wei/Chang'an University

A Fine-Grained, Full-Coverage Highway Traffic Flow Condition Perception Method Based on Heterogeneous Sensor Data Fusion by (TRBAM-24-03922) - A153
Jinyu Zhang/Southeast University, Di Huang/Southeast University, Zhiyuan Liu/Southeast University, Yifei Zheng/Southeast University

Does Anisotropy Hold in Mixed Traffic Conditions? (TRBAM-24-03007) - A200
Nandan Maiti/Indian Institute of Technology, Madras, Bhargava Chilukuri/Indian Institute of Technology, Madras

The Impact of Heavy Vehicles on Headway Distributions: A Study Using Naturalistic Urban Expressway Trajectories (TRBAM-24-04398) - A163
Pedram Beigi/George Washington University, Samer Hamdar/George Washington University, Rami Ammourah/George Washington University, Alireza Talebpour/George Washington University, Hani Mahmassani/George Washington University

On the Fundamental Diagram Considering Non-Localities: A Novel Empirical Methodology (TRBAM-24-01609) - A123
Jing Liu/Southwest Jiaotong University, Fangfang Zheng/Southwest Jiaotong University, Boxi Yu/Southwest Jiaotong University, Saif Jabari/Southwest Jiaotong University

A Tailored, Low-Rank Representation Approach for Freeway Traffic State Estimation Considering Directional Traffic Waves (TRBAM-24-03538) - A212
Menghan Wu/Southeast University, Yang He/Southeast University, Chengchuan An/Southeast University, Zhendong Oian/Southeast University, Jingxin Xia/Southeast University

Review of the Fundamental Diagram of Traffic Flow for Highways (TRBAM-24-04357) - A223
Anupriya -/Imperial College London, Prateek Bansal/Imperial College London, Daniel Graham/Imperial College London

Game Theoretic Modeling of Vehicles' Unprotected Left Turn Considering Drivers' Bounded Rationality (TRBAM-24-01902) - A182
Yuansheng Lian/Tsinghua University, Ke Zhang/Tsinghua University, Meng Li/Tsinghua University, Shen Li/Tsinghua University

Variable Speed Limit Control Strategy for Freeway Tunnels: A Multi-Objective Deep Reinforcement Learning Framework with Safety Perception (TRBAM-24-02056) - A193
Jieling Ji/Central South University, Ye Li/Central South University, Helai Huang/Central South University, Gongquan Zhang/Central South University, Yuxuan Dong/Central South University

A Link Transmission Model with Variable Speed Limits and Turn-Level Queue Transmission at Signalized Intersections (TRBAM-24-02685) - A202
Lei Wei/Technische Universität Dresden, Steven Travis Waller/Technische Universität Dresden, Yu Mei/Technische Universität Dresden, Yunpen Wang/Technische Universität Dresden, Meng Wang/Technische Universität Dresden

(continued)

Online Vehicle Routing for Urban Road Networks with Mixed Traffic Flows: A Multi-Agent Reinforcement Learning Approach (TRBAM-24-05414) - A222

Yuhan Li/Tongji University, Yumin Cao/Tongji University, Hong Zhu/Tongji University, Keshuang Tang/Tongji University

Crowd Safety Manager Toward Data-Driven Active Decision Support for Planning and Control of Crowd Events (TRBAM-24-02149) - A192

Panchamy Krishnakumari/Technische Universiteit, Delft, Sascha Hoogendoorn-Lanser/Technische Universiteit, Delft, Jeroen Steenbakkens/Technische Universiteit, Delft, Serge Hoogendoorn/Technische Universiteit, Delft

A Close Look into the Spatio-Temporal Distribution of

Speed, Lane Changes, and Heavy Vehicles in a Congested Freeway Weaving Section (TRBAM-24-06069) - A162

Nachuan Li/Northwestern University, Hani Mahmassani/Northwestern University, Yanlin Zhang/Northwestern University, Alireza Talebpour/Northwestern University, Samer Hamdar/Northwestern University

Safety Evaluation and Influential Factors Analysis of Urban Expressway Diversion Area Based on Non-Stationary Conflict Extremes (TRBAM-24-00775) - A183

Jiaqiang Wen/Wuhan University of Technology, Chunqing Liu/Wuhan University of Technology, Nengchao Lyu/Wuhan University of Technology

Development of Equal Capacity Passenger Car Equivalents for Trucks on Freeways in Brazil (TRBAM-24-03361) - A210

Larckson Marra/USP: Universidade de Sao Paulo, José Setti/USP: Universidade de Sao Paulo

4070



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Safety Impact on Road Users Including Pedestrians, Bicyclists, and Others

Karen Dixon, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Safety Performance and Analysis

Evaluating the Reliability of Automatically Generated Pedestrian and Bicycle Crash Surrogates (TRBAM-24-00193) - A220

Agnimitra Sengupta/HNTB Corporation, S. Ilgin Guler/HNTB Corporation, Vikash Gayah/HNTB Corporation, Shannon Warchol/HNTB Corporation

A Probabilistic Framework for Estimating the Risk of Pedestrian-Vehicle Conflicts at Intersections (TRBAM-24-00391) - A221

Pei Li/University of Wisconsin, Madison, Huizhong Guo/University of Wisconsin, Madison, Shan Bao/University of Wisconsin, Madison, Arpan Kusari/University of Wisconsin, Madison

An In-Depth Investigation into Factors Influencing Pedestrian Crash Severity: Comparative Analysis of Ordered Probit, Stacking Ensemble Model, and TabNet (TRBAM-24-00826) - A230

Amir Rafe/Utah State University, Mohammad Ali Arman/Utah State University, Patrick Singleton/Utah State University

Traffic Accident Severity Prediction of Rural Two-Lane Highways Using Machine Learning: A Case Study in China (TRBAM-24-00955) - A231

Jingyang Li/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Fengxiang Guo/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Bijiang Tian/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Feng Zhu/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention, Wenchen Yang/National Engineering Laboratory for Surface Transportation Weather Impacts Prevention

Exploring Risk Factors Associated with Pedestrian Crash Severity: Accounting for Spatial Heterogeneity and Out-of-Sample Prediction (TRBAM-24-00966) - A232

Qianfang Wang/South China University of Technology, Pengpeng Xu/South China University of Technology, Keke Zhang/South China University of Technology, Qiang Zeng/South China University of Technology

Prediction of Jaywalker-Vehicle Conflicts Based on Encoder-Decoder Framework Utilizing Multi-Source Data (TRBAM-24-00998) - A233

Ziqian Zhang/Southeast University School of Transportation, Haojie Li/Southeast University School of Transportation

Contributing Factors of Pedestrian Injury Severities in Pedestrian-Vehicle Crashes with Drivers of Different Route Familiarity Levels (TRBAM-24-01053) - A240

Gang Xue/Guangdong Polytechnic Normal University, Huiying Wen/Guangdong Polytechnic Normal University

An Evaluation of Door Zone Crashes Between Bicycles and Parked Vehicles (TRBAM-24-01058) - A241

Cadell Chand/Oregon State University, Hisham Jashami/Oregon State University, Logan Scott-Deeter/Oregon State University, Peter Koonce/Oregon State University, David Hurwitz/Oregon State University

(continued)

Estimating Pedestrian Crash Risks from Autonomous Vehicle Sensor Data by Applying Traffic Conflict Techniques with Extreme Value Theory Models (TRBAM-24-01198) - A242

Sunny Singh/QUT: Queensland University of Technology, Yasir Ali/QUT: Queensland University of Technology, Md. Mazharul Haque/QUT: Queensland University of Technology

Investigating Pedestrian–Vehicle Crashes on Interstate Highways: Applying Random Parameter Logit Model (TRBAM-24-01315) - A310

Ahmed Hossain/University of Louisiana, Lafayette, Xiaoduan Sun/University of Louisiana, Lafayette, Subasish Das/University of Louisiana, Lafayette, Monire Jafari/University of Louisiana, Lafayette, M. Ashifur Rahman/University of Louisiana, Lafayette

A Copula-Based Approach for Modeling Pedestrian Crash Frequency (TRBAM-24-01894) - A253

Deorishabh Sahu/Indian Institute of Technology, Roorkee, Kaliprasana Muduli/Indian Institute of Technology, Roorkee, Indrajit Ghosh/Indian Institute of Technology, Roorkee

A Comprehensive Investigation of Pedestrian Hit-and-Run Crashes: Applying XGBoost and Binary Logistic Regression Model (TRBAM-24-02061) - A311

Ahmed Hossain/University of Louisiana, Lafayette, Xiaoduan Sun/University of Louisiana, Lafayette, Ahmed Hasan/University of Louisiana, Lafayette, Mohammad Jalayer/University of Louisiana, Lafayette, Julius Codjoe/University of Louisiana, Lafayette

In-Depth Assessment of High-Visibility Crosswalks: Accounting for Regional and Configuration Characteristics Using a Correlated Grouped Random Parameters Approach with Means Heterogeneity (TRBAM-24-02153) - A250

Kaiser Mahmood/Beta Group, Inc., Sheikh Ahmed/Beta Group, Inc., Jiajun Pang/Beta Group, Inc., Md Tawfiq Sarwar/Beta Group, Inc., Irina Benedyk/Beta Group, Inc., Panagiotis Anastasopoulos/Beta Group, Inc.

Pedestrian and Bicycle Safety Assessment at Commercial Driveways Along Major Corridors (TRBAM-24-02289) - A251

Cong Chen/University of South Florida, Kristine Williams/University of South Florida, Pei-Sung Lin/University of South Florida, Shubhankar Chintamani Shindgikar/University of South Florida, Elzbieta Bialkowska-Jelinska/University of South Florida, Tia Boyd/University of South Florida

Predicting Bicycle-Involved Crashes in the Southern California Association of Governments Region: A Machine Learning Analysis Using Highway Safety Information System Data from California (TRBAM-24-02780) - A252

Ramina Javid/Mercer University, Eazaz Sadeghvaziri/Mercer University

Analysis of Lag Time of Pedestrian Fatalities: A Copula Approach (TRBAM-24-02981) - A262

Nafis Anwari/University of Central Florida, Tanmoy Bhowmik/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Naveen Eluru/University of Central Florida, Juneyoung Park/University of Central Florida

Estimation of Real-Time Pedestrian Crash Risk by Severity at Signalized Intersections Using a Non-Stationary Bivariate Extreme Value Model (TRBAM-24-03198) - A243

Hassan Bin Tahir/Queensland University of Technology, Md. Mazharul Haque/Queensland University of Technology

Exploration of Characteristics of Road Closures Caused by Bridge Traffic Accidents: A Case Study in Pennsylvania (TRBAM-24-03816) - A272

Xiyang Chen/Hunan University, Meiling Su/Hunan University, Chenhui Liu/Hunan University

Enhanced Risk Assessment in Pedestrian–Vehicle Interactions at Unsignalized Sections Using the Modified DSF Model (TRBAM-24-03918) - A273

Renfei Wu/Southeast University, Ziwei Yi/Southeast University, Yikang Rui/Southeast University, Bin Ran/Southeast University

Investigating the Complexity of Pedestrian Crashes at Non-Intersection Locations: Applying Association Rules Mining to Reveal the Crash Patterns (TRBAM-24-03973) - A301

Ahmed Hossain/University of Louisiana, Lafayette, Xiaoduan Sun/University of Louisiana, Lafayette, Md. Rabbi/University of Louisiana, Lafayette, Shahrin Islam/University of Louisiana, Lafayette

Application of an XGBoost Approach for Pedestrian Surrogate Safety Analysis: A Case Study in Intersections with Bus Rapid Transit Stations and Bus Stops in Mexico City (TRBAM-24-04264) - A280

Alejandro Perez Villaseñor/McGill University, Luis Miranda-Moreno/McGill University, Lynn Scholl/McGill University, Eduardo Adame Valenzuela/McGill University, Cansu Alakuş/McGill University

Predicting Pedestrian-Involved Crash Severity Using the Inception-v3 Deep Learning Model (TRBAM-24-04714) - A293

Md Nasim Khan/AtkinsRéalis, Subasish Das/AtkinsRéalis, Jinli Liu/AtkinsRéalis

Investigating Pedestrian Groups and Injury Severities in Ghana: A Latent Class Analysis with Mixed Logit Approach (TRBAM-24-04777) - A281

Jeffrey Bullard/University of Alabama, Tuscaloosa, Emmanuel Adanu/University of Alabama, Tuscaloosa, Jun Liu/University of Alabama, Tuscaloosa, William Agyemang/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

(continued)

Assessing the Impact of Vehicle Type on Pedestrian and Bicyclist Crash Injury Severity (TRBAM-24-05020) - A282

Faria Raha/Northern Arizona University, Brendan Russo/Northern Arizona University, Steven Gehrke/Northern Arizona University

Developing a Crash Modification Factor for Intersection Corner Radius (TRBAM-24-05068) - A283

Raul Avelar/Insurance Institute for Highway Safety, Kay Fitzpatrick/Insurance Institute for Highway Safety, Michael Pratt/Insurance Institute for Highway Safety

Assessing Hit-and-Run Cases in Pedestrian-Vehicle Collisions Using the Probabilistic Graphical Method (TRBAM-24-05240) - A302

Subasish Das/Texas State University, Nazmus Sakib/Texas State University, Xiaobing Li/Texas State University, Mohammad Jalayer/Texas State University, Srinivas Geedipally/Texas State University, Zihang Wei/Texas State University

Exploring the Context of Roadway Geometry and Operational Characteristics in Severe Pedestrian Crashes: Application of Association Rule Mining (TRBAM-24-05415) - A303

M. Ashifur Rahman/Louisiana Transportation Research Center (LTRC), Ahmed Hossain/Louisiana Transportation Research Center (LTRC), Elisabeta Mitran/Louisiana Transportation Research Center (LTRC), Julius Codjoe/Louisiana Transportation Research Center (LTRC), Subasish Das/Louisiana Transportation Research Center (LTRC), Xiaoduan Sun/Louisiana Transportation Research Center (LTRC)

Assessing Causation of Bicycle Crashes Through Bayesian Network Modeling (TRBAM-24-05637) - A312

Subasish Das/Texas State University, Anandi Dutta/Texas State University, David Mills/Texas State University

Investigating the Spatio-Temporal Characteristics of Vulnerable Road User Crashes at Signalized Intersections (TRBAM-24-05732) - A290

Majeed Algomaiah/VHB, Sahal Alzahrani/VHB, Turkey Arbaein/VHB

Unveiling the Dynamics of Pedestrian and Bicycle Crashes in Connecticut: A Comprehensive Data Exploration (TRBAM-24-05987) - A291

Saki Rezwana/University of Connecticut, Manmohan Joshi/University of Connecticut, Mohammad Shaon/University of Connecticut, Eric Jackson/University of Connecticut

Risk and Contributing Factors of Pedestrian Involved Crashes at Urban Four-Leg Signalized Intersections (TRBAM-24-00660) - A300

Myunghoon Ko/Texas A&M Transportation Institute, Robert Wunderlich/Texas A&M Transportation Institute

A Detailed Study on the Determinants of Pedestrians' Surrogate Safety Measures at Signalized Mid-Block Crossings (TRBAM-24-00927) - A263

Md Jamil Ahsan/University of Central Florida, Mohamed Abdel-Aty/University of Central Florida, Nafis Anwari/University of Central Florida

Prioritization of Strategies for Non-Motorized Transportation: A Multi-Criteria Intuitionistic Fuzzy TOPSIS Method (TRBAM-24-04634) - A292

Ayushi Shah/Sardar Vallabhbhai National Institute of Technology, Surat, Gaurang Joshi/Sardar Vallabhbhai National Institute of Technology, Surat, Manoranjan Parida/Sardar Vallabhbhai National Institute of Technology, Surat

4071



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Transportation Network Modeling Mega Poster Session

Yanfeng Ouyang, University of Illinois, Urbana-Champaign, presiding

Sponsored By Standing Committee on Transportation Network Modeling, Joint Subcommittee on Route Choice and Spatio-Temporal Behavior (with AEP40)

Mega poster session for AEP40 Transportation Network Modeling. This session covers quantitative and computational methodologies to apply network flow and design models to evaluate transportation facilities and services under consideration of various technological, policy, and behavioral factors.

Identification of Optimal Locations of Adaptive Traffic Signal Control Using Heuristic Methods (TRBAM-24-00090) - B514

Tanveer Ahmed/Pennsylvania State University, Hao Liu/Pennsylvania State University, Vikash Gayah/Pennsylvania State University

An Analytical Model for Parking Infrastructure and Fleet Size Planning in Shared Autonomous Vehicle Systems with Spatio-Temporal Heterogeneity (TRBAM-24-00180) - B524

Seongjin Choi/Korea Advanced Institute of Science and Technology (KAIST), Jinwoo Lee/Korea Advanced Institute of Science and Technology (KAIST)

How Would Mobility-as-a-Service Platform Survive as an Intermediary?: From the Viewpoint of Stability in Many-to-Many Matching (TRBAM-24-00256) - B554

Rui Yao/Ecole Polytechnique Federale de Lausanne (EPFL), Kenan Zhang/Ecole Polytechnique Federale de Lausanne (EPFL)

A New Spatial Network Optimization Model for Locating Bikesharing Stations (TRBAM-24-00584) - B560

Hung-Chi Liu/Arizona State University, Daoqin Tong/Arizona State University, Michael Kuby/Arizona State University

Leveraging Ridehailing Services for Social Good: Fleet Optimal Routing and System Optimal Pricing (TRBAM-24-00735) - B562

Zemian Ke/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

An Urban Bus Corridor Design Method with Multi-Objective Optimization: A Case in Chongqing, China (TRBAM-24-00786) - B570

Weiyi Long/Southeast University, Jiulonghu, Kun Jin/Southeast University, Jiulonghu, Wei Wang/Southeast University, Jiulonghu, De Zhao/Southeast University, Jiulonghu

Design and Analysis of Ridesourcing Services with Auxiliary Autonomous Vehicles for Transportation Hubs in Multimodal Transportation Systems (TRBAM-24-00969) - B572

Meng XU/Hong Kong University of Science and Technology, Yining Di/Hong Kong University of Science and Technology, Zheng Zhu/Hong Kong University of Science and Technology, Hai Yang/Hong Kong University of Science and Technology, Xiqun Chen/Hong Kong University of Science and Technology

A Batch Bayesian Optimization Method for Transportation Problems Fusing Multi-Fidelity Traffic Simulators (TRBAM-24-01007) - B530

Anfeng Jiang/Southeast University, Jinbiao Huo/Southeast University, Zhiyuan Liu/Southeast University, Ziyuan Gu/Southeast University

Inverse Optimization for Routing Problems (TRBAM-24-01155) - B573

Pedro Zattoni Scroccaro/Technische Universiteit Delft, Piet van Beek/Technische Universiteit Delft, Peyman Mohajerin Esfahani/Technische Universiteit Delft, Bilge Atasoy/Technische Universiteit Delft

A Modeling Framework for the Three-sided Network Equilibrium in On-Demand Food Delivery Service (TRBAM-24-01273) - B574

Kaihang Zhang/University of Hong Kong, Jintao Ke/University of Hong Kong

Leveraging Connected and Automated Vehicles for Participatory Traffic Control (TRBAM-24-01280) - B592

Minghui Wu/University of Michigan, Ben Wang/University of Michigan, Yafeng Yin/University of Michigan, Jerome Lynch/University of Michigan

An Alternating Direction Method of Multipliers Based on Successive Over Relaxation Splitting Method with Application to Traffic Assignment Problem (TRBAM-24-01495) - B532

Honggang Zhang/Southeast University, Yu Dong/Southeast University, Zhiyuan Liu/Southeast University

A Distributed Computing Method Integrating Improved Gradient Projection for Solving Stochastic Traffic Equilibrium Problem (TRBAM-24-01491) - B531

Honggang Zhang/Southeast University, Yicheng Zhang/Southeast University, Zhiyuan Liu/Southeast University

Eco-Routing Incentives: Multiclass Traffic Congestion Management for Sustainable Transportation (TRBAM-24-01542) - B584

Mingye Luan/UNSW: University of New South Wales, Taha Rashidi/UNSW: University of New South Wales, S.Travis Waller/UNSW: University of New South Wales, David Rey/UNSW: University of New South Wales

A Dynamic Bus Replacement Strategy for Electric Bus Charging Scheduling (TRBAM-24-01605) - B594

Wei Wu/Hong Kong Polytechnic University, Bing Zeng/Hong Kong Polytechnic University, Yang Liu/Hong Kong Polytechnic University, Tangzhi Liu/Hong Kong Polytechnic University, Wei Liu/Hong Kong Polytechnic University

Collaborative Routing for Human Driven Vehicles Using Sustainable Personalized Incentive Mechanisms (TRBAM-24-01759) - B600

Chaojie Wang/Georgia Institute of Technology, Srinivas Peeta/Georgia Institute of Technology

Strategic Coopetition Among Transportation Service Operators Considering Supply-Demand Congestion Effects and Asymmetric Market Power (TRBAM-24-01766) - B601

Wentao Huang/Hong Kong University, Yanyan Ding/Hong Kong University, Sisi Jian/Hong Kong University

Modeling Multimodal Curbside Usage in Dynamic Networks: A Computational Graph Approach (TRBAM-24-02334) - B563

Jiachao Liu/Carnegie Mellon University, Sean Qian/Carnegie Mellon University

(continued)

Entropy Maximization in Multi-Class Traffic Assignment (TRBAM-24-01836) - B551

Qianni Wang/Northwestern University, Liyang Feng/Northwestern University, Jiayang Li/Northwestern University, Jun Xie/Northwestern University, Yu Nie/Northwestern University

Dynamic Calibration of Carsharing System in MATSim (TRBAM-24-02510) - B602

Idriss El Megzari/Ecole Polytechnique de Montreal, Francesco Ciari/Ecole Polytechnique de Montreal, Jean Marc Frayret/Ecole Polytechnique de Montreal

Modeling Sustainable Mobility Futures Using an Automated Process of Road Space Reallocation in Urban Street Networks: A Case Study in Zurich (TRBAM-24-02575) - B603

Lukas Ballo/Swiss Federal Institute of Technology (ETH Zurich), Kay Axhausen/Swiss Federal Institute of Technology (ETH Zurich)

