



# Human Factors and Ergonomics in Health Care

March 24-27, 2019  
Chicago, Illinois

Platinum Sponsor



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# HFES

## 63RD INTERNATIONAL ANNUAL MEETING

**October 28 –  
November 1, 2019**

Sheraton Grand Seattle  
Seattle, Washington

# ERGO

Symposium

**October 28, 2019**

Washington State Convention Center • Seattle, Washington



## Human Factors and Ergonomics in Health Care

March 9 – 11, 2020

Westin Harbour Castle Hotel  
Toronto, ON Canada

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# Welcome to the 2019 Health Care Symposium!

Dear HCS 2019 Attendees,

We can't describe how excited we are for this year's Health Care Symposium. Although we say it every year, this will be our best year yet. Chicago is one of the epicenters of United States healthcare delivery and medical research, and we are therefore delighted to once again be hosting our event in this great city. Our program is larger than it has ever been with an expanded 5<sup>th</sup> breakout room and more workshops. This allowed us to accept more lectures and panels, and is evidence of the ever-increasing quality of our submissions. We have an excellent program full of cutting-edge research, practice, and guidance at the forefront of HF/E and healthcare, from a diversity of researchers, practitioners, regulators, engineers, designers, and program managers from around the world. So thank you in advance to all of our presenters! Also, we'd like to extend a special thank you to our sponsors and exhibitors, and especially our Platinum Sponsor, Ipsos, for their continuing support of the symposium.

There are several new features being introduced to the symposium this year, including classroom style seating, a panel session featuring clinicians who unexpectedly became patients and what they learned from that experience, and an evening reception, hosted by Intuitive Surgical. As always, we have a superb keynote speaker lined up for our event. We welcome Dr. Richard Cook, noted physician, researcher, and educator. His keynote presentation, "A Few Observations on the Marvelous Resilience of Bone and Resilience Engineering," will provide a provocative road map to an emerging movement in healthcare.

We want to extend a special thanks to our new HFES management. We also want to deeply thank our team, including the eight program track chairs who have put in an enormous amount of work building out this program.

Sincerely,



**Joseph R. Keebler**  
*Symposium Chair*



**Anthony D. Andre**  
*Symposium Co-Chair*



# Program Committee

The Program Committee of the 2019 International Symposium on Human Factors and Ergonomics in Health Care consists of experts in a wide variety of domains and organizations.

**Symposium Chair** – Joseph R. Keebler, Embry-Riddle Aeronautical University

**Symposium Co-Chair** – Anthony D. Andre, Interface Analysis Associates & San Jose State University

## Clinical and Consumer Health-Care IT Track

**Track Chair** – Emily Patterson, Ohio State University

**Track Chair** – Jason Saleem, University of Louisville  
Janey Barnes, User-View

Ellen J. Bass, Drexel University

A. Zachary Hettinger, National Center for Human Factors in Healthcare - MedStar Health

Richard J. Holden, Indiana University

Richard L. Horst, UserWorks, Inc.