Express Bus Service Design for Accessibility and Equity Improvement (TRBAM-24-02612) - B550

Tianxing Dai/Northwestern University, Hani Mahmassani/Northwestern University, Yu Nie/Northwestern University

Planning Service Protocols for Extra-Long Trains with Transfers (TRBAM-24-02894) - B533

Jesus Osorio/University of Illinois, Urbana-Champaign, Shiyu Shen/University of Illinois, Urbana-Champaign, Yanfeng Ouyang/University of Illinois, Urbana-Champaign

A Systematic Evaluation of Deep Learning Methods for Transit Passenger Demand Prediction (TRBAM-24-02924) - B604

Tianzhuo Li/Drexel University, Yucong Hu/Drexel University, Zhiwei Chen/Drexel University

Wireless Mobile Charging in Freight Transport Services: Optimal Routing Strategies (TRBAM-24-03117) - B605

Kechen Ouyang/Nanyang Technological University, David Wang/Nanyang Technological University

Optimal Design of Fixed-Route and Demand-Responsive Transit with a Dynamic Stop Strategy (TRBAM-24-03388) - B540

Yunyu Zhang/Beijing Jiaotong University, Sida Luo/Beijing Jiaotong University, Aojie Zu/Beijing Jiaotong University, Tian Zeng/Beijing Jiaotong University, Chunfu Shao/Beijing Jiaotong University

Conventional Public Transit Network Design Under Impacts of Rail Transit in Urban Centers (TRBAM-24-03391) - B541

Ping Chen/Beijing Jiaotong University, Sida Luo/Beijing Jiaotong University, Jinpei Li/Beijing Jiaotong University, Kunzheng Wang/Beijing Jiaotong University, Tian Zeng/Beijing Jiaotong University, Chunfu Shao/Beijing Jiaotong University

Optimal Design of Transit Networks Fed by Shared Bikes Atop a Ring-Radial Network (TRBAM-24-03411) - B542

Zhuowei Wang/Beijing Jiaotong University, Yuxuan Liu/Beijing Jiaotong University, Xiaomeng Qin/Beijing Jiaotong University, Sida Luo/Beijing Jiaotong University, Kunzheng Wang/Beijing Jiaotong University, Chunfu Shao/Beijing Jiaotong University

Effect of Policy Mix on Urban Road Network Capacity Assessment Considering Shared Mobility (TRBAM-24-03473) - B606

ZiYan Ju/Hohai University, Muqing Du/Hohai University

Planning Charging Infrastructure in Parking Lots by Integrating Fixed and Mobile Charging Modes (TRBAM-24-03615) - B607

Chao Lei/Shanghai Maritime University, Phuwadon Waiyanet/Shanghai Maritime University, Pei Wang/Shanghai Maritime University

A Multimodal Network Equilibrium Model Considering Captive Travelers and Mode Correlation (TRBAM-24-03654) - B608

Guangchao Wang/Massachusetts Institute of Technology, Defeng Song/Massachusetts Institute of Technology, Juanhua Zhou/Massachusetts Institute of Technology, Hang Qi/Massachusetts Institute of Technology, Zhengbing He/Massachusetts Institute of Technology

Multimodal User Equilibrium and System Optimum in Urban Transport Systems Including Shared Mobility Services (TRBAM-24-03718) - B609

Khadidja Kadem/Université Gustave Eiffel, Mostafa Ameli/Université Gustave Eiffel, Mahdi Zargayouna/Université Gustave Eiffel, Latifa Oukhellou/Université Gustave Eiffel

Markov Game for Constant Velocity Joint Adaptive Routing in Stochastic Traffic Networks: A Scalable Learning Approach (TRBAM-24-03830) - B610

Yang Shan/National University of Singapore, Yang Liu/National University of Singapore

The Impact of Vehicle Electrification on Large-Scale Transportation and Charging Infrastructure: A Dynamic Network Modeling Approach (TRBAM-24-04047) - B564

Qiling Zou/Carnegie Mellon University, Sean Qian/Carnegie Mellon University, Duane Detwiler/Carnegie Mellon University, Rajeev Chhajer/Carnegie Mellon University

A Unified Framework for End-to-End Transportation Network Equilibrium Modeling (TRBAM-24-04054) - B593
 Zhichen Liu/University of Michigan, Yafeng Yin/University of Michigan, Fan Bai/University of Michigan, Donald Grimm/University of Michigan

Optimization of Multimodal Shared Mobility Networks for Energy Efficiency (TRBAM-24-04056) - B611
 Wan Li/Oak Ridge National Laboratory, Shiqi Ou/Oak Ridge National Laboratory

Designing an Autonomous Mobility-on-Demand Service for Transit Last-Mile Access (TRBAM-24-04087) - B612
 Ali Aalipour/University of Minnesota, Twin Cities, Alireza Khani/University of Minnesota, Twin Cities

Correlated Connected and Automated Vehicles En Route Routing for Congestion Mitigation (TRBAM-24-04110) - B522
 Xiaoyu Ma/Rensselaer Polytechnic Institute (RPI), Xiaozheng (Sean) He/Rensselaer Polytechnic Institute (RPI)

Stackelberg Pricing in Mobility-as-a-Service Platforms with Stochastic Coalitional Matching (TRBAM-24-04120) - B613
 Bingqing Liu/New York University, David Watling/New York University, Joseph Chow/New York University

Encounter Network and Its Application to Study Epidemic Spreading Through Public Transportation Network (TRBAM-24-04126) - B614
 Behnam Tahmasbi/University of Maryland, College Park, Farnoosh Roozkhosh/University of Maryland, College Park, Xiobai Yao/University of Maryland, College Park

New Algorithmic Advances for Uncapacitated Transportation Network Design Problems (TRBAM-24-04141) - B582
 Zhaoyao Bao/Tongji University, Chi Xie/Tongji University

Optimizing On-Street Parking Allocation for Multiple Users Considering Double Parking Impacts (TRBAM-24-04163) - B523
 Xiaoyu Ma/Rensselaer Polytechnic Institute (RPI), Xiaozheng (Sean) He/Rensselaer Polytechnic Institute (RPI), Jose Holguin-Veras/Rensselaer Polytechnic Institute (RPI)

A Graph Neural Networks Model to Generate Transportation Test Networks (TRBAM-24-04182) - B615
 Hojjat Barati/Stony Brook University, Anil Yazici/Stony Brook University, Amir Almotahari/Stony Brook University

Use of Graph Attention Networks for Traffic Assignment (TRBAM-24-04225) - B583
 Xiuyu Hu/Tongji University, Chi Xie/Tongji University

Public Transport Route Choice Model Based on Trajectory Data and Feature Importance Derived from Clustering Analysis (TRBAM-24-04247) - B616
 gal bekerovich/Technion - Israel Institute of Technology, Shlomo Bekhor/Technion - Israel Institute of Technology

Heuristic Approaches for the Electric Vehicle Scheduling Problem: Large-Scale Application with Next-Day Operability Constraints (TRBAM-24-04303) - B512
 Amir Davatgari/Argonne National Laboratory, Taner Cokyasar/Argonne National Laboratory, Omer Verbas/Argonne National Laboratory, Abolfazl (Kouros) Mohammadian/Argonne National Laboratory

Predictive Vehicle Repositioning for On-Demand Ridepooling Services (TRBAM-24-04415) - B553
 Roman Engelhardt/Technische Universitat Munchen, Hani Mahmassani/Technische Universitat Munchen, Klaus Bogenberger/Technische Universitat Munchen

Optimal Rebalancing and Charging of Shared E-Scooters Using Charging Hubs (TRBAM-24-04532) - B534
 Jesus Osorio/University of Illinois, Urbana-Champaign, Yanfeng Ouyang/University of Illinois, Urbana-Champaign

On the Pricing of High-Capacity, On-Demand, Micro-Transit Services Through Macroscopic Dynamic Modeling (TRBAM-24-04579) - B617
 Lynn Fayed/Ecole Polytechnique Federale de Lausanne (EPFL), Gustav Nilsson/Ecole Polytechnique Federale de Lausanne (EPFL), Nikolas Geroliminis/Ecole Polytechnique Federale de Lausanne (EPFL)

Dynamic Routing of Connected and Automated Vehicles for Improving Network Coverage (TRBAM-24-04609) - B504
 Yilin Wang/Purdue University, Yiheng Feng/Purdue University

Optimizing Trajectory and Lane Changes in Connected Automated Vehicles with a Focus on Freeway Segments with Lane Drops (TRBAM-24-04663) - B520
 Mehrdad Tajalli/North Carolina State University, Ramin Niroumand/North Carolina State University, Ali Hajbabaie/North Carolina State University

A Lagrangian Relaxation Approach for Resource Allocation Problem with Capacity Constraints (TRBAM-24-04878) - B521
 Demetra Protogyrou/North Carolina State University, Leila Hajibabai/North Carolina State University

Local Area Directional Network Fundamental Diagrams for Travel Time Estimation in Dynamic Rideshare Fleet Operations (TRBAM-24-04892) - B552
 Sharika Hegde/Northwestern University, Hani Mahmassani/Northwestern University

(continued)

Traffic Assignment and Traffic Flow Learning Using Heterogeneous Graph Neural Networks (TRBAM-24-04952) - B618

Tong Liu/University of Illinois, Urbana-Champaign, Hadi Meidani/University of Illinois, Urbana-Champaign

A Generative Model for Synthetic Population and Activity Data (TRBAM-24-05028) - B619

Eren Arkangil/University of Queensland, Mehmet Yildirimoglu/University of Queensland, Jiwon Kim/University of Queensland, Carlo Prato/University of Queensland

A Label-Correcting Algorithm for Constrained One-to-Many K-Shortest Path Problem with Replenishment (TRBAM-24-05282) - B513

Amir Davatgari/University of Illinois, Chicago, Motahare (Yalda) Mohammadi/University of Illinois, Chicago, Taner Cokyasar/University of Illinois, Chicago, Abolfazl (Kouros) Mohammadian/University of Illinois, Chicago

A Queueing Model and Calibration Algorithm for Signalized Traffic Networks Using GPS Trajectory Data (TRBAM-24-05394) - B620

Ronan Keane/University of Michigan, Henry Liu/University of Michigan

An On-Demand Ridesharing Service with Autonomous Modular Vehicles (TRBAM-24-05427) - B621

Xi Cheng/University of Illinois, Chicago, Jane Lin/University of Illinois, Chicago

An Integrated Strategy for Equitable COVID-19 Vaccine Allocation (TRBAM-24-05494) - B500

Kuangying Li/North Carolina State University, Asya Atik/North Carolina State University, Dayang Zheng/North Carolina State University, Leila Hajibabai/North Carolina State University, Ali Hajbabaie/North Carolina State University

A Bi-Objective, Multi-Class Traffic Assignment Model Considering Reliability and Unreliability of Safety and Travel Time: An α -Reliable Mean-Excess Modeling Approach (TRBAM-24-05678) - B510

Umer Mansoor/Hong Kong Polytechnic University, Guoyuan Li/Hong Kong Polytechnic University, Anthony Chen/Hong Kong Polytechnic University

A Joint Car Ownership and Mode Choice Equilibrium Model Incorporating Autonomous Vehicle Risk Perceptions (TRBAM-24-05679) - B511

Umer Mansoor/Hong Kong Polytechnic University, Yu Gu/Hong Kong Polytechnic University, Guoyuan Li/Hong Kong Polytechnic University, Anthony Chen/Hong Kong Polytechnic University

Delivery Scheduling and Route Planning with Volunteers for Food Pantries Using an Integrated Technique (TRBAM-24-05691) - B501

Asya Atik/North Carolina State University, Kuangying Li/North Carolina State University, Maria Cabarcas/North Carolina State University, Leila Hajibabai/North Carolina State University, Ali Hajbabaie/North Carolina State University

A Temporal-Spatial Allocation Strategy of Bottleneck Capacity for Managing Morning Commute Parking with Human-Driven Vehicle and Autonomous Vehicle Mixed Traffic (TRBAM-24-05994) - B543

Yuxiao Xu/Southwest Jiaotong University, Xuting Wang/Southwest Jiaotong University, Anyu Huang/Southwest Jiaotong University, Zhanbo Sun/Southwest Jiaotong University

Day-to-Day Traffic Control for Networks Mixed with Regular Human-Piloted and Connected Autonomous Vehicles (TRBAM-24-06034) - B622

Qingnan Liang/New York University, Shanghai, Xin-an Li/New York University, Shanghai, Zhibin Chen/New York University, Shanghai, Tianlu Pan/New York University, Shanghai, Renxin Zhong/New York University, Shanghai

Minimize Population Exposure to Vehicle-Generated Emissions by Road Pricing (TRBAM-24-06071) - B544

Yu Tan/Southwest Jiaotong University, Baichuan Zhu/Southwest Jiaotong University, Zhanbo Sun/Southwest Jiaotong University, Ziye Qin/Southwest Jiaotong University, Xuting Wang/Southwest Jiaotong University

Household Activity Pattern Problem with Automated Vehicle-enabled Intermodal Trips (TRBAM-24-06220) - B502

Younghun Bahk/University of California, Irvine, Michael Hyland/University of California, Irvine

A Model-based Reinforcement Learning Method for Energy Consumption Oriented Optimal Variable Speed Limit Control on Freeway Corridor (TRBAM-24-06388) - B623

Hanyi Yang/University of Hawaii, Lili Du/University of Hawaii, Guohui Zhang/University of Hawaii

Re-envisioning the Park-and-Ride Concept for the Automated Vehicle (AV) Era with Private-to-Shared AV Transfer Stations (TRBAM-24-06390) - B503

Younghun Bahk/University of California, Irvine, Michael Hyland/University of California, Irvine, Sunghi An/University of California, Irvine

Joint Route and Departure Time Optimization Under Mixed Traffic Environment: An Agent-Based Approach Based on Bounded Rationality (TRBAM-24-06396) - B624

Yue Shen/Tongji University, Yufan Xiong/Tongji University, Keshuang Tang/Tongji University

Subscription Models for Differential Access to Real-time Information (TRBAM-24-06477) - B625

Anusha Neupane/North Carolina A&T State University, Venktesh Pandey/North Carolina A&T State University, Hyoshin Park/North Carolina A&T State University



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Parking and Curb Management

Benito Perez, Transportation For America, presiding

Lama Bou Mjahed, World Bank, presiding

Sponsored By Standing Committee on Transportation Demand Management

Join the TRB Transportation Demand Management Committee (AEP60) to learn more about various strategies to help reduce vehicle congestion by leveraging creative uses of parking.

Allocation of Validity Rights Bidding for Shared Parking Policy Under Flexible Incentives (TRBAM-24-00091) - B702

Wenli Fan/Fujian University of Technology, Liangpeng Gao/Fujian University of Technology, Wenliang Jian/Fujian University of Technology, Ying-Chih Lu/Fujian University of Technology, Xinwei Ma/Fujian University of Technology, Yanjie Ji/Fujian University of Technology

An Optimal Charging and Parking Scheme for Enhanced Efficiency and Convenience (TRBAM-24-00631) - B715

Haoyu Wang/Southwest Jiaotong University, Ruijie Li/Southwest Jiaotong University, Ruijian Ding/Southwest Jiaotong University

A Spatio-Temporal Dynamic Graph Convolutional Recurrent Network for Vacant Parking Space Prediction (TRBAM-24-00642) - B701

Wenli Fan/Fujian University of Technology, Liangpeng Gao/Fujian University of Technology, Wenliang Jian/Fujian University of Technology, Yang Zhang/Fujian University of Technology, Zhiwei Liu/Fujian University of Technology

A Decentralized Management Mechanism for On-Street Parking Based on Blockchain Technology (TRBAM-24-00859) - B719

Yeganeh Hayeri/Rutgers University, New Brunswick

Exploring the Potential for Unbundling Off-Street Car Parking in Residential Apartment Buildings (TRBAM-24-01434) - B718

Chris De Gruyter/RMIT University, Andrew Butt/RMIT University, Liam Davies/RMIT University

Pricing Curb Parking: Differentiated Parking Fees or Cash Rewards? (TRBAM-24-01492) - B703

Xizhen Zhou/Southeast University, Jiulonghu, Mengqi Lv/Southeast University, Jiulonghu, Xueqi Ding/Southeast University, Jiulonghu, Yanjie Ji/Southeast University, Jiulonghu

Study on the Parking Characteristics and Optimal Parking Space Allocation in the Expressway Service Areas: A Two-Stage Analysis and Optimization Framework (TRBAM-24-01623) - B704

Liang Li/Southeast University, Xueqi Ding/Southeast University, Yanjie Ji/Southeast University

Understanding Drivers' Behavioral Intention to Use Guidance System in Urban Complex Parking Lot Based on the C-TAM-TPB Framework (TRBAM-24-01967) - B716

Guang Yang/Southeast University, Valeria Caiati/Southeast University, Soora Rasouli/Southeast University, Jun Chen/Southeast University

Off-Street Parking at Home: An Assessment of the Adequacy of Residential Parking Requirements in European Cities (TRBAM-24-02053) - B717

Laura Merten/RWTH Aachen University, Tobias Kuhnimhof/RWTH Aachen University

A Multi-Agent, Reinforcement Learning-Based Allocation Model for Efficient Parking Management and Control (TRBAM-24-02323) - B705

Jingshuo Qiu/Imperial College London, Yuxiang Feng/Imperial College London, Mohammed Quddus/Imperial College London, Washington Ochieng/Imperial College London

Parking Prediction and Parking Simulation for Dynamic Shared Parking (TRBAM-24-03618) - B706

Chao Lei/Shanghai Maritime University, Sheng Zhao/Shanghai Maritime University, Xuejin Wan/Shanghai Maritime University

Investigating the Impact of Incentive and Heterogeneity on Parking Place Choice Behavior of Bikesharing Users (TRBAM-24-03678) - B707

Long Pan/Beijing Jiaotong University, Enjian Yao/Beijing Jiaotong University, Linlin Zou/Beijing Jiaotong University

A Comparative Study on Adoption of Shared Parking Service Between Providers and Users (TRBAM-24-03941) - B708

Doosun Hong/Seoul National University, Jongho Oh/Seoul National University, Chungwon Lee/Seoul National University, Sunghoon Jang/Seoul National University

Smart Parking Systems: A Comprehensive Review of the Digital Revolution in Parking Services (TRBAM-24-04184) - B709

Sai Sneha Channamallu/Penn State Harrisburg, Sharareh (Sherri) Kermanshachi/Penn State Harrisburg, Jay Rosenberger/Penn State Harrisburg, Apurva Pamidimukkala/Penn State Harrisburg

A Continuous Approximation Model for the Design of Park-and-Ride Systems (TRBAM-24-04401) - B710

Julia Amaral/Rensselaer Polytechnic Institute (RPI), Jose Holguin-Veras/Rensselaer Polytechnic Institute (RPI)

Dynamic Usage Allocation, Pricing, and Incentive Design for Curbside Space Operations (TRBAM-24-04477) - B711

Jisoon Lim/University of Michigan, Neda Masoud/University of Michigan

Autonomous Vehicles, Parking, and Impacts on Urban Development (TRBAM-24-04944) - B712

Nico Larco/University of Oregon, Amanda Howell/University of Oregon, Ian Carlton/University of Oregon, James Kim/University of Oregon

Smart Camera Parking System with Auto Parking Spot Detection (TRBAM-24-05323) - B713

Tuan T. nguyen/University of Tennessee, Chattanooga, Mina Sartipi/University of Tennessee, Chattanooga

Learning to Search for Parking Like a Human: An Inverse Reinforcement Learning Approach (TRBAM-24-05756) - B714

Shiyu Wang/Tongji University, Haiyan Yang/Tongji University, Yijia Tang/Tongji University, Jing Chen/Tongji University, Cong Zhao/Tongji University, Yuchuan Du/Tongji University

4073



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Transportation Demand Management, Tolling, and Congestion Pricing

Mohammad Miralinaghi, Illinois Institute of Technology, presiding

Tien-Tien Chan, Nelson Nygaard, presiding

Sponsored By Standing Committee on Transportation Demand Management

Join the TRB Transportation Demand Management Committee (AEP60) to learn more about various strategies to help reduce vehicle congestion and single occupancy vehicle usage.

Joint Optimization of Pricing and Matching for Mobility-on-Demand Ridesharing Systems Considering Fairness and User Choices (TRBAM-24-00375) - B647

Ze Zhou/Aalto University, Claudio Roncoli/Aalto University, Charalampos Sipetas/Aalto University

A Sustainable and Equitable Approach to Financing Multimodal Transportation Alternatives in Metropolitan Areas (TRBAM-24-00453) - B650

PATRICK DECORLA-SOUZA/Federal Highway Administration (FHWA)

Does Congestion Charging Reduce Car Ownership?: A Difference-in-Differences Application to the London Congestion Charge (TRBAM-24-00500) - B651

Craig Morton/Loughborough University, Yasir Ali/Loughborough University

Leveraging Lessons Learned from the Tolling Industry to Implement a Road-Usage Charge: A Mixed-Methods Study to Devise Sustainable Funding Mechanisms for Transportation Infrastructures (TRBAM-24-00559) - B655

Jean Ji/University of California, Davis, Debapriya Chakraborty/University of California, Davis, Alan Jenn/University of California, Davis

Modeling a Ridesourcing Market with a Third-Party Platform Integrator Under Batch Matching Mechanisms (TRBAM-24-00658) - B656

Wang Ce/University of Hong Kong, Jintao Ke/University of Hong Kong

Quantifying the Implication of High-Capacity Ridesharing Services on Traffic Emission Reductions and Traffic Congestion Alleviation (TRBAM-24-00659) - B657

Wang Chen/University of Hong Kong, Jintao Ke/University of Hong Kong, Xiqun Chen/University of Hong Kong

An Occupancy-Based, Max-Pressure Algorithm to Provide Transit Signal Priority (TRBAM-24-01075) - B658

Tanveer Ahmed/Pennsylvania State University, Hao Liu/Pennsylvania State University, Vikash Gayah/Pennsylvania State University

Daily Travel Mode Choice Considering Carbon Credit as an Incentive: An Application of the Integrated Choice and Latent Variable Model (TRBAM-24-01286) - B659

Tianxu WANG/Shenzhen Technology University, Tian Lei/Shenzhen Technology University, Lei Gong/Shenzhen Technology University, Qin Luo/Shenzhen Technology University, Zhu HAN/Shenzhen Technology University, Yihong MO/Shenzhen Technology University

(continued)

Peer-to-Peer Carpooling: Who Carpools and How Often Do People Carpool? (TRBAM-24-01340) - B648

Peng Chen/University of South Florida, Xiankui Yang/University of South Florida

Trip Plan App for Peak Avoidance and Casual Carpooling: A Focus on Customer Churn (TRBAM-24-01342) - B649

Peng Chen/University of South Florida, Xiankui Yang/University of South Florida

Evaluating the Distributional Equity Performance of Car License Plate Lottery Policy (TRBAM-24-01517) - B665

Yucong Hu/Drexel University, Qilu Feng/Drexel University, Siyi Chen/Drexel University, Zhenning Li/Drexel University, Zhiwei Chen/Drexel University

An Evolutionary Game Analysis on the Carbon Generalized System of Preferences Policy for Public Transportation (TRBAM-24-01617) - B667

Yanhao Li/Dalian Maritime University, Jingyuan Qiao/Dalian Maritime University, Huaiyue Li/Dalian Maritime University, Yun Yuan/Dalian Maritime University, Xin Li/Dalian Maritime University

Fixed Price or Charge by Time?: A Discussion About Pricing Strategy for Ridesourcing Services (TRBAM-24-01889) - B668

Gege Jiang/Sun Yat-Sen University, Xin Zhang/Sun Yat-Sen University, Hong Lo/Sun Yat-Sen University, Manzi Li/Sun Yat-Sen University

Mode Preference and Willingness to Pay for Single-Mode and Multimodal Journeys in the Solent Region, United Kingdom (TRBAM-24-01931) - B669

Nima Dadashzadeh/University of Portsmouth Faculty of Technology, David Palma/University of Portsmouth Faculty of Technology, Seda Sucu/University of Portsmouth Faculty of Technology, Michiel Bliemer/University of Portsmouth Faculty of Technology, Djamilia Ouelhadj/University of Portsmouth Faculty of Technology

Understanding Factors Influencing User Engagement in Incentive-Based Travel Demand Management Program (TRBAM-24-02107) - B672

Songhua Hu/University of Maryland, College Park, Chenfeng Xiong/University of Maryland, College Park, Ya Ji/University of Maryland, College Park, Xin Wu/University of Maryland, College Park, Kailun Liu/University of Maryland, College Park, Paul Schonfeld/University of Maryland, College Park

Quantifying Demographic Profiles for Washington Tolling Facilities (TRBAM-24-02415) - B673

Samuel Ricord/University of Washington, Yinsheng Kou/University of Washington, Yinhai Wang/University of Washington, Angela Kitalli/University of Washington

Evaluation of Effectiveness of Congestion Pricing Using Travel Time Congestion Index: An Indian Experience (TRBAM-24-02665) - B674

Naveed Marazi/Birla Institute of Technology and Science, Pilani, Bandhan Majumdar/Birla Institute of Technology and Science, Pilani, Prasanta Sahu/Birla Institute of Technology and Science, Pilani

Understanding the Dynamics of Ridehailing Services in the Greater Toronto Area: A Comprehensive Study of Demand and Supply Patterns (TRBAM-24-02742) - B675

Shuoyan Xu/University of Toronto, Nael Alsaleh/University of Toronto, Timur Hamzaev/University of Toronto, Eric Miller/University of Toronto

Personalized Pareto Improving Tolling for Congestion Pricing and Tradable Mobility Credits (TRBAM-24-03000) - B653

Siyu Chen/Massachusetts Institute of Technology, Ravi Seshadri/Massachusetts Institute of Technology, Carlos Lima Azevedo/Massachusetts Institute of Technology, Arun Akkinapally/Massachusetts Institute of Technology, Renming Liu/Massachusetts Institute of Technology, Yu Jiang/Massachusetts Institute of Technology, Moshe Ben-Akiva/Massachusetts Institute of Technology

Considerations and Recommendations for Incorporating Equity into Transportation Demand Management Planning (TRBAM-24-03172) - B677

Megan Gee/Arup, Joseph Kaylor/Arup, Elizabeth Owen/Arup

Estimating Fleet Size Reduction from the Perspective of Supply Elasticity of Taxi Services (TRBAM-24-03495) - B678

Guangyue Nian/Tongji University

Exploring the Feasibility of a Credit Scheme for Sustainable Mobility in University Communities (TRBAM-24-03508) - B679

Filippos Alogdianakis/University of Cyprus, Christos Gkartzonikas/University of Cyprus, Loukas Dimitriou/University of Cyprus

Workplace Responsibility for Employee Mobility?: A Review of Sustainability Reporting Frameworks and Standards (TRBAM-24-03705) - B680

Yaara Tsairi/Technion - Israel Institute of Technology, Karel Martens/Technion - Israel Institute of Technology

Forecasting Enrollment in Discount- or Credit-Based Tolling Equity Programs (TRBAM-24-03716) - B681

Gabor Debreczeni/WSP, Garet Prior/WSP, Vishal Savalani/WSP

(continued)

Congestion Pricing for Indian Cities: Challenges and Prospects Based on International Experiences (TRBAM-24-03783) - B682

Kuldeep Kavta/Newcastle University, Arkopal Goswami/Newcastle University

Stated Preferences on Shared Automated Vehicles in the Context of Mode Choice Model Estimation for Different Trip Purposes: A Case Study for Flanders, Belgium (TRBAM-24-03787) - B683

Lotte Notelaers/Katholieke Universiteit Leuven (KU Leuven), Mohammad Ali Arman/Katholieke Universiteit Leuven (KU Leuven), Chris Tampère/Katholieke Universiteit Leuven (KU Leuven)

Germany's 9-Euro-Ticket: Impacts on Disadvantaged Groups Using a Causal Inference Approach (TRBAM-24-03797) - B663

Isabella Waldorf/Technical University Munich, Allister Loder/Technical University Munich, Stefan Wurster/Technical University Munich, Klaus Bogenberger/Technical University Munich

A Methodological Framework for a State-Level Transportation Re-Pricing Strategy Impact Assessment (TRBAM-24-03970) - B684

Cecilia Viggiano/EBP, Kyle Schroeckenthaler/EBP, Allen Greenberg/EBP, Gabriella Abou-Zeid/EBP

Tradable Credit Schemes for Mobility Management: Review and Comparison of Theoretical and Experimental Research (TRBAM-24-04489) - B662

Giovanni Albano/JRC: European Commission Joint Research Centre, Andromachi Mourtzouchou/JRC: European Commission Joint Research Centre, Konstantinos Mattas/JRC: European Commission Joint Research Centre, Ravi Seshadri/JRC: European Commission Joint Research Centre, Bat-hen Nahmias-Biran/JRC: European Commission Joint Research Centre, Carlos Lima Azevedo/JRC: European Commission Joint Research Centre, Biagio Ciuffo/JRC: European Commission Joint Research Centre

A Practical Tradable Credit Scheme to Manage the Commute Problem While Ensuring the Cumulative Revenue Neutrality of the Central Authority (TRBAM-24-04561) - B652

Giovanni Albano/JRC: European Commission Joint Research Centre, Konstantinos Mattas/JRC: European Commission Joint Research Centre, Ravi Seshadri/JRC: European Commission Joint Research Centre, Carlos Lima Azevedo/JRC: European Commission Joint Research Centre, Biagio Ciuffo/JRC: European Commission Joint Research Centre

Assessing the Impact of Monetary Incentives for Walking Using Agent-Based Mobility Simulations and Discrete Mode Choice Models (TRBAM-24-04571) - B685

Tarek Chouaki/IRT SystemX, Laura Mariana Reyes Madrigal/IRT SystemX, Sebastian Hörl/IRT SystemX

Estimates of the Willingness to Accept Monetary Incentives for the Selection of Transit and E-Scooter Modes in Puerto Rico (TRBAM-24-04897) - B686

Carlos del Valle-González/University of Puerto Rico, Mayaguez, Alberto Figueroa-Medina/University of Puerto Rico, Mayaguez, Didier Valdes-Diaz/University of Puerto Rico, Mayaguez, Juan Martinez/University of Puerto Rico, Mayaguez

How Does the Congestion Surcharge Affect Taxi Ridership for Origin-Destination Pairs?: Causal Evidence from New York City (TRBAM-24-04951) - B687

Hongtai Yang/Southwest Jiaotong University, Hongjun Hu/Southwest Jiaotong University, Guocong Zhai/Southwest Jiaotong University, Lanzhen Jiang/Southwest Jiaotong University

Improving Strategies While Thinking Outside the Box: Recent Efforts at Managing Commercial Loading in Washington, DC (TRBAM-24-05277) - B688

Stephen Hanrahan/District Department of Transportation

Success of Incentives to Stimulate Sustainable Commuting Mode Choices of Tech Industry Office Professionals (TRBAM-24-06006) - B689

J. Pogodzinski/Global Telematics, John Niles/Global Telematics

A New Normal or Same Old, Same Old?: Exploring the Changing Nature of Work and Commute During the Pandemic (TRBAM-24-06009) - B690

Fariba Siddiq/University of California, Los Angeles

Incorporating Mobility on Demand into Public Transit in Suburban Areas: A Comparative Evaluation of Cost-Effectiveness (TRBAM-24-06017) - B691

Mingming Cai/University of Washington, Lamis Ashour/University of Washington, Qing Shen/University of Washington, Elyse Lewis/University of Washington, Cynthia Chen/University of Washington

Shared Autonomous Vehicle (SAV) Fleet Operations with Multiple Service Types: Comparative Analysis of SAV Size, Service Types, and Ride Preferences (TRBAM-24-06107) - B692

Priyanka Paithankar/University of Texas, Austin, Krishna Murthy Gurusurthy/University of Texas, Austin, Kara Kockelman/University of Texas, Austin

MobilityCoins - Dynamics of a Multi-Modal, Multi-Period Tradable Credit Scheme for Munich (TRBAM-24-06341) - B664

Philipp Servatius/Technical University of Munich, Allister Loder/Technical University of Munich, Klaus Bogenberger/Technical University of Munich

(continued)

Happy Hour(s): A Sensitivity Analysis of Emotional Well-Being to Activity Duration (TRBAM-24-06352) - B693
Alireza Ermagun/George Mason University, Jacquelyn Erinne/George Mason University, Jonas De Vos/George Mason University

Traffic Reduction and Decarbonization through Network Changes - Empirical Evidence from Paris (TRBAM-24-06365) - B654

Elena Natterer/Technical University Munich, Allister Loder/Technical University Munich, Klaus Bogenberger/Technical University Munich

Optimizing Traffic Distribution and Road Pricing Revenue Stabilization through Link Based Congestion Charging and Credit Allocation: Towards Transportation Social Equity Enhancing (TRBAM-24-06476) - B694

Qixing Wang/University of Connecticut

School Staff Transportation Demand Management in the District of Columbia (TRBAM-24-06534) - B695

Jason Meggs/District Department of Transportation

4074



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Tackling Asset Management Emerging Trends to Engage, Enrich, and Empower Practitioners

Richard Boadi, WSP USA Solutions, Inc., presiding

Sponsored By Standing Committee on Transportation Asset Management

Emerging trends in asset management include methods of incorporating risk, resilience, and other assets and metrics into transportation asset management decision-making. As part of this, practitioners and researchers are developing effective strategies to engage, enrich, and empower experts in developing, implementing, and advancing practice. This poster session will highlight examples of case studies and best practices to address challenges.

Incorporating Bike/Ped Criteria in Project Ranking and Selection (TRBAM-24-00296) - B634

Dasha Korostina/Kentucky Transportation Cabinet, Nikiforos Stamatiadis/Kentucky Transportation Cabinet, Teng Wang/Kentucky Transportation Cabinet, Reginald Souleyrette/Kentucky Transportation Cabinet

Balancing the Economic, Environmental, and Service Trade-Offs in Road Design: An Input-Output Model with Substitution (TRBAM-24-00605) - B635

Jing Yu/Northwestern University, Pablo Durango-Cohen/Northwestern University

Moving to Risk-Based Highway Asset Maintenance Using Elicited Data (TRBAM-24-00777) - B636

Gergely Raccuja/National Highways UK, Simon Cumming/National Highways UK, Gary Short/National Highways UK, Tom Graham/National Highways UK, Stephen Morgan/National Highways UK

Next-Generation Transportation Asset Management Methodology for Cross-Asset Decisions (TRBAM-24-00874) - B633

Paul Thompson/Applied Pavement Technology, Inc., Sandhya Pai/Applied Pavement Technology, Inc., Prashant Ram/Applied Pavement Technology, Inc., Abhik Borthakur/Applied Pavement Technology, Inc., Kelly Smith/Applied Pavement Technology, Inc., Nadarajah Sivanewaran/Applied Pavement Technology, Inc.

Automated Change Detection of Traffic Sign Damage Using Low-Cost LiDAR Data (TRBAM-24-00970) - B637

ahmed khataan/UBC School of Engineering, Suliman Gargoum/UBC School of Engineering

Optimization of Network Pavement Life-Cycle Cost: A Piecewise Linearized Approach (TRBAM-24-01086) - B638

Watheq Sayeh/University of Illinois, Urbana-Champaign, Imad Al-Qadi/University of Illinois, Urbana-Champaign

Inspection, Condition Assessment, Performance Evaluation, and Level of Service Reporting for Bridge Asset Management Systems: Current State and Directions for Future Research (TRBAM-24-01445) - B639

Wang Chen/Toronto Metropolitan University, Xian-Xun Yuan/Toronto Metropolitan University

Next-Generation Performance Measures for Pavement Management Decision Support (TRBAM-24-02077) - B632

ABHIK BORTHAKUR/Applied Pavement Technology, Inc., Sandhya Pai/Applied Pavement Technology, Inc., Prashant Ram/Applied Pavement Technology, Inc., Kelly Smith/Applied Pavement Technology, Inc., Nadarajah Sivanewaran/Applied Pavement Technology, Inc.

Radio Frequency Identification and Wireless Internet of Things System Development for Transportation Maintenance Operations and Asset Management (TRBAM-24-02508) - B640

Jay Jung/University of Vermont, Wenzhe Chen/University of Vermont, Byung Lee/University of Vermont, Tian Xia/University of Vermont

Development of Asset Management of Bicycle Paths in Finland (TRBAM-24-03314) - B641

Vesa Mannisto/Finnish Transport Infrastructure Agency, Susanna Suomela/Finnish Transport Infrastructure Agency, Konsta Sirvio/Finnish Transport Infrastructure Agency

(continued)

Resilience and Risk Based Framework for Managing Culverts in Changing Climates: A Case Study of Colorado Culverts (TRBAM-24-03340) - B642

Bukola Oni/Iowa State University, Maria Rojas/Iowa State University, Yazan Alatoom/Iowa State University, Rosy Adhikari/Iowa State University, Ahmed Albughdadi/Iowa State University, Omar Smadi/Iowa State University

Infrastructure Planning Under Deeply Uncertain Conditions: Application of Decision Making Under Deep Uncertainty Concepts to Bridge Replacement Planning (TRBAM-24-03809) - B643

Manuel Cuadra/Georgia Institute of Technology, Adjo Amekudzi-Kennedy/Georgia Institute of Technology

An Asset Management Approach for New Mobility Devices (TRBAM-24-04091) - B644

Jason Bittner/Applied Research Associates, Inc., Neil Janes/Applied Research Associates, Inc., Hannah Silber/Applied Research Associates, Inc.

Long-Range Plans for Replacement of Highway Operations Equipment (TRBAM-24-04376) - B645

Leila Hajibabai/North Carolina State University, Ali Hajbabaie/North Carolina State University, Henry Canipe/North Carolina State University

Quantifying Equitable Roads: Metrics to Understand Pavement Condition Disparities for Better Asset Management (TRBAM-24-05573) - B646

Oscar Daniel Galvis Arce/WDM USA, Lisa Losada Rojas/WDM USA

A Data-Driven Approach for Predicting the Deterioration of Highway Ancillary Structures: A Case Study on High Mast Light Pole (TRBAM-24-06139) - B630

Xin Wang/Rutgers University, New Brunswick, Yun Bai/Rutgers University, New Brunswick

Risk-Based Transportation Infrastructure Management: An Integrated Framework and Case Study in the U.S. Virgin Islands Against Coastal Flood and Sea Level Rise (TRBAM-24-06206) - B631

Junyan Dai/Rutgers University, New Brunswick, Ruohui Zhang/Rutgers University, New Brunswick, Yun Bai/Rutgers University, New Brunswick, Daniel Barone/Rutgers University, New Brunswick, Lauren Hill-Beaton/Rutgers University, New Brunswick

4075



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Current Research in Historic and Archeologic Preservation

Emily Pettis, Mead & Hunt, Inc., presiding

Mary Tinsman, Johnson Mirmiran and Thompson, presiding

Sponsored By Standing Committee on Historic and Archeological Preservation in Transportation

Context Sensitive Solutions Applications in Transportation: California Department of Transportation Case Studies (P24-20453) - B779

Jacqueline Farrington/California Department of Transportation

Maryland Railroads Statewide Historic Context (P24-20474) - B773

Matt Manning/Maryland Environmental Service, Steve Archer/Maryland Department of Transportation, Gerry Kuncio/Skelly and Loy, Inc., Jenna Thomas-Cline, Jenna Mihal/Skelly and Loy, Inc., Kathryn Lombardi/Skelly and Loy, Inc., Alison Ross

Repurposing the Historic Great Stone Viaduct (P24-20475) - B774

Karel Cubick/ms consultants, inc.

Vermont Mobile Homes and Parks: Surveying and Documenting a Property Type (P24-20476) - B775

Emily Pettis/Mead & Hunt, Inc.

Identifying and Documenting Historical Routes: Mixed Methods Research (P24-20478) - B778

Jonathan Peters/City University of New York, Cameron Gordon/Australian National University

How a City Saved Its Beloved Historic Bridge (P24-20480) - B777

Robert Newbery/CORRE, Inc., Megan Beer-Pemberton/CORRE, Inc.

Preservation of Historic Bridges and Their Influence on Their Contemporary Urban Habitats: An Understanding Through the Bridges of Sinan (TRBAM-24-00028) - B770

Niyazi Özgür Bezgin/Istanbul Universitesi, Cerrahpasa

Importance of Correct Preservation Policies for Historic Transportation Structures: A Lesson Learned Through a Tragedy (TRBAM-24-00546) - B772

Niyazi Özgür Bezgin/Istanbul Universitesi, Cerrahpasa



Wednesday, 10:15 a.m. - 12:00 p.m., Convention Center, Hall A

Using Community Insights to Develop Sustainable, Equitable, and Resilient Transportation Solutions

Tia Boyd, USF Center for Urban Transportation Research, presiding

Sponsored By Standing Committee on Community Resources and Impacts

A Persona-Based Approach to Assessing and Addressing Impacts on Communities of Transit Riders (P24-20190) - B760

Alec Biehl/Metropolitan Atlanta Rapid Transit Authority, Eric Chou/Metropolitan Atlanta Rapid Transit Authority, Chris Wyczalkowski/Metropolitan Atlanta Rapid Transit Authority

Analyzing the Impacts of COVID-19 on the Destination Choice of Bikers in New York City (P24-20191) - B762

Mohammad Maleki/Southern Methodist University

Equitable Transportation and Resilience Hubs: Analysis of Underserved Population Needs, Usage, and Travel (P24-20192) - B764

Thayanne Ciriaco/University of Alberta

Travel Behavior and Community Needs for Resilience Hubs (P24-20688) - B765

Thayanne Ciriaco/University of Alberta

A Longitudinal Examination of the Elasticity of Public Transportation (TRBAM-24-00684) - B750

Paul Redelmeier/McGill University, Ahmed El-Geneidy/McGill University

Impact of Zoning Regulations on Transportation Equity of Job Accessibility: A Spatial Autoregressive Approach for the Dallas–Fort Worth and Houston-Galveston Area Council Areas (TRBAM-24-02824) - B754

Subham Kharel/University of Texas, Arlington, Soheil Sharifi/University of Texas, Arlington, Qisheng Pan/University of Texas, Arlington, Jiangling Li/University of Texas, Arlington

Professional Drivers: Automobile Debt and Financial Support During the First Year of the COVID-19 Pandemic (TRBAM-24-00029) - B759

Jacob Wasserman/University of California, Los Angeles, Fariba Siddiq/University of California, Los Angeles, Samuel Speroni/University of California, Los Angeles, Evelyn Blumenberg/University of California, Los Angeles

The Role of Activism and Advocacy in Shaping Austin's Public Transit Future (TRBAM-24-00096) - B755

Jonathan Shuster/University of Texas, Austin, Alex Karner/University of Texas, Austin

If You Build It, Who Will Come?: Exploring the Effects of Rapid Transit on Residential Movements in Metro Vancouver (TRBAM-24-00144) - B740

Bogdan Kapatsila/University of Alberta, Jordan Rea/University of Alberta, Emily Grise/University of Alberta

Valuating Incentives for Walking: Evidence from Athens, Greece (TRBAM-24-00192) - B768

Panagiotis Tzouras/National Technical University of Athens (NTUA), Lambros Mitropoulos/National Technical University of Athens (NTUA), Christos Karolemeas/National Technical University of Athens (NTUA), Dionysis Tzamakos/National Technical University of Athens (NTUA), Christina Milioti/National Technical University of Athens (NTUA), Konstantinos Kepaptsoglou/National Technical University of Athens (NTUA)

Travel Behavior and Community Needs for Resilience Hubs (TRBAM-24-00264) - B767

Thayanne Ciriaco/University of Alberta, Stephen Wong/University of Alberta

Community-Driven Transportation Studies: A Review of Needs Assessments and Methodologies (TRBAM-24-00816) - B743

Miriam Pinski/Shared Use Mobility Center, Lauren McCarthy/Shared Use Mobility Center

A Cross-Country Analysis of Road Infrastructure and Human Development (TRBAM-24-01146) - B744

Jefferson Hishiyama da Silva/University of Tokyo, Hironori Kato/University of Tokyo

The Acceptable Walking Time to Public Transport: A Comparative Analysis Between Public Transport and Private Car Users (TRBAM-24-01224) - B745