Heidi Kramer, University of Utah

Karen Dunn Lopez, University of Illinois Chicago

Laura G. Militello, Applied Decision Science, LLC

Anne Miller, Cerner Corporation

Priya R. Pennathur, University of Iowa

Michelle L. Rogers, Drexel University

Clayton Rothwell, Ohio State University

Rupa S. Valdez, University of Virginia

Wayne Zachary, Starship Health Technologies

## Hospital Environments Track

Tara Cohen, Cedars-Sinai Medical Center

Ken Catchpole, Medical University of South Carolina

## Medical and Drug-Delivery Devices Track Sponsored by Ximedita

Kevin Ten Brink, Intuitive Surgical

Allison Strohlic, Emergo by UL

## Patient Safety Research and Initiatives Track

Laura Barg-Walkow, Children's Hospital Colorado

Kristen Webster, John Hopkins University

## “Mobile Health Applications for Consumers” Student Design Competition

Mike Rayo, Ohio State University, Chair

## Student Volunteers

Logan Gisick, Embry-Riddle Aeronautical University

Maurita Harris, University of Illinois at Urbana-Champaign

Rachel Mason, University of Illinois at Chicago

Kelli Sum, San Jose State University

## Human Factors and Ergonomics Society Officers

**President**, Kermit Davis, University of Cincinnati

**Immediate Past President**, Valerie J. Berg Rice, U.S. Army Research Laboratory

**President-Elect**, M. Susan Hallbeck, Mayo Clinic

**Secretary-Treasurer**, Christopher R. Reid, The Boeing Company

**Immediate Past Secretary Treasurer**, Carolyn M. Sommerich, Ohio State University

**Secretary-Treasurer-Elect**, Caroline G. L. Cao, Wright State University

## Executive Council At Large Members

Thomas J. Albin, High Plains Engineering Services, LLC

Ellen Bass, Drexel University

Sara Czaja, Cornell Medicine

Paul A. Green, University of Michigan

Richard J. Holden, Indiana University

Nancy L. J. Larson, Nancy LJ Larson Consulting, LLC

## Human Factors and Ergonomics Society Division Chairs

**Education**, Beth Blickensderfer, Embry-Riddle Aeronautical University

**Outreach**, Karen Jacobs, Boston University

**Technical Standards**, Bob R. Fox, General Motors Corporation

**Internal Affairs**, Rupa S. Valdez, University of Virginia

**Scientific Publications**, William J. Horrey, AAA Foundation for Traffic Safety

# General Information & Resources

## Registration Desk Location and Hours

### Sunday, March 24 – Continental Foyer

7:00 a.m. - 6:30 p.m.

### Monday, March 25 – Salon A Foyer

7:00 a.m. - 5:00 p.m.

### Tuesday, March 26 – Salon A Foyer

7:30 a.m. - 5:00 p.m.

### Wednesday, March 27 – Salon A Foyer

8:00 a.m. - 2:00 p.m.

## WiFi Access

Complimentary WiFi is provided in the meeting space for HFES attendees. To connect to the internet, please select the **Hilton Chicago Meeting** wireless network and enter **HCS2019** as the password.

## Poster Receptions

Poster receptions will be held from 4:30 p.m. – 6:00 p.m. on Monday and Tuesday in Salon C. All attendees are invited to network and view the posters.

Posters may be set up Monday and Tuesday between 1:00 p.m. – 4:00 p.m. Presenters can enter the poster area at 4:15 p.m. to staff their boards before attendees arrive.

Posters should be removed by 6:30 p.m. on their respective presentation days.

## Job Notices and Other Materials

Organizations that are offering positions may post a flyer on the corkboard adjacent to Salon Foyer A. Attendees who are seeking a job may also post a one-page notice on the board. A materials table is also provided in this area for attendees to place information about events, programs, and other activities of interest to other attendees.

## Audiotaping, Photographing, and Videotaping Policies

Attendees are not permitted to take photos or record speakers or their visual aids, or exhibitors and their displays, without prior written permission from HFES and the speakers or exhibitors. HFES reserves the right to use photographs of attendees for promotional purposes.

## Audio/Visual Preview Room

All presenters are welcome to test their presentations in the Audio/Visual Room located in the Justice Room. It will be available:

### Monday, March 25

8:00 a.m. - 5:00 p.m.

### Tuesday, March 26

7:30 a.m. - 5:00 p.m.

### Wednesday, March 27

7:30 a.m. - 1:30 p.m.

## All Gender Restroom

The Hilton Chicago has an all gender bathroom located on the 2<sup>nd</sup> floor right outside of the Grand Ballroom.

# Thank You To Our 2019 Sponsors

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Opening Plenary Keynote Session



Medical and Drug-Delivery Devices Track



Poster Reception on Tuesday, March 26th



Networking Reception on  
Monday, March 25th



Poster Reception on  
Monday, March 25th



Sustaining Sponsorship



Student mHealth App. Competition



# Exhibitors



..... TABLETOP 2



..... TABLETOP 7



DESIGN  
SCIENCE

.....BOOTH 10



EMERGO  
by UL

..... TABLETOP 4



farm  
A Flex Company

..... TABLETOP 12



fieldWORK INC.