Mingwei He/Kunming University of Science and Technology, Limei Xun/Kunming University of Science and Technology, □/Kunming University of Science and Technology, Quan Zhu/Kunming University of Science and Technology, Zhuangbin Shi/Kunming University of Science and Technology

Sustainable Public Transportation: Urgency Evaluation of Conventional Bus Lines Adjustment Along Rail Transit Based on the Super-Efficiency Data Envelope Analysis Model, Aiming to Avoid Waste of Transportation Resources (TRBAM-24-01232) - B747

Zhe Zhang/Southeast University School of Transportation, Weihai Chen/Southeast University School of Transportation, Qi Cao/Southeast University School of Transportation, Gang Ren/Southeast University School of Transportation, Ziwei Cui/Southeast University School of Transportation, Cheng Wang/Southeast University School of Transportation

(continued)

Using Behavioral Nudges and Incentives to Increase Affordability of Public Transport Systems (TRBAM-24-01349) - B742

Bogdan Kapatsila/University of Alberta, Emily Grise/University of Alberta

Using Mobile Phone Big Data and Street View Images to Explore the Effects of Walkability on Walking Behavior (TRBAM-24-01571) - B732

Xuan HE/Chinese University of Hong Kong, Sylvia Y. He/Chinese University of Hong Kong

Community Transport's Dual Role as a Transport and a Social Scheme: Implications for Policy (TRBAM-24-02100) - B733

Léa Ravensbergen/McMaster University, Tim Schwanen/McMaster University

Evaluation of the Equity of Societal Crash and Congestion Costs in Communities (TRBAM-24-02790) - B731

Daniel Comeau/HNTB Corporation, Bryan Remache-Patino/HNTB Corporation, Thomas Brennan/HNTB Corporation, Michael Pack/HNTB Corporation, Chenfeng Xiong/HNTB Corporation

Application of a Hybrid Approach in Developing Urban Road Livability-Related Indicators for the Sustainable Urban Road Rating System (TRBAM-24-02864) - B734

Shih-Hsien Yang/Duy Tan University, Nam Tran/Duy Tan University, Firmansyah Rachman/Duy Tan University

Assessing the Differences in Travel Burden Among Commuters in U.S. Metropolitan Areas (TRBAM-24-03107) - B769

Sunday Okafor/University of Alabama, Tuscaloosa, Abhay Lidbe/University of Alabama, Tuscaloosa, Emmanuel Adanu/University of Alabama, Tuscaloosa, Jun Liu/University of Alabama, Tuscaloosa, Steven Jones/University of Alabama, Tuscaloosa

Young Workers, Jobs–Housing Balance, and Commute Distance: Findings from Two High Housing Cost Regions (TRBAM-24-03109) - B758

Evelyn Blumenberg/University of California, Los Angeles, Hannah King/University of California, Los Angeles

Does Affordable Housing Provide a Better Life for Vulnerable Groups?: Measuring Social Equity Through Public Transit Accessibility (TRBAM-24-03333) - B757

Naifu Fan/Tongji University, Xiaohong Chen/Tongji University

Assessing the Distribution of Commuting Trips and Jobs–Housing Balance Using Smart Card Data: A Case Study of Nanjing, China (TRBAM-24-03630) - B735

Feng Liu/Southeast University, MEINA ZHENG/Southeast University

Assessing the Influence of the COVID-19 Pandemic on Passengers' Reliance on Public Transport (TRBAM-24-03742) - B753

Zhe Ning/Southeast University, Cheng Long/Southeast University

Exploring the Changes in the Interrelation Between Public Transit Mode Share and Accessibility Across Income Groups in Major Canadian Cities in the Post-Pandemic Era (TRBAM-24-03769) - B752

Hisham Negm/McGill University, Ahmed El-Geneidy/McGill University

Exploring How Attitudinal Factors Influence Risky Behavior Among Shared E-Scooter Riders in Chicago (TRBAM-24-04088) - B736

Sina Asgharpour/University of Illinois, Chicago, Mohammadjavad Javadinasr/University of Illinois, Chicago, Abolfazl (Kouros) Mohammadian/University of Illinois, Chicago, Nazmul Arefin Khan/University of Illinois, Chicago, Joshua Auld/University of Illinois, Chicago

Accessibility Assessment of Long Island Libraries from the Perspective of Community Resilience (TRBAM-24-04514) - B720

mahsa bargahi/Stony Brook University, Anil Yazici/Stony Brook University, Donovan Finn/Stony Brook University, Clara Tran/Stony Brook University

Exploring the Effect of Micromobility Use on Daily Travel Patterns, Mode Shift, and Car Ownership (TRBAM-24-04544) - B721

HOSSAIN MOHIUDDIN/University of California, Davis, Tatsuya Fukushige/University of California, Davis, Dillon Fitch-Polse/University of California, Davis, Susan Handy/University of California, Davis

Initial Approach to Measuring the Social Effects of Warehouse Development in Cities: The Case of New York City (TRBAM-24-04755) - B722

Carla Tejada Lopez/University of Illinois, Chicago, Alison Conway/University of Illinois, Chicago

Identifying Factors Determining Public Acceptance of Automated Shuttles: Empirical Evidence from an American Suburban Neighborhood (TRBAM-24-04760) - B723

Yanghe Liu/University of Florida, Kaifa Lu/University of Florida, Zhong-Ren Peng/University of Florida, Wei Zhai/University of Florida

(continued)

Choice of Sustainable and Non-Sustainable Modes Over Mixed Modes (TRBAM-24-04791) - B748

Md Amdad Hossen/Michigan State University, Kakan Dey/Michigan State University, Md Tawhidur Rahman/Michigan State University, Md Tanvir Ashraf/Michigan State University, Subasish Das/Michigan State University, V. Dimitra Pyrialakou/Michigan State University

Neighborhood-Level COVID-19 Hospitalizations and Mortality Relationships with the Built Environment and Active and Sedentary Travel (TRBAM-24-04888) - B724

Behram Wali/Urban Design 4 Health, Inc., Lawrence Frank/Urban Design 4 Health, Inc.

Quantifying the Impact of Coastal Flooding on Resident Quality of Life and Tourism Visitation Rates (TRBAM-24-05022) - B725

CJ Gerber/Auburn University, Jeffrey LaMondia/Auburn University

Estimating the Social Benefits of a Microtransit Programs: A Social Return on Investment System Dynamics Model (TRBAM-24-05312) - B763

Mohammad Maleki/Southern Methodist University, Janille Smith-Colin/Southern Methodist University

Interventions, Impacts, and Recommendations: A Review of Worldwide Active School Traveling Program (TRBAM-24-05433) - B726

Xuenuo Zhang/Peking University, Liang Ma/Peking University

Extracting Insights on Walkable Cities from Online News Media Reports (TRBAM-24-05593) - B749

Subasish Das/Texas State University, Valerie Vierkant/Texas State University, Anandi Dutta/Texas State University

A Transportation Equity Analysis for Employment-Based Transit Subsidies: Empirical Evidence from the Atlanta Regional Travel Survey (TRBAM-24-05714) - B730

Keunmin Cho/University of Maryland, College Park, Xingzhao Wang/University of Maryland, College Park, Chenfeng Xiong/University of Maryland, College Park

Economic and Social Effectiveness of Different Active Transportation Features on Businesses (TRBAM-24-05844) - B727

Shagun Mittal/Purdue University, Satish Ukkusuri/Purdue University

Happiness in Motion: The Interplay Among Daily Trips, Activities, and Happiness (TRBAM-24-06131) - B738

Alireza Ermagun/George Mason University, Nazanin Tajik/George Mason University, Jacquelyn Erinne/George Mason University, Ying Song/George Mason University

Gentrification Dynamics in Urban Planning: Analyzing the Effects of Freeway Caps on Gentrification (TRBAM-24-06304) - B739

David Li/George Mason University, Alireza Ermagun/George Mason University

Understanding Heterogeneity in Public Transit Loyalty: Insights from 2022 Customer Satisfaction Survey in Chicago (TRBAM-24-06444) - B737

Sina Asgharpour/University of Illinois, Chicago, Sajad Askari/University of Illinois, Chicago, Abolfazl (Kouros) Mohammadian/University of Illinois, Chicago, Charles Abraham/University of Illinois, Chicago, Jack Cruikshank/University of Illinois, Chicago

4077



Wednesday, 01:30 p.m. - 03:00 p.m., Convention Center, Ballroom ABC

Chair's Plenary Session

Diane Gutierrez-Scaccetti, New Jersey Department of Transportation, presiding

Sponsored By Executive Committee

The program for the Chair's Plenary Session is hosted by 2023 Executive Committee Chair Diane Gutierrez-Scaccetti and includes the introduction of new Executive Committee members and officers; recognition of special guests; and the presentation of TRB's most prestigious awards. The event will also include a fireside chat on the issue of mental wellness of transportation construction workers.

Fireside Chat: Mental Wellness of Transportation Construction Workers and Transportation Professionals at Large (P24-21468)

Sharareh (Sherri) Kermanshachi/Penn State Harrisburg, Travis McCarthy/Sundt Construction, Inc., Peter Tateishi/Associated General Contractors of California, Diane Gutierrez-Scaccetti/New Jersey Department of Transportation, Carol Lewis/Texas Southern University

4059

Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, 201

Roughness and Friction Studies

J. Neil Mastin, Mott MacDonald, LLC, presiding

Sponsored By Standing Committee on Pavement Surface Properties and Vehicle Interaction

Investigation of the Effect of Traffic-Related Factors on the Long-Term Evolution of Pavement Skid Resistance (TRBAM-24-01710)

Miao Yu/Chongqing Jiaotong University, Zhanping You/Chongqing Jiaotong University, Zhi Yang/Chongqing Jiaotong University, Yansheng Luo/Chongqing Jiaotong University, Liming Yang/Chongqing Jiaotong University, Jue Li/Chongqing Jiaotong University

A Laboratory Investigation into Tire–Pavement Contact Behavior of the Passenger Car (TRBAM-24-01175)

Zhenlong Gong/USTB: University of Science and Technology Beijing, Yinghao Miao/USTB: University of Science and Technology Beijing, Weixiao Yu/USTB: University of Science and Technology Beijing, Songli Songli/USTB: University of Science and Technology Beijing, Wei Li/USTB: University of Science and Technology Beijing, Linbing Wang/USTB: University of Science and Technology Beijing

Roughness Prediction of Jointed Plain Concrete Pavement Using Physics Informed Neural Networks (TRBAM-24-00903)

Sampath Pasupunuri/University of Nottingham, Nick Thom/University of Nottingham, Linglin Li/University of Nottingham

Assessment of Friction Characteristics in High-Friction Surface Treatment Under Various Polishing and Slippery Conditions (TRBAM-24-04665)

Alireza roshan/Missouri University of Science and Technology, Magdy Abdelrahman/Missouri University of Science and Technology

4079

Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Salon C

Automated Road Transportation Symposium 2024: Planning Workshop

Valerie Shuman, Shuman Consulting Group, LLC, presiding

Jane Lappin, Blue Door Strategy and Research, presiding

Sponsored By Standing Committee on Vehicle-Highway Automation, Subcommittee on Challenges and Opportunities of Road Vehicle Automation

This workshop launches planning for the 2024 Automated Road Transportation Symposium (ARTS24), including an opportunity to connect and collaborate with like-minded experts on Breakout Session proposal ideas. CORVA is the Subcommittee on Challenges and Opportunities of Road Vehicle Automation.

ARTS24 Symposium Overview (P24-21160)

Jane Lappin/Blue Door Strategy and Research

Breakout Best Practices (P24-21161)

Valerie Shuman/Shuman Consulting Group, LLC

4080

Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, 146A

Visualization in Transportation Lightning Talks

Kevin Gilson, WSP, presiding

Sponsored By Standing Committee on Visualization in Transportation

AED80 is once again hosting a 90-minute session of Lightning Talks on Visualization in Transportation for the TRB Annual Meeting in January. The session will include presentations on all aspects of visualization including the following areas of interest: Data Visualization-Visual Analytics-System Performance BIM for Infrastructure Visual Simulation-Simulators-Real-time interactive tools-VR/AR Other presentations which could be showcased in one of the above interest areas The session will be divided into tracks roughly encompassing the above areas of interest, and talks will be limited to 3-4 minutes each to keep the session fast-paced and lively.

(continued)

Data Visualization and System Performance Graphics (P24-20660)

Charles Lattimer/University of Maryland

Interactive and Immersive Visualization Presentation Methods (P24-20661)

Sepehr Sabeti/Leidos, Inc.

Building Information Modeling for Infrastructure (P24-20662)

Jennifer Steen/HDR, Kevin Gilson/WSP

4081

Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, 140

Environmental Impact and Performance of Rubberized Asphalt

David Wilson, Virginia Department of Transportation, presiding

Sponsored By Standing Committee on Resource Conservation and Recovery, Standing Committee on Air Quality and Greenhouse Gas Mitigation

Environmental Behavior Assessment of Rubber-Modified Asphalt and the Impact of Components on Emissions and Performance (TRBAM-24-02227)

Lingwen Li/Harbin Institute of Technology, Liping Cao/Harbin Institute of Technology, Zejiao Dong/Harbin Institute of Technology, Jie Zhou/Harbin Institute of Technology, Zhou Tao/Harbin Institute of Technology

Integrating Mechanistic-Empirical Pavement Design Guide Analysis in the Life-Cycle Assessment Use Phase and Monetization of Environmental Impacts to Promote Green Technologies: The Case Study of Rubberized Asphalt in the United Arab Emirates (TRBAM-24-02738)

Haider Ibrahim/Michigan State University, Stefano Marini/Michigan State University, Angela Farina/Michigan State University, Michele Lanotte/Michigan State University

The Performance of Rubber-Modified Asphalt Mixture with Tire-Derived Aggregate Subgrade (TRBAM-24-05189)

Dongzhao Jin/Michigan Technological University, Kai Xin/Michigan Technological University, Lei Yin/Michigan Technological University, Sepehr Mohammadi/Michigan Technological University, Zhanping You/Michigan Technological University

Mechanical, Economic, and Environmental Assessment of Recycling Reclaimed Asphalt Rubber Pavement Using Different Rejuvenation Schemes (TRBAM-24-01132)

Danning Li/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University, Linyi Yao/Hong Kong Polytechnic University, Ruijun Cao/Hong Kong Polytechnic University, Fuliao Zou/Hong Kong Polytechnic University, Gaoyang Li/Hong Kong Polytechnic University

4082 CM (1.75)

Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, 143AB

Persistent Impact of the COVID-19 Pandemic on Airport Ground Access

Peter Mandle, InterVISTAS Consulting LLC, presiding

Sponsored By Standing Committee on Airport Terminals and Ground Access, Standing Committee on Aviation Safety, Security and Emergency Management

This session will focus on how responsive measures taken to contain and avoid the spread of the COVID-19 pandemic have continued in the context of ground access at commercial service airports. Participants in this session will learn about: (a) Airport ground access mode choice behavior through a case study of Changi International Airport in Singapore (b) Airport Employees and airport ground access in the context of remote work using the analytical framework of San Francisco International Airport's New Go>SFO Shuttle Service (c) Airport ground access through a review of transit data at a mega airport after COVID-19 using the analytical lens of Denver International Airport

Airport Ground Access Mode Choice Behavior After the Introduction of a Home Check-in Service: A Case Study of Changi Airport in Singapore (TRBAM-24-06087)

Thi Anh Hong Nguyen/Singapore University of Technology and Design, Stefan Tuchen/Singapore University of Technology and Design, Khushbu Maheshwary/Singapore University of Technology and Design, Lucienne Blessing/Singapore University of Technology and Design, Sam Joyce/Singapore University of Technology and Design, Lynette Cheah/Singapore University of Technology and Design

Airport Ground Access for Employees: Remote Work and the New Go>SFO Shuttle Service (P24-20791)

Christopher DiPrima/San Francisco International Airport

(continued)

Review of Transit Data at a Leading Large Commercial Service Airport After COVID-19: The Story of Denver International Airport (P24-20792)

Lisa Nguyen/Denver International Airport

4083



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Ballroom A

New Materials for Infrastructure: Reinventing the Roadway, Runway, and Railway

Robert Hampshire, U.S. Department of Transportation, presiding

Sponsored By Executive Committee

Organized at the request of Secretary of Transportation Pete Buttigieg, this U.S. DOT-led workshop will focus on innovative durable materials, including green and low embodied carbon infrastructure materials, bio-engineered materials, and other topics related to decarbonizing the infrastructure supply chain. These new and innovative technologies can reduce emissions from infrastructure and construction, while making infrastructure more resilient to the impacts of climate threats. The workshop will highlight advances in durable and low carbon material technologies and will bring together a group of industry experts and research leaders to discuss opportunities for collaboration and deployment.

Panel Discussion (P24-21373)

Cooper Rinzler/Breakthrough Energy Ventures, Franz-Josef Ulm/Massachusetts Institute of Technology, Matthew Pava/DARPA, Katie Rae/Boston Metal, Maggie Kwan/AECOM, Mostafa Jamshidi/Nebraska Department of Transportation

4084



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Advancing Travel Forecasting Methods and Practices

Rebekah Straub, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Transportation Demand Forecasting

Learn from academics and practitioners about their recent research findings and applications in travel forecasting.

Do Regional and Extra-Regional Accessibility Affect Long-Distance Intercity Travel?: Insights from California (TRBAM-24-00247) - A103

Lisa Aultman-Hall/University of Waterloo, Dana Rowangould/University of Waterloo, Mitchell Robinson/University of Waterloo

Incorporating Cyclists' Route Choice Models into Travel Demand Modeling: A Case Study in Greater Helsinki (TRBAM-24-00368) - A150

Konsta Tarkkala/Aalto University, Shaghayegh Vosough/Aalto University, Jens West/Aalto University, Claudio Roncoli/Aalto University

How Does the Introduction of Shared Ridesourcing Services Affect Demand for Existing Modes for Noncommuting Trips?: Evidence from a Joint RP-SP Study in Metro Vancouver (TRBAM-24-00405) - A130

Patrick Loa/University of Toronto, Felita Ong/University of Toronto, Khandker Habib/University of Toronto

Modeling the Demand for Ridesharing in a Mixed-Service Autonomous Vehicle Fleet with Parcel Delivery Service (TRBAM-24-00696) - A151

Hoseb Abkarian/Northwestern University, Nadim Hamad/Northwestern University, Hani Mahmassani/Northwestern University

Choice Models with Stochastic Variables and Random Coefficients (TRBAM-24-00721) - A100

Mehek Biswas/Indian Institute of Science, Abdul Pinjari/Indian Institute of Science, Chandra Bhat/Indian Institute of Science, Sulagna Ghosh/Indian Institute of Science

A Household-Based Online Cooked Meal Delivery Demand Generation Model (TRBAM-24-00723) - A131

Liyuan Chen/University of Toronto, Kaili Wang/University of Toronto, Khandker Habib/University of Toronto

Is it the Trip or the Trip Maker?: Modeling Factors Influencing the Demand Induced by the Availability of Ridesourcing Services in Metro Vancouver (TRBAM-24-00742) - A132

Felita Ong/University of Toronto, Patrick Loa/University of Toronto, Khandker Habib/University of Toronto

A Case for Race and Space in Auto Ownership Modeling: A Los Angeles County study (TRBAM-24-00985) - A152

Tat Srisan/University of California, Los Angeles, Tierra Bills/University of California, Los Angeles

(continued)

Assessing Effects of Pandemic-Related Policies on Individual Public Transit Travel Patterns: A Bayesian Online Changepoint Detection–Based Framework (TRBAM-24-01016) - A153

Yuqian Lin/Hong Kong Polytechnic University, Yang Xu/Hong Kong Polytechnic University, Zhan Zhao/Hong Kong Polytechnic University, Wei Tu/Hong Kong Polytechnic University, Sangwon Park/Hong Kong Polytechnic University, Qingquan Li/Hong Kong Polytechnic University

Unraveling Heterogeneity in Online Shopping and Travel Behavior Through Latent Class Modeling (TRBAM-24-01028) - A162

Ibukun Titiloye/Florida International University, Md Al Adib Sarker/Florida International University, Xia Jin/Florida International University

A Multi-Day, Needs-Based Model for Activity and Travel Demand Analysis (TRBAM-24-01179) - A163

Kexin Chen/Massachusetts Institute of Technology, Jinping Guan/Massachusetts Institute of Technology, Ravi Seshadri/Massachusetts Institute of Technology, Varun Pattabhiraman/Massachusetts Institute of Technology, Youssef Aboutaleb/Massachusetts Institute of Technology, Ali Shamshirpour/Massachusetts Institute of Technology, Moshe Ben-Akiva/Massachusetts Institute of Technology

How Effective Are Fixed-Effects Models in Fixing the Transit Supply-Demand Bidirectional Interaction? (TRBAM-24-01343) - A172

Jorge Diaz-Gutierrez/Pennsylvania State University, Andisheh Ranjbari/Pennsylvania State University

Personalized Route Recommendations for Passengers in Urban Rail Transit Based on Collaborative Filtering Algorithms (TRBAM-24-01292) - A173

Zhiyuan Li/Shenzhen Technology University, Wei Li/Shenzhen Technology University, Qin Luo/Shenzhen Technology University

Group Level Agent-Based Mixed Logit for Nonparametric Estimation of K-Modal Taste Heterogeneity with a Ubiquitous Data Set (TRBAM-24-01415) - A110

Xiyuan Ren/New York University, Joseph Chow/New York University

Microsimulating Demographic Dynamics within an Agent-Based Integrated Urban Model: Application of Machine Learning Techniques (TRBAM-24-02314) - A112

Mohamad Khalil/University of British Columbia, Mahmudur Fatmi/University of British Columbia, Muntahith Orvin/University of British Columbia

Exploring Drivers' Travel Route Choice Intentions Using Latent Class Cluster Analysis and Structural Equation Model (TRBAM-24-01800) - A182

Ning Zhang/Beijing University of Technology, Yiping Wu/Beijing University of Technology, Jian Rong/Beijing University of Technology, Juan Shao/Beijing University of Technology

Individual Travel Destination Prediction Based on Traffic Monitoring Data (TRBAM-24-01581) - A183

Leyao Xiao/Southeast University - Jiulonghu Campus, Qian Chen/Southeast University - Jiulonghu Campus

Analysing Household Vehicle Holdings and Usage in California Using a Two-Stage, Budgeting-Based Multiple Discrete-Continuous Model (TRBAM-24-02347) - A101

Shobhit Saxena/University of Texas, Austin, Chandra Bhat/University of Texas, Austin, Abdul Pinjari/University of Texas, Austin

Choice-Based Service Region Assortment Problem with Statewide Synthetic Data: Toward Equitable Transportation Design (TRBAM-24-02330) - A111

Xiyuan Ren/New York University, Joseph Chow/New York University

A Utility-Based Approach to Modeling Systemic Resilience of Highway Networks with an Application in Utah (TRBAM-24-02375) - A192

Gregory Macfarlane/Brigham Young University, Max Barnes/Brigham Young University, Natalie Gray/Brigham Young University

Forecasting Taxi and Transportation Network Company Demand Using Multi-Task Learning (TRBAM-24-02495) - A193

Yujie Guo/Northwestern University, Ying Chen/Northwestern University, Yu Zhang/Northwestern University

Exploring the Influence of Perceived Built Environment on Commute Mode Choice: A Case Study in China (TRBAM-24-02442) - A200

Huan Lu/University of Shanghai for Science and Technology, Hongcheng Gan/University of Shanghai for Science and Technology

Time-Varying Patterns of Intercity Traffic Mobility and Determinants: New Evidence of a Location-Based Services Data Set from China (TRBAM-24-02710) - A201

Weijie Yu/Southeast University, Wei Wang/Southeast University, Xuedong Hua/Southeast University, Dong Ngoduy/Southeast University

Development and Application of a Household Vehicle Fleet Micro-Simulator to Assess the Impact of Technology Progress and Clean Vehicle Policies on Fleet Turnover and Equity (TRBAM-24-02927) - A202

Ling Jin/Lawrence Berkeley National Laboratory, Connor Jackson/Lawrence Berkeley National Laboratory, Yuhan Wang/Lawrence Berkeley National Laboratory, Qianmiao Chen/Lawrence Berkeley National Laboratory, Tin ho/Lawrence Berkeley National Laboratory, C. Anna Spurlock/Lawrence Berkeley National Laboratory, Aaron Brooker/Lawrence Berkeley National Laboratory, Jacob Holden/Lawrence Berkeley National Laboratory, Jeff Gonder/Lawrence Berkeley National Laboratory, Mohamed Bouzaghrane/Lawrence Berkeley National Laboratory, Bingrong Sun/Lawrence Berkeley National Laboratory, Shivam Sharda/Lawrence Berkeley National Laboratory, Venu Garikapati/Lawrence Berkeley National Laboratory, Tom Wenzel/Lawrence Berkeley National Laboratory, Juan Caicedo/Lawrence Berkeley National Laboratory

Unraveling the Relationship Between Ridesourcing Services and Conventional Modes in Toronto: A Stated Preference Study in the City of Toronto (TRBAM-24-02812) - A133

Patrick Loa/University of Toronto, Felita Ong/University of Toronto, Jason Hawkins/University of Toronto, Khandker Habib/University of Toronto

Energy Forecasting and Scenario Planning for Sustainable Decision Making in Urban Rail Transit Systems (TRBAM-24-03053) - A203

Zhuo Han/University of Massachusetts, Amherst, Jimi Oke/University of Massachusetts, Amherst, Eleni Christofa/University of Massachusetts, Amherst, Eric Gonzales/University of Massachusetts, Amherst

Analysis of Route Sets and Attributes in Route Choice Estimation for Urban Traffic Management Using GPS Data (TRBAM-24-04096) - A210

Anna Danielsson/Linköping University, David Gundlegård/Linköping University, Clas Rydergren/Linköping University

Do Scooter Parking Zones Reduce Preference for Shared E-Scooters in Last-Mile Travel?: A Hybrid Nested Weibit Choice Modeling Approach (TRBAM-24-04001) - A140

Sunghoon Jang/Hong Kong Polytechnic University

Parallelization of Travel Demand Models with Dependent Agents: Comparing Model Simplification and Agent Synchronization for Shared Household Vehicles (TRBAM-24-03627) - A142

Jelle Kübler/Karlsruhe Institute of Technology (KIT), Lucas Schuhmacher/Karlsruhe Institute of Technology (KIT), Robin Andre/Karlsruhe Institute of Technology (KIT), Gabriel Wilkes/Karlsruhe Institute of Technology (KIT), Martin Kagerbauer/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

Temporal Transferability of Activity-Based, Time-of-Day Choice Models in the Developing Country: The Case of Shanghai, China (TRBAM-24-04226) - A122

Ying Liu/Tongji University, Xin Ye/Tongji University, Shuguang Geng/Tongji University

The Importance of the Social Environment in Leisure Destination Choice: An Analysis of Homophily Using a Mixed Multinomial Logit Model (TRBAM-24-04414) - A211

Benjamin Gramsch-Calvo/ETH Zurich, Kay Axhausen/ETH Zurich

Exploring the Nonlinear Effects of Weather and Built Environment on Metro Ridership: Evidence from Chongqing, China (TRBAM-24-05238) - A212

Hongtai Yang/Southwest Jiaotong University, Siyu Zhang/Southwest Jiaotong University, Yanfen Jiang/Southwest Jiaotong University, Guocong Zhai/Southwest Jiaotong University

Comparing Impacts of Access and Egress Distances on Transit Commute Mode Choices in Shanghai Based on Zone-Based and Node-Based Measures (TRBAM-24-05602) - A120

Ke Wang/Tongji University, Lin Yao/Tongji University, Xin Ye/Tongji University, Yiwei Zhou/Tongji University

The Bivariate Finite Mixture Continuous Logit Model: Formulation and Application for Recreation Start Time and Duration Choices of Non-Commuters (TRBAM-24-05603) - A123

Shuguang Geng/Tongji University, Xin Ye/Tongji University

Framework for Analyzing Equity Concerns Related to Mobility on Demand (TRBAM-24-05745) - A213

Grace Kagho/ETH Zurich, Krishna Murthy Gurumurthy/ETH Zurich, Omer Verbas/ETH Zurich, Joshua Auld/ETH Zurich

Modeling Households' First Vehicle Purchase Timing and Vehicle Type Choices (TRBAM-24-05808) - A113

Md Shahadat Hossain/University of British Columbia, Mahmudur Fatmi/University of British Columbia

DATG: A Data-Driven Framework for Generating Travelers with Demographic-Activity-Travel Information (TRBAM-24-05830) - A220

Jianhong Ye/Tongji University, Yifan Hu/Tongji University, Lei Gao/Tongji University

Few-Shot Accurate Recognition of Vehicle Lane-Changing Intention in Connected Vehicle Environment: A Meta-Transformer Approach (TRBAM-24-06030) - A221

Yining Ren/Tongji University, Zhizhou Wu/Tongji University, Yin Hai Wang/Tongji University, Yunyi Liang/Tongji University

A Sequential Trip-Based Mode Choice Modeling in Activity-Based Framework (TRBAM-24-05900) - A141

Shin-Hyung Cho/University of Seoul, Sunghoon Jang/University of Seoul, Shin Hyoung Park/University of Seoul

Investigating the Effect of Imputing Trip-Purposes in a Trip Generation Model (TRBAM-24-06225) - A222

Azam Ali/University of Leeds, Ellen Flaata/University of Leeds, Trude Tørset/University of Leeds, Stephane Hess/University of Leeds, Charisma Choudhury/University of Leeds

Improved Trip Distribution Models Using the Empirical Bayes Method (TRBAM-24-06266) - A121

Qian Zhang/Tongji University, Xin Ye/Tongji University, Ke Wang/Tongji University, Ying Liu/Tongji University

Predicting Dynamic Origin-Destination Flow for Multimodal Transport Systems: A Physics-informed Deep Learning Approach (TRBAM-24-06398) - A223

Xinghua Liu/Tongji University, Kaidi Yang/Tongji University, Ye Li/Tongji University, Jing Fan/Tongji University, Xuan Shao/Tongji University

Applying an Agent-Based Social Network in Travel Forecasting: Effects on Disease Spread (TRBAM-24-06454) - A230

Joanna Ji/Technische Universität München, Gabriel Hannon/Technische Universität München, Qin Zhang/Technische Universität München, Ana Moreno/Technische Universität München, Rolf Moeckel/Technische Universität München

On the Variation in Mode Choice Behavior in Agent-based Travel Demand Models (TRBAM-24-06473) - A143

Tim Woerle/Karlsruhe Institute of Technology (KIT), Lars Briem/Karlsruhe Institute of Technology (KIT), Jelle Kübler/Karlsruhe Institute of Technology (KIT), Michael Heilig/Karlsruhe Institute of Technology (KIT), Lisa Ecke/Karlsruhe Institute of Technology (KIT), Martin Kagerbauer/Karlsruhe Institute of Technology (KIT), Peter Vortisch/Karlsruhe Institute of Technology (KIT)

A Multiple Discrete Continuous Extreme Value (MDCEV) Model of Multi-day Mode Choice and Frequencies (TRBAM-24-06530) - A102

Ganesh Ramakrishnan/Indian Institute of Technology, Madras, Shobhit Saxena/Indian Institute of Technology, Madras, Karthik Srinivasan/Indian Institute of Technology, Madras, Abdul Pinjari/Indian Institute of Technology, Madras, Chandra Bhat/Indian Institute of Technology, Madras

4086



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Rejuvenation and Recycling

Lorena Garcia Cucalon, Kraton Polymers, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

This poster session provides insights relevant to recycling agents and reclaimed material inclusion into flexible pavements.

Effect of Bio-Based and Petroleum-Based Rejuvenators on the Ultraviolet Aging Behavior of Rejuvenated SBS-Modified Bitumen (TRBAM-24-00049) - B706

Zhilongcao Cao/Beijing University of Technology, Juan Yi/Beijing University of Technology, Xiaobin Han/Beijing University of Technology

Molecular Analysis for the Rejuvenation of Polymer and Bio-Oil on the Aged Bitumen (TRBAM-24-01151) - B705

Ke Shi/Chang'an University, Feng Ma/Chang'an University

Comparative Analysis of Diffusion Characteristics of Bio-Based Asphalt Rejuvenators from Various Sources (TRBAM-24-01593) - B704

Tao Zhou/Harbin Institute of Technology, Ruirui Liu/Harbin Institute of Technology, Zejiao Dong/Harbin Institute of Technology, Liping Cao/Harbin Institute of Technology

Evaluation of Alternative Approaches to Restore the Rheology of Recycled Asphalt Binders (TRBAM-24-03571) - B708

Andrew Fried/North Carolina State University, Ilker Boz/North Carolina State University, Jaime Preciado/North Carolina State University, Saqib Gulzar/North Carolina State University, Shane Underwood/North Carolina State University, Cassie Castorena/North Carolina State University, Jhony Habbouche/North Carolina State University

Maximizing Bitumen's Recycling Potential Through Repetitions of Aging and Rejuvenation (TRBAM-24-04482) - B709

Yongping Hu/University of Nottingham, Max Allanson/University of Nottingham, Jack Ryan/University of Nottingham, Haopeng Wang/University of Nottingham, Lu Zhou/University of Nottingham, Gordon Airey/University of Nottingham

Evaluation of Rheological and Failure-Based Recycling Agent Optimization Methods (TRBAM-24-03623) - B707

Hamzeh Haghshenas Fatmehsari/FHWA: Federal Highway Administration, Adrian Andriescu/FHWA: Federal Highway Administration, Raj Dongre/FHWA: Federal Highway Administration, Varun Veginati/FHWA: Federal Highway Administration, Dave Mensching/FHWA: Federal Highway Administration, Jack Youtcheff/FHWA: Federal Highway Administration

4087



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Alternative Binders and Biomaterials

Lorena Garcia Cucalon, Kraton Polymers, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

Non-Petroleum Binders for Flexible Pavements in the Netherlands (TRBAM-24-00347) - B690

Liz Mensink/Technische Universiteit, Delft, Aikaterini Varveri/Technische Universiteit, Delft, Panos Apostolidis/Technische Universiteit, Delft, Joop Groen/Technische Universiteit, Delft, Bert Jan Lommerts/Technische Universiteit, Delft

Preliminary Study on the Enhancement of the Strength of Diluted Asphalt Based on the Synergistic Effect of Microbial Digestion and Diluent Volatilization (TRBAM-24-01906) - B693

Ying Wang/Harbin Institute of Technology, Junyan Yi/Harbin Institute of Technology, Ang Li/Harbin Institute of Technology, Zhongshi Pei/Harbin Institute of Technology, Aiqi Tang/Harbin Institute of Technology, Decheng Feng/Harbin Institute of Technology

Recyclability of a Wood-Based Bio-Binder for Total Substitution of Petroleum-Based Asphalt Binder (TRBAM-24-02283) - B691

Leidy V Espinosa/Universidade de Sao Paulo, Liedi Bernucci/Universidade de Sao Paulo, Kamilla Vasconcelos/Universidade de Sao Paulo

Lignin-Based Antioxidants for Asphalt Binders: Evaluating Optimum Content Through Chemical and Rheological Studies (TRBAM-24-02335) - B692

Firmansyah Rachman/National Cheng Kung University, Shih-Hsien Yang/National Cheng Kung University, Hanna Chintya Febriani Gunawan/National Cheng Kung University, Deiza Balqish/National Cheng Kung University, Nam Tran/National Cheng Kung University

Recycling of Rice Straw in Petroleum Asphalt: Yield Analysis and Performance Evaluation (TRBAM-24-02881) - B694

Jie Zhou/Harbin Institute of Technology, Zejiao Dong/Harbin Institute of Technology, Liping Cao/Harbin Institute of Technology, Lingwen Li/Harbin Institute of Technology, Yanling Yu/Harbin Institute of Technology, Zhao Chen/Harbin Institute of Technology

4088



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Epoxy-Modified Asphalt

Diana Sanchez, AtkinsRéalis, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

Influence of SBS and Crumb Rubber Modified Asphalt on Curing Behavior of Epoxy Asphalt Binder and Cracking Characteristic of Its Concrete (TRBAM-24-00594) - B683

Yixin Zhou/Southeast University, Gang Xu/Southeast University, Hao Yu/Southeast University, Yulou Fan/Southeast University, Houzhi Wang/Southeast University, You Wu/Southeast University, Yunhong Yu/Southeast University, Jun Yang/Southeast University

The Effect of Composite Curing Agent Ratio on the Photooxidative Aging Behavior of Epoxy Asphalt Based on Molecular Dynamics Simulation (TRBAM-24-01512) - B696

Mingyue Li/Southeast University, Zhaohui Min/Southeast University

Study on the Component Distribution and Mechanical Behavior of Thermal Oxygen Aged Epoxy Asphalt with Different Curing Agent Ratios (TRBAM-24-01513) - B697

Mingyue Li/Southeast University, Zhaohui Min/Southeast University

Effects of Epoxy Resin Content on Properties of Hot Mixing Epoxy Asphalt Binders (TRBAM-24-02037) - B681

Jiahao Tian/Southeast University, Sang Luo/Southeast University, Qing Lu/Southeast University, Shicheng Liu/Southeast University

Toughening Epoxy Asphalt Using SBS, Crumb Rubber, and Core-Shell Rubber: Performance Evaluation and Mechanism Explanation (TRBAM-24-03635) - B682

Yulou Fan/Southeast University, Yixin Zhou/Southeast University, Bingshen Chen/Southeast University, Peng Huang/Southeast University, Xingyu Yi/Southeast University, You Wu/Southeast University, Wei Huang/Southeast University, Houzhi Wang/Southeast University, Jun Yang/Southeast University

(continued)

GO Grafted Epoxy-Ended Hyperbranched Polymer and Its Effects on Properties of Cold Mixed Epoxy Asphalt (TRBAM-24-04957) - B698

Xiaoyang Shao/Hohai University, Wuyang Wei/Hohai University, Jingjing Si/Hohai University, Bicheng Wei/Hohai University, Junyan Wang/Hohai University, Xiaojuan Jia/Hohai University, Shuang Zhao/Hohai University, Gongying Ding/Hohai University, Xin Yu/Hohai University

Adhesion Characteristics Between Epoxy Binder and Recycled Glass (TRBAM-24-05247) - B699

Kai Xin/Michigan Technological University, Lei Yin/Michigan Technological University, Meng Wu/Michigan Technological University, Zhanping You/Michigan Technological University

Evaluation of Aging Characteristics of Amine-Cured Epoxy Asphalt Under Different Aging Conditions (TRBAM-24-05276) - B695

Qichang Wang/Southeast University, Zhaohui Min/Southeast University, Wei Huang/Southeast University

4089



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Binders for Flexible Pavement: Chemical Characterization Advancements

Yogesh Kumbargeri, Western Research Institute, presiding

Sponsored By Standing Committee on Binders for Flexible Pavement

Fire-Retarding Asphalt Pavement for Urban Road Tunnels: A State-of-the-Art Review and Beyond (TRBAM-24-01767) - B687

Xi Jiang/Hong Kong Polytechnic University, Xuehui Zhang/Hong Kong Polytechnic University, Zhen Leng/Hong Kong Polytechnic University

Molecular Dynamics Simulation of the Impact of Waste Cooking Oil Under Various Stages on Adhesive Properties of Aged Asphalt–Mineral Interface Considering Mineral Aggregates and Moisture (TRBAM-24-01977) - B685

Shiao Yan/Southeast University, Qiao Dong/Southeast University, Xueqin Chen/Southeast University, Xiang Wang/Southeast University, Bin Shi/Southeast University, Yao Kang/Southeast University, Jitong Ding/Southeast University

Performance Assessment of Microencapsulated Phase Change Materials with Low to High Thermoregulation Range in Asphalt Binder (TRBAM-24-02032) - B680

Ayyaz Fareed/Rowan University, Ayman Ali/Rowan University, Yusuf Mehta/Rowan University, Wade Lein/Rowan University

Study on Chemical Characterization and Material Properties of Asphalt Regenerating Agents: Insights from Molecular Dynamics Simulations and Density Functional Theory Calculations (TRBAM-24-02114) - B684

Shiao Yan/Southeast University, Qiao Dong/Southeast University, Xueqin Chen/Southeast University, Xiang Wang/Southeast University, Bin Shi/Southeast University, Yao Kang/Southeast University, Jitong Ding/Southeast University

Linking Chemical Structure to the Linear and Nonlinear Properties of Asphalt Binders (TRBAM-24-02514) - B688

Reza Salehfard/Politecnico di Torino, Sadegh Yeganeh/Politecnico di Torino, Davide Dalmazzo/Politecnico di Torino, Shane Underwood/Politecnico di Torino, Ezio Santagata/Politecnico di Torino

Characterising Adhesion and Selective Adsorption at the Bitumen-Mineral Interface (TRBAM-24-04333) - B689

Lu Zhou/University of Nottingham, Gordon Airey/University of Nottingham, Yuqing Zhang/University of Nottingham

Assessment of High-Enthalpy Composite Eutectic Phase Change Materials Efficiency in Asphalt Binders for Cooling Pavements (TRBAM-24-03405) - B686

Jiasheng Dai/Chang'an University, Feng Ma/Chang'an University, Cesare Sangiorgi/Chang'an University, Giulia Tarsi/Chang'an University, Zhen Fu/Chang'an University, Piergiorgio Tataranni/Chang'an University

4090



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Characterization and Modeling of the Response and Performance of Asphalt Mixtures

Amy Beise, North Dakota Department of Transportation, presiding

Sponsored By Standing Committee on Asphalt Mixture Evaluation and Performance

Viscoelastic-Viscoplastic Characterization of Asphalt Mixtures Based on the Locally Homogeneous Finite Element Simulation (TRBAM-24-00159) - B643

Cong Du/Shandong University, Ning Zhang/Shandong University, Jianqing Wu/Shandong University, Chuanyi Ma/Shandong University, Hongbo Zhang/Shandong University, Yuan Tian/Shandong University, Jianzhu Wang/Shandong University

Evaluation of Healing Performance of Asphalt Mixtures Using the Uniaxial Tension-Compression Test (TRBAM-24-00349) - B672

Satvik Pratap Singh/Technische Universiteit, Delft, Panos Apostolidis/Technische Universiteit, Delft, Xueyan Liu/Technische Universiteit, Delft, Sandra Erkens/Technische Universiteit, Delft

An In Situ Method to Evaluate the Interlayer Bond Between Hot

Mix Asphalt and Portland Cement Concrete Surface (TRBAM-24-00383) - B647

Satyavati Komaragiri/University of Texas, Austin, Thanos Drimalas/University of Texas, Austin, Darren Hazlett/University of Texas, Austin, Kevin Folliard/University of Texas, Austin, Amit Bhasin/University of Texas, Austin

Backcalculation of Asphalt Concrete Poisson's Ratio Using the Ultrasonic Pulse Velocity Test (TRBAM-24-00387) - B644

Yujia Lu/University of Illinois, Urbana-Champaign, Renan Santos Maia/University of Illinois, Urbana-Champaign, Ramez Hajj/University of Illinois, Urbana-Champaign

Modeling Damage Caused by Combined Thermal and Traffic Loading Using Viscoelastic Continuum Damage Theory (TRBAM-24-00611) - B658

Zhe Zeng/North Carolina State University, Youngsoo Kim/North Carolina State University, Shane Underwood/North Carolina State University, Murthy Guddati/North Carolina State University

Evolution of Texture and Skid Resistance of Polymer-Modified Asphalt Mixtures Based on Accelerated Loading Tests (TRBAM-24-00719) - B673

Yunhong Yu/Southeast University, Jiulonghu, Xudong Shi/Southeast University, Jiulonghu, You Wu/Southeast University, Jiulonghu, Yulou Fan/Southeast University, Jiulonghu, Houzhi Wang/Southeast University, Jiulonghu, Jun Yang/Southeast University, Jiulonghu, Xinquan Xu/Southeast University, Jiulonghu

Analysis of Crumb Rubber Content Influence on Damage Evolution and Pattern Recognition of Rubberized Epoxy Asphalt Mixture Using Acoustic Emission Techniques (TRBAM-24-00733) - B674

Chenguang Shi/Southeast University, You Wu/Southeast University, Song Liu/Southeast University, Yulou Fan/Southeast University, Jun Yang/Southeast University