..... TABLETOP 6



HEALTHcare  
humanFACTORS

.....BOOTH 11



INTEG*Review* TRB

..... TABLETOP 3



Ipsos

.....BOOTH 13



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..... TABLETOP 9












THAY  
MEDICAL

..... TABLETOP 5

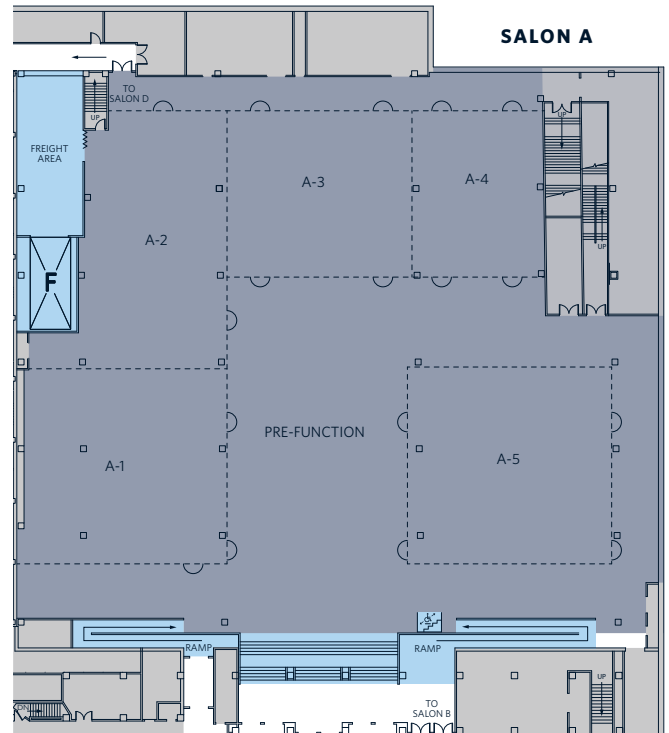
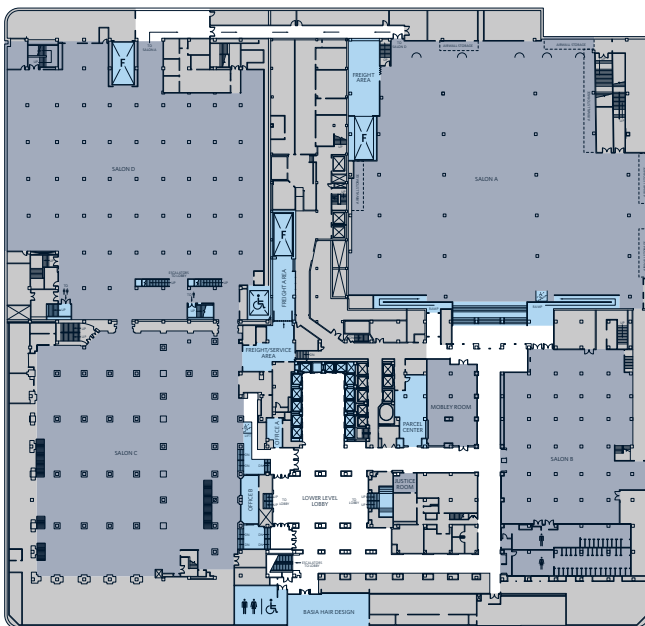
*As of March 11, 2019*

# Hotel Floorplans

## KEY

	Meeting/Conference Rooms		ADA Elevator
	Food & Beverages		ADA Lift
	Amenities		Restrooms
	Heart of House		Elevator
			Freight Elevator