Characterization of Ravelling Potential of Natural, Fiber-Reinforced, Open-Graded Friction Courses Mixes Under Various Environmental Conditions with Machine Learning Algorithms (TRBAM-24-00873) - B663

Ashish Sharma/Indian Institute of Technology, Guwahati, Rajan Choudhary/Indian Institute of Technology, Guwahati, Ankush Kumar/Indian Institute of Technology, Guwahati, Saswat Dash/Indian Institute of Technology, Guwahati

Macro-Micro Performance Evolution Behavior of Fine-Grained Porous Asphalt Mixture Exposed to Ultraviolet-Water-Heat-Load Coupling Action (TRBAM-24-01291) - B655

Longtao Wang/Southeast University, Jian Xu/Southeast University, Chao Zhang/Southeast University, Chao Liu/Southeast University, Xianhua Chen/Southeast University

A Thermosetting Asphalt for Porous Asphalt Mixture Containing Reclaimed Asphalt Pavement: A Case of Epoxy Asphalt with Polyethylene Glycol Chain (TRBAM-24-01405) - B656

Qichang Wang/Southeast University, Long Cheng/Southeast University

Component-Based Damage Characterization of Asphalt Mixtures Considering Modern Binder Rheological Indexes and Aggregate Morphology (TRBAM-24-01630) - B646

Alexis Enríquez-León/Federal University of Rio de Janeiro, Marcos Rocha/Federal University of Rio de Janeiro, Patrícia Osmari/Federal University of Rio de Janeiro, Leni Leite/Federal University of Rio de Janeiro, Larissa Barros/Federal University of Rio de Janeiro, Thiago Aragão/Federal University of Rio de Janeiro, Luis Alberto Nascimento/Federal University of Rio de Janeiro

Characterization of Asphalt-Aggregate Interface Adhesion: Considering Physico-Chemical Properties of Aggregates (TRBAM-24-01638) - B675

Zeijiao Dong/Harbin Institute of Technology, Shanhong Wan/Harbin Institute of Technology, Tao Zhou/Harbin Institute of Technology, Xinyu Li/Harbin Institute of Technology, Liping Cao/Harbin Institute of Technology

Fatigue and Thermal Shrinkage Behavior of Semi-Flexible Asphalt Grouted with Cement Asphalt Emulsion Paste (TRBAM-24-01739) - B664

Sohrab Zarei/Hainan University, Jian Ouyang/Hainan University, Mohsen Alae/Hainan University, Wanqiu Liu/Hainan University

(continued)

A Novel Soft-Computing Approach to Predict the Stiffness Modulus of Asphalt Mixtures Overcoming the Limitations of the Traditional Master Curves (TRBAM-24-03873) - B642

Gilberto Martinez-Arguelles/Universidad del Norte, Rodrigo Polo-Mendoza/Universidad del Norte, Rita Peñabaena-Niebles/Universidad del Norte

Laboratory Characterization of Additive-Modified Asphalt Concrete Mixtures (TRBAM-24-02476) - B649

Matthew Kmetz/Auburn University, David Timm/Auburn University, Carolina Rodezno/Auburn University, Nam Tran/Auburn University, Fan Yin/Auburn University

Development of Macrotexture Test Method for Dense-Graded Asphalt Mixtures (TRBAM-24-04089) - B667

Satish Belagutti/FHWA/Genex, Andy Mergenmeier/FHWA/Genex, Dave Mensching/FHWA/Genex, Leslie Myers/FHWA/Genex, Maryam Sakhaeifar/FHWA/Genex, Ram Kumar Veeraraghavan/FHWA/Genex

Development of the Asphalt Mixture Automated Testing System with Zero Intervention (P24-21052) - B650

Fujie Zhou/Texas A&M Transportation Institute

Mechanical Properties and Performance for Mixtures of the Same Classification (TRBAM-24-03915) - B659

Mayzan Isied/University of Texas, Tyler, Nathaniel Williams/University of Texas, Tyler, Nooralhuda Saleh/University of Texas, Tyler, Kazuo Kuchiishi/University of Texas, Tyler, Shane Underwood/University of Texas, Tyler, Youngsoo Kim/University of Texas, Tyler

Multi-Level Performance Evaluation of Hybrid Rubber Modified Asphalt Mixtures: A Case Study of Virginia (TRBAM-24-04227) - B669

Jhony Habbouche/Virginia Transportation Research Council, Harikrishnan Nair/Virginia Transportation Research Council, Reo Kunori/Virginia Transportation Research Council

Effect of Recycling Agents on the Long-Term Aging Susceptibility and Performance of Asphalt Binders and Mixtures (TRBAM-24-04296) - B677

Lei Xue/North Carolina State University, Saqib Gulzar/North Carolina State University, Cassie Castorena/North Carolina State University

An Assessment of Conventional and Engineered Surface Asphalt Mixtures Through Empirical and Fundamental Performance Tests (TRBAM-24-04953) - B679

Omar Othman/North Carolina State University, Shane Underwood/North Carolina State University, Jhony Habbouche/North Carolina State University, Ilker Boz/North Carolina State University, Stacey Diefenderfer/North Carolina State University

The Influence of Deck Butt Weld Seams on Fatigue Life of Steel Bridge Decks Pavement: Parameter Optimization (TRBAM-24-04979) - B662

Xiujie Jiang/Southeast University, Wei Huang/Southeast University, Weiyi Kong/Southeast University

Paired Wet and Dry Rubber Tire Wheel Tracking to Isolate the Effects of Moisture (TRBAM-24-05165) - B653

Jessica Lewis/National Institute of Standards and Technology, Ashley Carey/National Institute of Standards and Technology, Ben Cox/National Institute of Standards and Technology, Isaac Howard/National Institute of Standards and Technology

Creep Stiffness Behavior of Spray-on Rejuvenator Treated Asphalt Pavements Under Different Aging Conditions (TRBAM-24-05211) - B651

Poornachandra Vaddy/Michigan State University, Tanzila Islam/Michigan State University, Muhammed Emin Kutay/Michigan State University, Syed Waqar Haider/Michigan State University, Bora Cetin/Michigan State University

Evaluation of Rapid Rutting Test as Surrogate Test for Rutting Evaluation of Missouri Mixtures (TRBAM-24-05259) - B648

Punyaslok Rath/University of Missouri, Patrick Beckemeyer/University of Missouri, Nandita Gettu/University of Missouri, William Buttlar/University of Missouri

An Evaluation of Dynamic Modulus Predictive Equations for Asphalt Mixtures with Recycled Asphalt Pavement Material (TRBAM-24-05418) - B641

bharath gottumukkala/Central Road Research Institute CSIR, Surendra Chowda Gatiganti/Central Road Research Institute CSIR, Sudhakar Reddy Kusam/Central Road Research Institute CSIR, Vivek Tandon/Central Road Research Institute CSIR, Amaranatha Reddy Muppireddy/Central Road Research Institute CSIR

Optimized Laboratory Fabrication of Small Specimen Geometry for Streamlining Dynamic Modulus and Cyclic Fatigue Testing of Asphalt Mixtures (TRBAM-24-05597) - B668

Michael Elwardany/FAMU-FSU College of Engineering, Varun Veginati/FAMU-FSU College of Engineering, Dave Mensching/FAMU-FSU College of Engineering, Hamzeh Haghshenas/FAMU-FSU College of Engineering, Mengesha Beyene/FAMU-FSU College of Engineering

Development of a Pullout Test Method to Characterize Fundamental Fiber-Matrix Interfacial Mechanisms in Viscoelastic Asphalt Concrete (TRBAM-24-05667) - B652

Nafiur Rahman/Arizona State University, Tempe, Sercan Serin/Arizona State University, Tempe, Hasan Ozer/Arizona State University, Tempe

(continued)

Comparative Analysis of Empirical and Fundamental Tests for Rutting Evaluation of Asphalt Mixtures (TRBAM-24-05680) - B678

Ilker Boz/Virginia Transportation Research Council, Jhony Habbouche/Virginia Transportation Research Council, Stacey Diefenderfer/Virginia Transportation Research Council, Griffin Coffey/Virginia Transportation Research Council, Aksel Seitllari/Virginia Transportation Research Council, Osman Ozbulut/Virginia Transportation Research Council

Advancing Field Aging Simulation Methods for Cantabro Abrasion Loss Testing (TRBAM-24-05735) - B654

Jonathan Easterling/Mississippi State University, Isaac Howard/Mississippi State University, Jessica Lewis/Mississippi State University, William Sullivan/Mississippi State University

Assessing Chip Seal Performance via Modified Sweep and Vialit Tests (TRBAM-24-05804) - B645

Servan Baran/Oregon State University, Mayank Sukhija/Oregon State University, Erdem Coleri/Oregon State University

Conserving Existing Road Pavements Against Aging: A New Assessment Method and Evaluation of Different Techniques (TRBAM-24-05812) - B657

Xingyu Chen/Hong Kong Polytechnic University, Yuhong Wang/Hong Kong Polytechnic University, Wei Sheng/Hong Kong Polytechnic University

The Influence of Specimen Geometries on the Viscoelastic Properties of Bituminous Mixtures in Torsion (TRBAM-24-06079) - B665

Greena Sunny/IIT Madras: Indian Institute of Technology Madras, Murali Krishnan/IIT Madras: Indian Institute of Technology Madras

4091



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Current Issues in Transportation Energy

Rebecca Dodder, U.S. Environmental Protection Agency (EPA), presiding

Sponsored By Standing Committee on Transportation Energy

An Integrated Transportation Power System Model for a Decarbonizing World (TRBAM-24-00321) - B627

Matthew D. Dean/University of Texas, Austin, Krishna Murthy Gurusurthy/University of Texas, Austin, Zhi Zhou/University of Texas, Austin, Omer Verbas/University of Texas, Austin, Taner Cokyasar/University of Texas, Austin, Kara Kockelman/University of Texas, Austin

Energy Consumption Estimates for Light-Duty Electric Vehicles Based on Trajectories of In-Use Vehicles (TRBAM-24-01814) - B630

Zhiqiang Zhai/Beijing Jiaotong University, Leqi Zhang/Beijing Jiaotong University, Guohua Song/Beijing Jiaotong University, Xiao Li/Beijing Jiaotong University, Lei Yu/Beijing Jiaotong University

Beyond Concept: The Viability of Exclusive Lanes for Zero Emission Vehicles on Expressways (TRBAM-24-03570) - B631

Inyoung Kim/Ajou University, Yejin Kim/Ajou University, Jaekyung Kwon/Ajou University, Changju Lee/Ajou University, Jaehyun So/Ajou University

Assessing Behavioral Factors in Low-Carbon Transportation Adoption Among Heavy-Duty and Off-Road Transportation Sectors in California: A Generative Artificial Intelligence-Assisted Content Analysis (TRBAM-24-04208) - B632

Vuban Chowdhury/University of Arkansas, Fayetteville, Farzana Tuli/University of Arkansas, Fayetteville, Suman Mitra/University of Arkansas, Fayetteville, Vincent Rubinelli/University of Arkansas, Fayetteville

Public-Private Partnerships in Propelling Local Electric Vehicle Charging Infrastructure (TRBAM-24-04476) - B633

Yifeng Tian/JLL Public Institutions Group, Jennifer Hara/JLL Public Institutions Group, Andrew Linowes/JLL Public Institutions Group

Quantifying the Economic Impacts of Light-Duty Electric Vehicle Production (TRBAM-24-04587) - B634

Yue Ke/Argonne National Laboratory, Matthew Sloggy/Argonne National Laboratory

Assessing the Impact of Policy and Technological Evolution on U.S. Light-Duty Used Vehicle Stocks (TRBAM-24-05124) - B635

Ruixiao Sun/Oak Ridge National Laboratory, Shiqi Ou/Oak Ridge National Laboratory, Wan Li/Oak Ridge National Laboratory

Assessing Battery Status and Energy Consumption of Electric Vehicles Based on Spatial Ordered Logit Model (TRBAM-24-05278) - B636

Guo Qiu/Chang'an University, Daniel(Jian) Sun/Chang'an University, Xingyuan Yang/Chang'an University

(continued)

The Triple Effect: Unraveling the Joint Impacts of Electric Vehicles, Solar Photovoltaics, and Work from Home on Household Energy Burden (TRBAM-24-05334) - B640

Nicole Viz/National Renewable Energy Laboratory, Shivam Sharda/National Renewable Energy Laboratory, Venu Garikapati/National Renewable Energy Laboratory, Katelyn Stenger/National Renewable Energy Laboratory, Konstadinos Goulias/National Renewable Energy Laboratory, Christopher Hoehne/National Renewable Energy Laboratory

Fuel Portfolio Scenario Modeling of 2030 Low Carbon Fuel Standard Targets in California (TRBAM-24-05536) - B637

Jin Wook Ro/University of California, Davis, Colin Murphy/University of California, Davis

Assessing Global Electric Vehicle Demand and Supply Across Different Economic Scenarios (TRBAM-24-02583) - B626

Minal Chandra/University of California, Davis, Pablo Busch/University of California, Davis, Francisco Pares Olguin/University of California, Davis, Gil Tal/University of California, Davis

4092



Wednesday, 03:45 p.m. - 05:30 p.m., Convention Center, Hall A

Current Issues in Alternative Fuels and Technologies

Rachael Nealer, U.S. Department of Energy (DOE), presiding

Sponsored By Standing Committee on Alternative Fuels and Technologies, Standing Committee on Geographic Information Science

GIS-Based Site Selection for Hydrogen Refueling Stations in California (TRBAM-24-05816) - B615

Tri Acharya/University of California, Davis, Vishnu Vijayakumar/University of California, Davis, Alan Jenn/University of California, Davis, Lewis Fulton/University of California, Davis

Quantifying Electric Vehicle Mileage in the United States (TRBAM-24-00165) - B622

Lujin Zhao/George Washington University, Eliese Ottinger/George Washington University, Arthur Yip/George Washington University, John Helveston/George Washington University

Assessing Public Opinions of and Interest in Bidirectional Electric Vehicle Charging Technologies: A U.S. Perspective (TRBAM-24-00248) - B628

Matthew D. Dean/University of Texas, Austin, Kara Kockelman/University of Texas, Austin

What Drives Fleets?: Organizations' Perceived Barriers and Motivators for Alternative Fuel Vehicles (TRBAM-24-00461) - B610

Jonn Axsen/Simon Fraser University, Julianne Pickrell-Barr/Simon Fraser University

Revenue Maximizing Shared Parking and Electric Vehicle Charging Management in Multi-Unit Dwellings (TRBAM-24-00468) - B608

Ruolin Zhang/University of Illinois, Urbana-Champaign, Eleftheria Kontou/University of Illinois, Urbana-Champaign

Evaluating Geospatial Patterns of Electric Vehicle Ownership Using Multi-Scale Geographically Weighted Method (TRBAM-24-00807) - B639

Melrose Pan/Oak Ridge National Laboratory, Majbah Uddin/Oak Ridge National Laboratory, Hyeonsup Lim/Oak Ridge National Laboratory

Evaluating Stationary Fast Charging Infrastructure Needs for a Full-Electric, Long-Haulage Truck Fleet in Sweden Using Agent-Based Simulation (TRBAM-24-00975) - B605

Mattias Ingelström/Lunds Universitet, Hamoun Arabani/Lunds Universitet, Mats Alaküla/Lunds Universitet, Francisco Márquez-Fernández/Lunds Universitet

Investigating the Potential of Battery Swapping Method at Refuel Stations for Electric Vehicle Charging: An Integrated Structural Equation Modeling-Artificial Neural Network Approach (TRBAM-24-00977) - B594

Manivel Murugan/National Institute of Technology, Tiruchirappalli, Dr Sankaran Marisamynathan/National Institute of Technology, Tiruchirappalli

Methodology to Estimate Statewide Electric Vehicles Charging Demand in Texas (TRBAM-24-01344) - B593

Michael Cruz/University of Texas, El Paso, Ehsan Yahyazadeh Rineh/University of Texas, El Paso, Sergio Alberto Luna Fong/University of Texas, El Paso, Ruey Long Cheu/University of Texas, El Paso, Ziqi Song/University of Texas, El Paso

Online Electric Vehicle Charging Recommendation: Using Minimum Travel Time Model and Heuristic Search (TRBAM-24-01499) - B592

Rumeng Chen/Chang'an University, Yisheng An/Chang'an University, Chen Mu/Chang'an University, Ting Li/Chang'an University, Xiangmo Zhao/Chang'an University, Yuxin Gao/Chang'an University, Rumeng Chen/Chang'an University

(continued)

Investigating the Characteristics of Correlated Parking-Charging Behaviors for Electric Vehicles: A Data-Driven Approach (TRBAM-24-01500) - B533

Xizhen Zhou/Southeast University, Jiulonghu, Chao Sun/Southeast University, Jiulonghu, Mengqi Lv/Southeast University, Jiulonghu, Xueqi Ding/Southeast University, Jiulonghu, Liang Li/Southeast University, Jiulonghu, Yanjie Ji/Southeast University, Jiulonghu

The Impact of the Parking Spot's Surroundings on the Charging Decision: A Data-Driven Approach (TRBAM-24-01534) - B530

Xizhen Zhou/Southeast University, Jiulonghu, Chao Sun/Southeast University, Jiulonghu, Xueqi Ding/Southeast University, Jiulonghu, Liang Li/Southeast University, Jiulonghu, Yanjie Ji/Southeast University, Jiulonghu

What Factors Influence the Utilization of Roadside Rechargeable Parking Spaces?: A Correlated Mixed Binary Logit Approach (TRBAM-24-01535) - B531

Xizhen Zhou/Southeast University, Jiulonghu, Mengqi Lv/Southeast University, Jiulonghu, Jie Yan/Southeast University, Jiulonghu, Chao Sun/Southeast University, Jiulonghu, Yanjie Ji/Southeast University, Jiulonghu

Estimating Public Charging Demand of Battery Electric Vehicles Considering User Heterogeneity (TRBAM-24-01539) - B601

Xinghua Li/Tongji University, Wei Xu/Tongji University, Yuntao Guo/Tongji University, Xinwu Qian/Tongji University, Jie Yang/Tongji University

What Lies Behind Idle Connection Time in Public Fast Charging Stations?: Evidence from Changsu, China (TRBAM-24-01547) - B532

Xizhen Zhou/Southeast University, Jiulonghu, Chao Sun/Southeast University, Jiulonghu, Xueqi Ding/Southeast University, Jiulonghu, Jie Yan/Southeast University, Jiulonghu, Liang Li/Southeast University, Jiulonghu, Yanjie Ji/Southeast University, Jiulonghu

Understanding the Spatiotemporal Charging Patterns of Battery Electric Vehicles: A Case Study in Shanghai, China (TRBAM-24-01550) - B602

Xinghua Li/Tongji University, Yifan Xie/Tongji University, Yuntao Guo/Tongji University, Wei Xu/Tongji University, Xinwu Qian/Tongji University, Wenjie Zhang/Tongji University

Secondary Data-Driven Range Prediction for Vehicle Electrification (TRBAM-24-01700) - B582

Thomas Herzlieb/Technische Universität Berlin, Stefanie Marker/Technische Universität Berlin

Energy Consumption Model for Electric Vehicle Routing in Dial-a-Ride Systems: A Link-Based Probabilistic Approach Accounting for Uncertain Driving Dynamics and Traffic Conditions (TRBAM-24-01702) - B583

Marcello Montanino/University of Naples Federico II, Ilaria Natale/University of Naples Federico II, Chiara Fiori/University of Naples Federico II, Vincenzo Punzo/University of Naples Federico II

Electric Vehicles: The Future of Gas Stations in Southeast Asian Cities (TRBAM-24-01792) - B584

Wei Zhou/National University of Singapore, Ghim Ping Ong/National University of Singapore, Michael Chadney/National University of Singapore, Shruti Rathore/National University of Singapore, Febriani Astari/National University of Singapore, Faris Faizal/National University of Singapore, Yuxi Zhang/National University of Singapore

Understanding Consumers Prioritizing Incentives in Electric Vehicle Purchases: Identifying Patterns for Effective Policy Strategies (TRBAM-24-01852) - B574

Reuben Tamakloe/Korea Advanced Institute of Science and Technology (KAIST), Livingstone Caesar/Korea Advanced Institute of Science and Technology (KAIST)

Determinants of Mini Electric Vehicle Adoption: Insights from Early Adopters in China (TRBAM-24-01869) - B573

Danting Zhao/Chang'an University, Yuandong Liu/Chang'an University, Hong Chen/Chang'an University

Modular, Platoon-Based, Vehicle-to-Vehicle Electric Charging Problem (TRBAM-24-01959) - B570

Zhexi Fu/New York University, Joseph Chow/New York University

How Many More Charging Stations Do We Need?: A Data-Driven Approach Considering Charging Station Overflow Dynamics (TRBAM-24-01961) - B625

Simon Weekx/Vrije Universiteit Brussel, Gil Tal/Vrije Universiteit Brussel, Lieselot Vanhaverbeke/Vrije Universiteit Brussel

The Mobile Charging Service for Battery Electric Vehicles in an Urban Environment (TRBAM-24-01974) - B572

Shaohua Cui/Chalmers University of Technology, Arsalan Najafi/Chalmers University of Technology, Kun Gao/Chalmers University of Technology

User-Optimal Allocation of Charging Points for Electric Vehicles in Urban Quarters (TRBAM-24-02196) - B562

Simon Leu/Bundeswehr University, Munich, Axel Leonhardt/Bundeswehr University, Munich

Comparing Electric Vehicle Charging Station Coverage (TRBAM-24-02321) - B621

Lily Hanig/Carnegie Mellon University, Catherine Ledna/Carnegie Mellon University, Destenie Nock/Carnegie Mellon University, Corey Harper/Carnegie Mellon University, Arthur Yip/Carnegie Mellon University, Eric Wood/Carnegie Mellon University

Americans' Opinions and Interests in Plug-in Electric Vehicle Smart Charging Programs (TRBAM-24-02518) - B629

Matthew D. Dean/University of California, Irvine, Kara Kockelman/University of California, Irvine

From Diesel to Electric and Hydrogen: Assessing the Viability of Advanced Powertrains for Long-Haul Trucks (TRBAM-24-02565) - B563

Charbel Mansour/Argonne National Laboratory, Olcay Sahin/Argonne National Laboratory, Natalia Zuniga-Garcia/Argonne National Laboratory, Ram Vijayagopal/Argonne National Laboratory, Hoseinali Borhan/Argonne National Laboratory

A Time-Dependent Electric Vehicle Routing Problem with Recharging Stations (TRBAM-24-02610) - B564

Chiara Colombaroni/University of Rome "La Sapienza", Gaetano Fusco/University of Rome "La Sapienza", Mostafa Mohammadi/University of Rome "La Sapienza", GOLMAN RAHMANIFAR/University of Rome "La Sapienza"

Charging Infrastructure Assessment for Shared Autonomous Electric Vehicles in 374 Small and Medium-Sized Urban Areas: An Agent-Based Simulation Approach (TRBAM-24-02623) - B554

Jun Liu/University of Alabama, Ziheng Zhang/University of Alabama, Javier Pena-Bastidas/University of Alabama, Steven Jones/University of Alabama

Financial Incentives for Leveraging the Heterogeneous Flexibility of Electric Vehicle Charging (TRBAM-24-02637) - B553

Christine Gschwendtner/Massachusetts Institute of Technology, Christof Knoeri/Massachusetts Institute of Technology, Annegret Stephan/Massachusetts Institute of Technology

Seeing the Forest and the Trees: Understanding the Heterogeneity of Plug-In Electric Vehicle Owners in Rural California (TRBAM-24-02660) - B617

Anya Robinson/University of California, Davis, Theodora Konstantinou/University of California, Davis, Gil Tal/University of California, Davis

Fast-Charging Electric Vehicles Can Degrade Some Battery Chemistries Quickly While Other Chemistries Are Significantly More Resilient (TRBAM-24-02719) - B552

Hannah Morin/Carnegie Mellon University, Jay Whitacre/Carnegie Mellon University, Jeremy Michalek/Carnegie Mellon University

Electric Vehicle Charging Infrastructure: Implications of Charging Behavior, Station Utilization, Energy Usage, and Environmental Benefits (TRBAM-24-02733) - B540

John Kodi/HNTB, Jimoku Salum/HNTB, MD Sultan Ali/HNTB, Odilo Mdimi/HNTB, Priyanka Alluri/HNTB

The Effect of Electric Vehicle Home Charging on Commercial Charging Infrastructure Planning Under Different Market Penetration Rates (TRBAM-24-02857) - B541

Sayantan Tarafdar/University of Maryland, College Park, Yaobang Gong/University of Maryland, College Park, Xianfeng Yang/University of Maryland, College Park

A Comparative Analysis of Heterogeneous Spatiotemporal Charging Patterns in Private and Taxi Battery-Electric Vehicles: Insights from Large-Scale Trajectory Data (TRBAM-24-03041) - B603

Xinghua Li/Tongji University, Guanhua Xing/Tongji University, Xinyuan Zhang/Tongji University, Yuntao Guo/Tongji University, Xinwu Qian/Tongji University, Tian Lei/Tongji University

Spatial Equity of Electric Vehicle Charging Stations in Nevada: Are We Encouraged? (TRBAM-24-03092) - B542

James Ugochukwu Okorochoa/University of Nevada, Reno, Scott Kelley/University of Nevada, Reno, Seri Park/University of Nevada, Reno, Alireza Ermagun/University of Nevada, Reno

Challenges and Research Needs on the Road to 100% Zero Emission Vehicle Sales: Supply-Side Issues (TRBAM-24-03192) - B612

Alan Jenn/University of California, Davis, Amrita Chakraborty/University of California, Davis, Scott Hardman/University of California, Davis, Kelly Hoogland/University of California, Davis, Claire Sugihara/University of California, Davis, John Helveston/University of California, Davis, Anders Jensen/University of California, Davis, Patrick Plotz/University of California, Davis, Frances Sprei/University of California, Davis, Brett Williams/University of California, Davis, Jonn Axsen/University of California, Davis, Erik Figenbaum/University of California, Davis, Jose Pontes/University of California, Davis, Nazir Refa/University of California, Davis

A Distributionally Robust Joint Chance-Constrained Optimization Model for Vehicle Battery Swapping Station Location Problem (TRBAM-24-03227) - B604

Yuntao Guo/Tongji University, Kangli Yan/Tongji University, Xinghua Li/Tongji University, Xinwu Qian/Tongji University, Cheng Cheng/Tongji University

Range Anxiety and Willingness to Pay for Charging of Electric Vehicle Drivers: A Perspective of Psychological Factors (TRBAM-24-03278) - B550

Zikang Huang/South China University of Technology, Zhou Zhang/South China University of Technology, Ke Wang/South China University of Technology, Mingyang Pei/South China University of Technology

(continued)

Optimizing the Design and Sizing of an Electric Vehicle Charging Station Coupled with Hydro, Diesel, Wind, and Solar Energies Based on Environmental and Economic Objectives (TRBAM-24-03636) - B543

Mohammad Sameti/University College Dublin, Páraic Carroll/University College Dublin

Coupled Management of Workplace Electric Vehicle Charging and Building Energy Use for Economic Gains (TRBAM-24-03850) - B609

Shanshan Liu/University of Illinois, Urbana-Champaign, Alex Vlachokostas/University of Illinois, Urbana-Champaign, Eleftheria Kontou/University of Illinois, Urbana-Champaign

Optimal Deployment of Dynamic Wireless Charging Lanes on Highways Considering Battery Characteristics and Established Charging Resources (TRBAM-24-04018) - B551

Hongyu Zhu/South China University of Technology, Jiazheng Ling/South China University of Technology, Yi Hu/South China University of Technology, Mingyang Pei/South China University of Technology

How Will Growing Electric Vehicle Charging Demand Congest the Electric Distribution System in California? (TRBAM-24-04081) - B614

Yanning Li/University of California, Davis, Alan Jenn/University of California, Davis

Evaluation Spatial Accessibility of DC Fast Charging in California: Exploring Local DC Fast Charging Availability (TRBAM-24-04098) - B624

Kihyun Kwon/University of California, Davis, Gil Tal/University of California, Davis

Locating Electric Vehicle Charging Stations in Neighboring Countries: A Case Study of the Island of Ireland (TRBAM-24-04192) - B544

James Cooper/Trinity College, Dublin, Vinayak Malaghan/Trinity College, Dublin, Bidisha Ghosh/Trinity College, Dublin

Data-Driven Method for Electric Vehicle Charging Demand Analysis: A Case Study in Virginia (TRBAM-24-04212) - B620

Zhaocai Liu/National Renewable Energy Laboratory (NREL), Brennan Borlaug/National Renewable Energy Laboratory (NREL), Andrew Meintz/National Renewable Energy Laboratory (NREL), Christopher Neuman/National Renewable Energy Laboratory (NREL), Eric Wood/National Renewable Energy Laboratory (NREL), Jesse Bennett/National Renewable Energy Laboratory (NREL)

Investigating the Influence of Incentives for Low-Income and Disadvantaged Households on Electric Vehicle Purchase Decisions in California (TRBAM-24-04240) - B616

Amrita Chakraborty/University of California, Davis, David Bunch/University of California, Davis, Scott Hardman/University of California, Davis, Theodora Konstantinou/University of California, Davis

Optimal En Route Charging Station Locations for Electric Vehicles with Heterogeneous Range Anxiety (TRBAM-24-04364) - B606

Xueqi Zeng/Tongji University, Chi Xie/Tongji University, Min Xu/Tongji University, Zhibin Chen/Tongji University

Modeling Consumer Co-Adoption of Electric Vehicles and Solar Photovoltaics in Australia (TRBAM-24-04436) - B534

Elham Hajhashemi/University of Melbourne, Patricia Lavieri/University of Melbourne, Neema Nassir/University of Melbourne

Oh the Places You'll Charge: Exploring Electric Vehicle Driver Charging Substitution Behavior (TRBAM-24-04516) - B524

Aspen Underwood/MITRE Corporation

Electric Vehicle Charging Infrastructure Deployment: A Discussion of Equity and Justice Theories and Accessibility Measurement (TRBAM-24-04521) - B523

Fariba Soltani Mandolakani/Utah State University, Patrick Singleton/Utah State University

Comparative Total Cost of Ownership Analysis for Off-Road Equipment Electrification Incentive Requirement in Near Future (TRBAM-24-04696) - B522

Fuad Un-Noor/University of California, Riverside, Bo Liu/University of California, Riverside, Blake Lane/University of California, Riverside, Craig Rindt/University of California, Riverside, Kanok Boriboonsomsin/University of California, Riverside

Challenges and Research Needs on the Road to 100% Zero-Emission Vehicle Sales: Demand-Side Issues (TRBAM-24-04726) - B613

Scott Hardman/University of California, Davis, Amrita Chakraborty/University of California, Davis, Kelly Hoogland/University of California, Davis, Claire Sugihara/University of California, Davis, John Helveston/University of California, Davis, Anders Jensen/University of California, Davis, Alan Jenn/University of California, Davis, Patrick Jochem/University of California, Davis, Patrick Plotz/University of California, Davis, Frances Sprei/University of California, Davis, Brett Williams/University of California, Davis, Jonn Axsen/University of California, Davis, Erik Figenbaum/University of California, Davis, Jose Pontes/University of California, Davis, Nazir Refa/University of California, Davis

Aviation Fuels: Exploring Low-Carbon Options Under Current Policy (TRBAM-24-04767) - B638

Julie Witcover/University of California, Davis, Colin Murphy/University of California, Davis

(continued)

Enhancing Electric Vehicle Charger Reliability: Developing a Tool to Swiftly Detect Hidden Charger Faults (TRBAM-24-04771) - B623

Vaishnavi Karanam/University of California, Davis, Gil Tal/University of California, Davis

Understanding Spatial-Temporal Attributes Influencing Daily Utilization of Electric Vehicles Charging Stations: A Multi-Nation, Multi-City Study (TRBAM-24-04822) - B521

Boniphace Kutela/Texas A&M Transportation Institute, Abdallah Kinero/Texas A&M Transportation Institute, Hellen Shita/Texas A&M Transportation Institute, Subasish Das/Texas A&M Transportation Institute, Cuthbert Ruseruka/Texas A&M Transportation Institute, Tumlumbe Juliana Chengula/Texas A&M Transportation Institute, Norris Novat/Texas A&M Transportation Institute

A Comprehensive Framework for Exploring Zero-Emissions Vehicle Resistance in the Light-Duty Vehicle Market (TRBAM-24-04877) - B611

Zoe Long/Simon Fraser University, Jonn Axsen/Simon Fraser University, Viviane Gauer/Simon Fraser University

Key Elements of Electrification Strategies for Off-Road Equipment Applications: Alternative Charging Solutions for Advanced Clean Off-Road Equipment (TRBAM-24-05212) - B520

Junhyeong Park/California Air Resources Board (CARB), David Quiros/California Air Resources Board (CARB), Mo Chen/California Air Resources Board (CARB), Weimeng Kong/California Air Resources Board (CARB), Cory Parmer/California Air Resources Board (CARB)

Exploring Potential Charging Location Zones for Electric Vehicle Utilizing a Multi-Objective Optimization Technique (TRBAM-24-05255) - B510

Hasan Shahrier/Dalhousie University, Muhammad Habib/Dalhousie University, Muhammad Nayeem/Dalhousie University

Electric and Gas Vehicle Total Cost of Ownership: Analysis Across Locations and Users in the United States (TRBAM-24-05330) - B511

Maxwell Woody/University of Michigan, Shawn Adderly/University of Michigan, Rushabh Bohra/University of Michigan, Gregory Keoleian/University of Michigan

The Cost Differential Between Electric and Conventional Vehicles: A Socioeconomic Analysis (TRBAM-24-05403) - B512

Steffen Coenen/DKS Associates

Optimizing DC Fast Charging Stations for Electric Vehicle Intercity Trips Along the Lake Michigan Circuit Under Various Budget Constraints (TRBAM-24-05546) - B618

Alireza Rostami/Michigan State University, Amirali Soltanpour/Michigan State University, Ehsan Kamjoo/Michigan State University, Mehrnaz Ghamami/Michigan State University, Ali Zockaie/Michigan State University, Robert Jackson/Michigan State University, Jessica Crawford/Michigan State University

Charging Demand Estimation for Electric Taxi Using Data-Driven Approach Combined with Bounded Rational Behavior Modeling (TRBAM-24-05550) - B560

Qiuyue Huang/Purdue University, Tian Lei/Purdue University, Lei Gong/Purdue University, Fangcai Chen/Purdue University, Qihua Zhan/Purdue University, Qin Luo/Purdue University, Jingjing Chen/Purdue University

Understanding the Dynamic Change of Electric Vehicle Adoption in California: An Analysis of Stated Preference Data (TRBAM-24-05559) - B513

Md Istiak Jahan/University of Central Florida, Tanmoy Bhowmik/University of Central Florida, Naveen Eluru/University of Central Florida

Exploring the Impact of Electricity Tariff and Power Grid Constraints on Charging Behavior and Fast Charging Infrastructure Deployment in Urban Networks: An Activity-Based Approach (TRBAM-24-05621) - B619

Alireza Rostami/Michigan State University, Omer Verbas/Michigan State University, Amirali Soltanpour/Michigan State University, Behdad Ghafarnejhad/Michigan State University, Mehrnaz Ghamami/Michigan State University, Ali Zockaie/Michigan State University

Cost-Competitiveness Analysis of Mobile Chargers in an Electric Vehicle Parking and Charging System (TRBAM-24-05673) - B607

Yanling Deng/New York University, Shanghai, Zhibin Chen/New York University, Shanghai, Xi Lin/New York University, Shanghai

Tackling Electric Vehicle Adoption Challenges: Insights from Refueling Behavior Analysis (TRBAM-24-05731) - B514

Asal Mehditabrizi/University of Maryland, Saeed Saleh Namadi/University of Maryland, Anna Alberini/University of Maryland, Cinzia Cirillo/University of Maryland

The Current State of Light-Duty Electric Vehicle Supply Equipment Costs: A Literature Review (TRBAM-24-05803) - B504

Torrey Lyons/Idaho National Laboratory, Kang-Ching Chu/Idaho National Laboratory, John Smart/Idaho National Laboratory

(continued)

Potential for Electric Vehicle Adoption in Midwest U.S. States: A Stated Preference and Multi-Level Regression with Post-Stratification Study (TRBAM-24-05890) - B600

Omid Armantalab/University of Nebraska, Lincoln, Riddhimoy Ghosh/University of Nebraska, Lincoln, Jason Hawkins/University of Nebraska, Lincoln

Understanding Singaporeans' Preferences for Electric Vehicles: Insights from a Latent Class Model with Attribute Cutoffs (TRBAM-24-06066) - B503

Jinghai Huo/National University of Singapore, Eui-Jin Kim/National University of Singapore, Prateek Bansal/National University of Singapore

Unveiling Optimal Siting and Sizing of Electric Ridesourcing Charging Stations Through Spatial-Temporal Trip Data (TRBAM-24-06098) - B502

HAOYU MO/Hong Kong University, Manlian Pan/Hong Kong University, Zhicheng Jin/Hong Kong University, Xiaotong Sun/Hong Kong University

Exploring Heterogeneous Charging Behavior for Electric Vehicles in Agent-Based Simulations (TRBAM-24-06255) - B501

Arsham Bakhtiari/No Organization, Ashraf Uz Zaman Patwary/No Organization, Francesco Ciari/No Organization, Ali Moeini/No Organization, Ali Hajebrahimi/No Organization

Charging Infrastructure Placement Optimization by Greedy Clustering (TRBAM-24-06498) - B500

Matthew Eagon/University of Minnesota, Twin Cities, Aaditya Badheka/University of Minnesota, Twin Cities, William Northrop/University of Minnesota, Twin Cities

Thursday, January 11 (Sessions 5001)

5001



Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 146C

Scaling Private Capital Mobilization and Financing for Climate Adaptation and Mitigation in Transportation

Rohan Shah, World Bank, presiding

Binyam Reja, World Bank, presiding

Jagoda Egeland, Organisation for Economic Co-operation and Development (OECD), presiding

Sponsored By International Coordinating Council, Standing Committee on Transportation Energy, Standing Committee on Economic Development and Land Use, Standing Committee on Economics and Finance

This workshop will explore recent trends and future directions in private capital flows for climate adaptation and mitigation in the transport sector through perspectives from the global north and south, innovative financing instruments, strategic partnerships, and real-world examples, along with current limitations and challenges ahead in scaling it further to meet one of the biggest investment needs of nearly \$114 trillion in transport alone to achieve global net-zero targets by 2050.

Opening Remarks (P24-21569)

Binyam Reja/World Bank

Panelist 1 (P24-21568)

Andrea Gentili/European Commission

Panelist 2 (P24-21570)

Alyssa Siddiqui/Securing America's Future Energy (SAFE)

Panelist 3 (P24-21571)

Satheesh Sundararajan/World Bank Group

Panelist 4 (P24-21572)

Benjamin Welle/World Resources Institute

Panelist 5 (P24-21573)

Rachel Aland/Coalition for Reimagined Mobility

Panel 2 Moderator (P24-21574)

Rohan Shah/World Bank

Panelist 6 (P24-21575)

Jonathan Gifford/George Mason University

Panelist 7 (P24-21576)

Mike Evans/Arup

Panelist 8 (P24-21577)

Agustina Calatayud/Inter-American Development Bank

Panelist 9 (P24-21578)

Jing Xiong

5002

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, Salon C

Roadway Digital Infrastructure Strategy

John Corbin, Federal Highway Administration (FHWA), presiding

Valerie Shuman, Shuman Consulting Group, LLC, presiding

Sponsored By Standing Committee on Intelligent Transportation Systems, Standing Committee on Regional Transportation Systems Management and Operations, Standing Committee on Freeway Operations, Standing Committee on Vehicle-Highway Automation, Standing Committee on Information Systems and Technology

National roadway network digital infrastructure is foundational to the holistic evolution and management of the three-dimensional, multimodal national transportation system. This workshop will engage leaders within the Transportation Research Board, the U.S. Department of Transportation, and national partner organizations to enable a collaborative strategic research agenda. The agenda will prioritize and align research themes to advance roadway digital infrastructure, transform associated technologies, create innovative partnerships and business models, and engage national business case and application contexts.

(continued)

Plenary Panel: Collaborative Strategy for Roadway Digital Infrastructure (P24-21037)

Julie Lorenz/1898 & Co., Alasdair Cain/Office of the Assistant Secretary for Research and Technology (OST-R), John Harding/Federal Highway Administration (FHWA), Timothy Drake/Intelligent Transportation Society of America, Lawrence Dwyer/American Association of State Highway and Transportation Officials, James Misener/QUALCOMM, Inc., Edward Straub/SAE International

Moving Forward: Areas of Action (P24-21038)

Valerie Shuman/Shuman Consulting Group, LLC, Tracy Larkin Thomason/Nevada Department of Transportation, Todd Peterson/Federal Highway Administration (FHWA), Katherine Petros/Federal Highway Administration (FHWA), Robert Sheehan/Federal Highway Administration (FHWA), Govindarajan Vadakpat/Federal Highway Administration (FHWA)

Measuring Progress: What to Anticipate in 2024 (P24-21039)

Deepak Gopalakrishna/ICF

5003

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 102B

Reproducible Research: Why, What, and How

Zuduo Zheng, University of Queensland, Saint Lucia, presiding

Christine Buisson, Université Gustave Eiffel, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics, International Coordinating Council, Standing Committee on Statewide/National Transportation Data and Information Management, Standing Committee on Artificial Intelligence and Advanced Computing Applications, Standing Committee on Statistical and Econometric Methods, Standing Committee on Transportation Network Modeling, Standing Committee on Transportation Demand Forecasting, Standing Committee on Information and Knowledge Management

This workshop aims to attract more attention from transportation researchers on the importance of making their work reproducible, demonstrate good reproducible research (RR) practices, stimulate healthy discussions on how to promote and reward RR, and ultimately initiate the development of an actionable strategy for setting up a guideline on how to make reproducibility an essential step of the paper review process. Workshop deliverables are short-term and medium-term plans on organizing future RR events with the Transportation Research Board and at other venues.

SUMO: A Popular, Open-Source, Microscopic, and Continuous Multimodal Traffic Simulation Package (P24-21040)

Peter Wagner/DLR - German Aerospace Center

Engaging the Scientific Community in Shedding Light on the Impact of Automated Driving Systems on Traffic Flow: The Case of the Joint Research Centre OpenACC Database (P24-21041)

Biagio Ciuffo/JRC: European Commission Joint Research Centre

Machine Learning for Transportation Data Imputation and Prediction (P24-21042)

Nicolas Saunier/Ecole Polytechnique de Montreal, Xinyu Chen/Polytechnique Montréal

The Impact of Task Underspecification in Evaluating Deep Reinforcement Learning (P24-21370)

Cathy Wu/Massachusetts Institute of Technology

National Science Foundation POSE Project: Consortium of Open-Source Planning Models for Next-Generation Equitable and Efficient Communities and Transportation (P24-21371)

Xuesong Zhou/Arizona State University

5004

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, Salon B

Connected and Automatic Vehicle Deployment Projects and Testbeds: Synthesis

Samer Hamdar, George Washington University, presiding

Sponsored By Standing Committee on Traffic Flow Theory and Characteristics, Standing Committee on Vehicle-Highway Automation, Standing Committee on Traffic Simulation, Standing Committee on Artificial Intelligence and Advanced Computing Applications

Car manufacturers, technology companies, and transportation authorities have invested in creating testbeds and data-collection projects involving connected and automated vehicles (CAVs) in different environments. The objective of this workshop is to bring the leaders of the different CAV projects and testbeds together to present the data collected, the associated settings, their findings, and the challenges they faced when deploying CAVs in controlled and naturalistic conditions. A synthesis of the findings would allow creating useful CAV-related applications and studies.

Selected Projects on Automated Vehicle Field Testing and Test Sites in Germany and Europe (P24-21483)

Tanja Niels/Technical University of Munich

Third Generation Simulation: Collecting Autonomous Vehicles' Trajectory Data in Different Environments from Illinois to Washington, DC (P24-21484)

Alireza Talebpour/University of Illinois, Urbana-Champaign

Closed Courses, Open Testbeds, and Naturalistic Testing of Automated Vehicles in Arizona (P24-21485)

Jeffrey Wishart/Science Foundation Arizona

Connected and Automated Vehicle Testing on I-24 MOTION (P24-21486)

Daniel Work/Vanderbilt University

Naturalistic Advanced Driver Assistance System-Driven Vehicles Data Set with Ground Truth of Surroundings (P24-21487)

Punit Tulpule/TRANSPORTATION RESEARCH CENTER INC (Ohio)

Safety Research at Waymo (P24-21488)

Trent Victor/Waymo

Automated Vehicle Experiment in Australia: Cooperative and Highly Automated Driving Project (P24-21489)

Sebastien Glaser/Queensland University of Technology

5005

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 103A

Understanding Digital Twins for Transportation Systems Management

Kaan Ozbay, New York University, presiding

Sponsored By Standing Committee on Traffic Simulation

Although the idea of pairing simulation with traffic operations is not new, the development and deployment of digital twins have been gaining popularity among transportation practitioners and researchers. This workshop will cover the past and current application of digital twins and future opportunities with a focus on a plethora of applications ranging from traditional traffic signal control to more ambitious city-wide management and planning of various mobility solutions. The role of artificial intelligence and machine learning to handle input and output requirements will also be discussed.

An Overview of the Past, Present, and Future of Digital Twins for Transportation Research, Pilot Testing, and Deployment (P24-21077)

Meenakshy Vasudevan/Noblis

An Overview of the Past, Present, and Future of Digital Twins for Transportation Research, Pilot Testing, and Deployment (P24-21146)

Jiaqi Ma/University of California, Los Angeles

An Overview of the Past, Present, and Future of Digital Twins for Transportation Research, Pilot Testing, and Deployment (P24-21147)

Linda Boyle/New York University

Current Research and Implementation Examples of Digital Twins: From Computer Simulation to Physical Testbeds (P24-21078)

Henry Liu/University of Michigan

(continued)

Current Research and Implementation Examples of Digital Twins: From Computer Simulation to Physical Testbeds (P24-21148)

Xuan Di/Columbia University

Current Research and Implementation Examples of Digital Twins: From Computer Simulation to Physical Testbeds (P24-21149)

Ruimin Ke/Rensselaer Polytechnic Institute (RPI)

Current Research and Implementation Examples of Digital Twins: From Computer Simulation to Physical Testbeds (P24-21150)

Klaus Bogenberger/Technische Universität München

What Are the Opportunities and Challenges for Digital Twins from the Perspective of Academy, Agency, and Industry? (P24-21079)

Kaan Ozbay/New York University, Hari Sripathi/Virginia Department of Transportation, Mohammed Hadi/Florida International University, Satyanarayana Muthuswamy/KLD Engineering, P.C.

5006 CM (3.00)

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, Salon A

Mitigating the Implications of Increasing Vehicle Size and Mass on Pedestrian and Bicyclist Safety

Rebecca Sanders, Safe Streets Research & Consulting, presiding

Sponsored By Standing Committee on Transportation Safety Management Systems, City Transportation Issues Coordinating Council, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation, Standing Committee on Human Factors of Vehicles, Standing Committee on Human Factors of Infrastructure Design and Operations, Standing Committee on Safety Performance and Analysis, Standing Committee on Truck and Bus Safety, Standing Committee on Performance Effects of Geometric Design

Growth in passenger vehicle size is a key contributing factor to the increase in pedestrian and bicyclist deaths and injuries over the last few years. Larger vehicles encourage a "race to the bottom" for traffic safety by increasing crash severity and diluting the effectiveness of prior safety efforts. This workshop will examine recent research related to vehicle size and VRU crashes, as well as potential legislative, technology, and traffic design solutions to mitigate this increased risk.

Introduction and Setting the Stage (P24-20987)

Rebecca Sanders/Safe Streets Research & Consulting, Megan Wier/Oakland Department of Transportation, Christopher Cherry/University of Tennessee, Knoxville

Defining the Solution (Part 1): Legislative Solutions Panel Discussion (P24-20988)

Jessica Cicchino/Insurance Institute for Highway Safety, Jeffrey Michael/Johns Hopkins Center for Injury Research and Policy

Defining the Solution (Part 2): Safer Vehicle Solutions (P24-20989)

Kristin Kingsley/Alliance for Automotive Innovation, Alexander Epstein/Office of the Assistant Secretary for Research and Technology (OST-R)

Defining the Solution (Part 3): Safer Roadway Solutions (P24-20991)

Ali Hangul/Tennessee Department of Transportation, Josue Pluguez/Federal Highway Administration (FHWA)

Report Back and Next Steps (P24-20993)

Rebecca Sanders/Safe Streets Research & Consulting

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 145B

Hybrid Work, Activity Patterns, and Travel Choices in the Post-Pandemic Era

Giovanni Circella, Ghent University, presiding

MD Sami Hasnine, Virginia Polytechnic Institute, presiding

Ipek Sener, Texas A&M Transportation Institute, presiding

Sponsored By Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices, Standing Committee on Transportation Planning Policy and Processes, Standing Committee on Transportation Planning Analysis and Application, Standing Committee on Travel Survey Methods, Standing Committee on Traveler Behavior and Values, Standing Committee on Transportation Network Modeling, Standing Committee on Transportation Demand Management, Standing Committee on Transportation-Related Noise and Vibration

This workshop discusses how activity patterns, remote/hybrid work, and travel choices are shaping in the post-pandemic era. Selected experts will share research findings on remote activities and travel behavior. Attendees will discuss changes in travel behavior in the post-pandemic era. Panel members will discuss the impacts on society, research priorities, and policy implications. Emphasis will be put on both employees' and employers' perspectives about work and activity arrangements.

How Is Telework Continuing to Evolve?: Snapshots from a Series of Surveys (P24-21002)

Patricia Mokhtarian/Georgia Institute of Technology

The Evolving Landscape of Hybrid Work (P24-21003)

Amanda Stathopoulos/Northwestern University, Hani Mahmassani/Northwestern University, Divyakant

Tahlyan/Northwestern University

Some Recent Findings on Tele-Activity Adoption and the Effects of Tele-Activities on Travel Behavior (P24-21004)

Chandra Bhat/University of Texas, Austin, Ram Pendyala/Arizona State University

King County Metro Post-Pandemic Travel Trends Study for Service Planning and Expansion (P24-21545)

David Von Stroh/Cambridge Systematics, JingJing Zang/Cambridge Systematics, Pragnu Vinayak/Cambridge

Systematics, Anne Gienapp/King County Metro, Melissa Gaughan/King County (WA) Metro Transit

Lightning Presentations on Recent Research Findings (P24-21391)

Brian He/University of California, Los Angeles, Thomas Rossi/Cambridge Systematics

Panel Discussion: Remote/Hybrid Work, Activity and Travel Patterns, and the Future of Society (P24-21005)

Bayarmaa Aleksandr/Southern California Association of Governments, Joe Castiglione/San Francisco County Transportation Authority (SFCTA), Elisabetta Cherchi/Newcastle University, Veronique Van Acker/Luxembourg Institute of Socio-Economic Research

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 145A

Building a Path to Better Active Transport: Understanding the Effects of Traffic Noise, Air Quality, and Vulnerable Road User Comfort on Users

Adam Alexander, Gannett Fleming, Inc., presiding

Sponsored By Standing Committee on Transportation-Related Noise and Vibration, Standing Committee on Pedestrians, Standing Committee on Bicycle Transportation, Standing Committee on Effects of Information and Communication Technologies (ICT) on Travel Choices, Standing Committee on Transportation and Public Health, Standing Committee on Air Quality and Greenhouse Gas Mitigation

Creating safe and comfortable environments for active travel is a crucial step in developing more sustainable, healthy, and equitable transportation systems. Active travelers' exposure to traffic noise is an important aspect of a supportive environment, due to the role of noise as not just an environmental hazard but also a mediator or proxy for safety, comfort, vehicle emissions, and air quality. This workshop aims to develop a better understanding about these complex relationships for practitioners and researchers, and to identify clear priority areas for future research and policy development.

Traffic Noise Generation and Exposure (P24-20892)

Adam Alexander/Gannett Fleming, Inc.

(continued)

Active Travel Behavior and Outcomes (P24-20894)

Alexander Bigazzi/University of British Columbia

Panel Discussion: Understanding the Connections (P24-21122)

Aaron Hastings/OST-R/Volpe Center, Alexander Bigazzi/University of British Columbia, Erica Walker/Brown University, Phillippe Apparicio/Université de Sherbrooke, Luc Dekoninck/Ghent University, Ralph Buehler/Virginia Polytechnic Institute

Panel Discussion: Mitigation Through Policy and Practice (P24-21123)

Ahmed El-Aassar/Gannett Fleming, Inc., Aileen Varela-Margolles/Federal Highway Administration (FHWA), Darren Buck/Federal Highway Administration (FHWA)

5009

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 147A

The Future of the Transportation Workforce Development Life Cycle

Victoria Beale, Ohio Department of Transportation, presiding

Sponsored By Standing Committee on Workforce Development and Organizational Excellence, Standing Committee on Research Innovation Implementation Management, Standing Committee on Information and Knowledge Management, Rural Transportation Issues Coordinating Council, International Coordinating Council

This workshop will lay the foundation for the 2025 TRB Conference on Workforce Development and Organizational Excellence. Workshop participants will engage with subject matter experts on the workforce development lifecycle. The cycle includes human resource components, industry stakeholders, workforce talent development and knowledge management techniques. No one office or division within an agency or company owns this process, that is why it can be a challenge to manage for many. Join us to hear from identified SMEs and then express your agency or company's views on each of the topics. The information collected will be utilized to identify calls for papers and potential speakers for the 2025 conference.

Classification Specifications and Job Descriptions (P24-21475)

Glenn McRae/University of Vermont

Training for Minimum Qualifications (P24-21476)

Clark Martin/Federal Highway Administration (FHWA)

Training for Knowledge, Skills, and Abilities After Employment (P24-21477)

Tyler Reeb/California State University, Long Beach

Knowledge Management (P24-21478)

Ali Lohman/American Association of State Highway and Transportation Officials

5010

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 147B

Measuring What Matters: Emerging Transportation Performance Measures

Deanna Belden, Minnesota Department of Transportation, presiding

Michael Grant, ICF, presiding

Peter Rafferty, Cambridge Systematics, presiding

Sponsored By Standing Committee on Performance Management, Standing Committee on Transportation Asset Management, Standing Committee on Research Innovation Implementation Management

While federal regulation defines national performance measures, many transportation agencies are developing or exploring other performance measures to address important goals and desired outcomes. Examples include measures for accessibility, resiliency, sustainability, and equity. Yet these measures are challenging. This workshop will explore these emerging measurement areas, why they are challenging, and potential alternative ways of assessing progress toward goals.

Including the Ends of the Trip: Using Access to Opportunity Measures for Transportation Network Performance (P24-20725)

Eric Lind/University of Minnesota

Performance and Equity: What Has Been Most Effective and How We Can Improve (P24-20726)

Adrienne Heller/Cambridge Systematics

(continued)

Measuring Community Outcomes: Reimagine the South Bronx (P24-20727)

Charles Ukegbu/New York City Department of Transportation

Colorado's Transportation Pollution Reduction Planning Rule: A System to Account for Greenhouse Gas Pollution Impacts of Planning Choices in the Built Environment (P24-20728)

Chris Laplante/Colorado Department of Transportation

Estimating Greenhouse Gas Performance for Transportation Planning and Meeting Emission Reduction Goals (P24-20729)

James Bradbury/Georgetown Climate Center

International Lessons on Resilience and Disaster Management (P24-20730)

Yukio ADACHI/Hanshin Expressway Research Institute for Advanced Technology, Tomohiro FUJITA/Public Works Research Institute

Challenges in Developing Resilience Performance Measures (P24-20731)

Brenda Dix/ICF

Assessing Equity, Access, and Community Outcomes in the Atlanta Region (P24-21051)

Kyung-Hwa Kim/Atlanta Regional Commission

5011



Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 201

Sustainability Aspects of Flexible Pavement Binders from an International Perspective

Amir Golalipour, Federal Highway Administration (FHWA), presiding

Anja Soerensen, European Bitumen Association (Eurobitume), presiding

Sponsored By Standing Committee on Binders for Flexible Pavement, Subcommittee on Sustainable and Resilient Pavements

Sustainability is broad and encompasses the needs of the present without compromising the needs of the future. Pavement binder programs and activities that facilitate balanced decision making among environmental, economic, and social values support the triple bottom line of sustainability. In order to assess these pillars, a life-cycle approach must be considered. Climate change and extreme weather events present significant and growing risks to the safety, reliability, effectiveness, and sustainability of the transportation roadways and infrastructure. This workshop aims to provide an update overview of and exchange on the activities and international developments.

Introduction: Sustainability Aspects of Flexible Pavement Binders (P24-20748)

Amir Golalipour/Federal Highway Administration (FHWA)

Europe: Sustainability Aspects of Flexible Pavement Binders (P24-21205)

Anja Soerensen/European Bitumen Association (Eurobitume)

South America: Sustainability Aspects of Flexible Pavement Binders (P24-21206)

Kamilla Vasconcelos/Universidade de Sao Paulo, Jose Aguiar-Moya/Universidad de Costa Rica

North America: Sustainability Aspects of Flexible Pavement Binders (P24-21207)

Chaitanyaganesh Bhat/Asphalt Institute, Heather Dylla/Construction Partners Inc.

Africa: Sustainability Aspects of Flexible Pavement Binders (P24-21208)

James Maina/South African National Roads Agency, Ltd. (SANRAL)

Australia: Sustainability Aspects of Flexible Pavement Binders (P24-21209)

James Grenfell/Australian Road Research Board

Asia: Sustainability Aspects of Flexible Pavement Binders (P24-21210)

Shih-Hsien Yang/National Cheng Kung University

Introduction for Breakout Discussions (P24-21211)

Sheldon Blaauw/University of Pretoria

Summary of Major Outcomes from Breakouts (P24-21212)

Kiran Mohanraj/Transtec Group, Inc.

5012

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 101

Performance Analysis Workshop

Zahra Afsharikia, WSP, presiding

Sponsored By Standing Committee on Pavement Structural Testing and Evaluation, Section - Pavements

Formerly known as DAWG (for Data Analysis Working Group) and most recently as PAWS (Performance Analysis Workshop), this workshop provides a forum for those working on pavement performance data analysis and research activities that have not yet been completed (and hence included in the TRB meeting lectern or poster sessions) to present their work and solicit input from the workshop participants. The workshop also provides an excellent forum for exchanging information relating to pavement performance, which will ultimately lead to improved pavement performance understanding.

Predicting Asphalt Pavement Deterioration Under Climate Change Uncertainty Using a Bayesian Neural Network (P24-21423)

Bingyan Cui/Rutgers University

Enhancing Climate Resilience and Infrastructure Sustainability in Aviation: A Comprehensive Federal Aviation Administration Research Study (P24-21424)

Matthew Brynick/Federal Aviation Administration (FAA)

Non-Destructive Assessment of Bonded Whitetopping Pavements with a Traffic Speed Deflectometer (P24-21425)

Martin Scavone/ARRB Systems

Multi-Temporal Pavement Image Registration for Pavement Distress Deterioration Analysis (P24-21426)

Yi-Chang Tsai/Georgia Institute of Technology

Accelerated Balanced Asphalt Mix Design Based on Machine Learning and Non-Dominated Sorting Genetic Algorithm-II (P24-21427)

Jian Liu/Virginia Polytechnic Institute

Innovative Federal Aviation Administration Research and Proactive Pavement Roughness Management for Airfield Sustainability (P24-21428)

Tony Gerardi/APR Consultants, Inc.

Falling Weight Deflectometer Temperature Adjustment Factors Using Time History Data (P24-21429)

Nima Kargah-Ostadi/Callentis Consulting Group

A Method of Sourcing, Aggregating, and Joining Network-Level Friction and Texture Measurements, Pavement Mix Design Characteristics, and Publicly Available Precipitation Data to Create a Comprehensive Data Set of In-Service Pavement Performance (P24-21430)

Laura Thriftwood/WDM USA

5013

CM (3.00)

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 140

Highway to Artificial Intelligence: Future-Proofing the Transport Sector

Mehri Mohebbi, University of Florida, presiding

Sponsored By Standing Committee on Women and Gender in Transportation, International Coordinating Council

This is a comprehensive workshop that delves into the role of artificial intelligence (AI) in reshaping the transportation sector, particularly emphasizing gender equity. Its approach includes exploring the transformative power of AI and discussing strategies for fostering diversity. It will use workforce development as a prime example to encourage audience engagement. Key stakeholders will present current trends and lessons learned in using AI to improve transportation systems.

Women in Transportation (P24-21144)

Sara Stickler/WTS International

Artificial Intelligence Gender Data (P24-21145)

Renee Autumn Ray/Hayden AI

Bureau of Transportation Statistics (P24-21493)

Patricia Hu/OST-R/Bureau of Transportation Statistics

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 146B

Section (4)f Net Benefit for Historic Sites

Kristen Zschomler, Federal Railroad Administration (FRA), presiding

Sponsored By Standing Committee on Historic and Archeological Preservation in Transportation

This workshop will provide experience applying the Section 4(f) Net Benefit Evaluation for historic sites. It will include case studies demonstrating the application of the programmatic evaluation on projects, a panel discussion, a group exercise for participants on completing the evaluation, and a question and answer section. This workshop will demonstrate how this programmatic evaluation in the project toolkit can help facilitate project delivery.

Section (4)f Net Benefit for Historic Sites: Case Studies (P24-20489)

David Clarke/Federal Highway Administration (FHWA), Deborah Suci Smith/Federal Railroad Administration (FRA), Bethaney Bacher-Gresock/Federal Highway Administration (FHWA), David Grachen/Edwards-Pitman Environmental Inc.

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 146A

Vital Signs of the Livable Community and Quality-of-Life Paradigms: Where Are We Now?

Alec Biehl, Metropolitan Atlanta Rapid Transit Authority, presiding

Sponsored By Standing Committee on Community Resources and Impacts, Standing Committee on Transportation and Public Health, Subcommittee on Art and Design Excellence in Transportation

The 2002 National Research Council report Community and Quality of Life: Data Needs for Informed Decision Making investigated the concept of livability, its encapsulation through high-quality data sources, and recommended methods and tools for analyzing data. Accordingly, this workshop will initiate innovative, trans-disciplinary collaborations to advance understanding of these and other critical quality-of-life dimensions, framed through two thematic streams: (1) arts and cultural resources in community transportation planning and (2) creating and managing diverse sets of indicators for impact assessment. After a series of presentations highlighting two decades of progress and lingering challenges, attendees will break into small groups led by topic experts to reaffirm the relevance of these paradigms and better equip professionals to work toward societal good.

Principles for Livability and Quality of Life Revisited (P24-21346)

David Abraham/Harris County Toll Road Authority

People-Powered Planning Through Arts and Culture (P24-21347)

Marian Liou/Smart Growth America, Roshani Thakore/Atlanta Regional Commission

Integrating Art, Culture, and Design to Strengthen Connections Among People, Place, and History (P24-21348)

Clare Haggarty/Los Angeles County Transportation Authority (LACMTA)

Development of a Livability Framework for Transportation Planning and Project Processes (P24-21349)

Gloria Jeff/Minnesota Department of Transportation

Framing Quality-of-Life Indicators Across Ages and Across Contexts: AARP's Livability Index™ Platform (P24-21350)

Rodney Harrell/AARP

Neighborhood Indicators for Robust Community Planning (P24-21414)

Kathryn Pettit/Urban Institute, Amanda Phillips de Lucas/Baltimore Neighborhood Indicators Alliance

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 143C

A Different Look at Metro: Public Art, Architecture, and Environmental Graphic Design

Zipporah Yamamoto, Los Angeles County Transportation Authority (LACMTA), presiding
Sponsored By Standing Committee on Passenger Intermodal Facilities, Standing Committee on Human Factors of Infrastructure Design and Operations, Standing Committee on Landscape and Environmental Design, Standing Committee on Community Resources and Impacts, Subcommittee on Art and Design Excellence in Transportation, Standing Committee on Urban Rail Transit Systems

Join the Washington Metropolitan Area Transit Authority (WMATA) staff for an interactive workshop highlighting the evolution of the Authority's public artworks, architecture, and design considerations over the past almost 50 years. From the iconic core stations designed by Harry Weese and Associates in the 1970s such as the Gallery Place station, to the system's latest station at Potomac Yard (2023) and Metro's new headquarters at L'Enfant Plaza, the workshop will highlight the evolution of the Authority's unique visual identity.

A Different Look at Metro: Public Art, Architecture, and Environmental Graphic Design (P24-20722)

Laurent Odde/Washington Metropolitan Area Transit Authority

Presentation (P24-21553)

Graham Thomas/Leuterio Thomas

Presentation (P24-21554)

Alexey Ikonomou/ashton

Thursday, 09:00 a.m. - 12:00 p.m., Convention Center, 143AB

Transportation Applications of Uncrewed Aircraft Systems

Qassim Abdullah, Woolpert, Inc., presiding

Sponsored By Standing Committee on New Users of Shared Airspace, Standing Committee on Aviation Economics and Forecasting, Standing Committee on Aviation Safety, Security and Emergency Management

This workshop provides participants from the transportation community with the necessary knowledge about current drone technologies and their use for geospatial product generation and structural inspection. The training teaches attendees how to successfully design, plan, and execute an aerial mission project to support GPS-based mapping using an unmanned aircraft system (UAS). This workshop will have have operational requirements and good practice guidelines detailed together with guidelines on flight planning strategy and ground control distribution. In addition, the training will shed light on the latest Federal Aviation Administration rules and regulations on UAS.

Woolpert Perspective (P24-20204)

Qassim Abdullah/Woolpert, Inc.

Ohio Department of Transportation Perspective (P24-20205)

Jamie Davis/Ohio Department of Transportation

Embry Riddle Aeronautical University Perspective (P24-20206)

Kevin Atkins/Embry Riddle Aeronautical University

Embry Riddle Aeronautical University Perspective (P24-20207)

Nickolas Macchiarella/Embry Riddle Aeronautical University