## Lower Levels



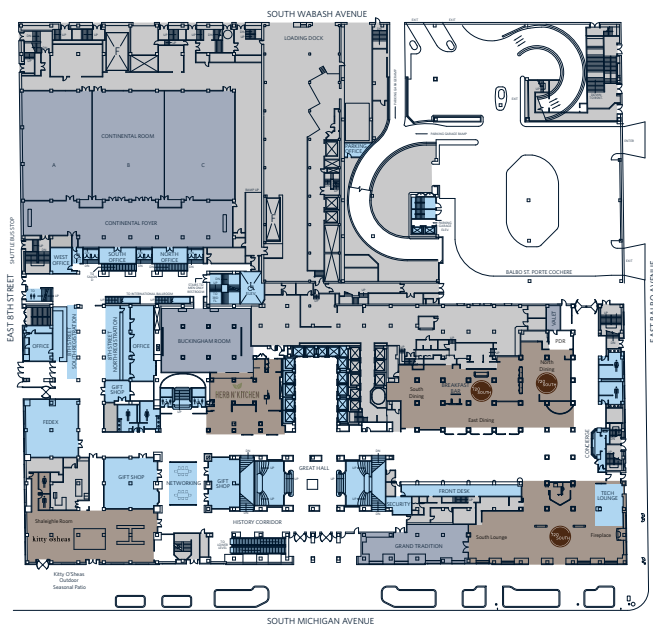


# Hotel Floorplans

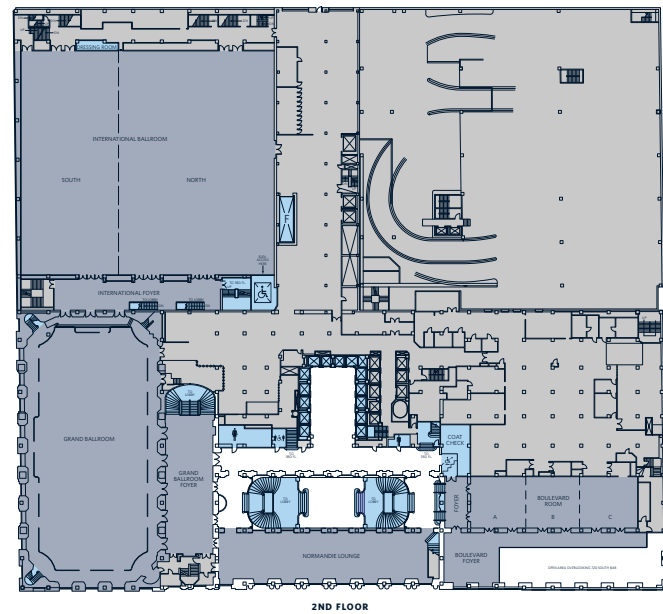
## KEY

- Meeting/Conference Rooms
- Food & Beverages
- Amenities
- Heart of House
- ADA Elevator
- ADA Lift
- Restrooms
- Elevator
- Freight Elevator

## Lobby Level



## Second Level



# Schedule-at-a-Glance

SUNDAY, MARCH 24
7:00 a.m. – 6:30 p.m. <b>Registration Open</b> <i>Continental Foyer</i>
8:00 a.m. – 12:00 p.m. <b>Pre-Symposium WK1: Improving the Safety &amp; Effectiveness of Medical Devices Through Human Factors Considerations</b> <i>Continental A</i>
10:00 a.m. – 10:30 a.m. <b>Coffee Break</b> <i>Continental A</i>
12:00 p.m. – 1:15 p.m. <b>Lunch (on own)</b>
1:30 p.m. – 5:30 p.m. <b>Pre-Symposium WK2: Human Factors Validation of Combination Drug Products</b> <i>Continental A</i> <b>Pre-Symposium WK3: Co-Designing Methods to Study &amp; Improve Patient-at-Work</b> <i>Buckingham</i>
3:00 p.m. – 3:30 p.m. <b>Coffee Break</b> <i>Continental Foyer</i>
5:30 p.m. – 6:30 p.m. <b>Opening Networking Reception</b> <i>Grand Ballroom</i>

MONDAY, MARCH 25
7:00 a.m. – 5:00 p.m. <b>Registration Open</b> <i>Salon A Foyer</i>
8:00 a.m. – 8:30 a.m. <b>Coffee Break</b> <i>Grand Ballroom Foyer</i>
8:00 a.m. - 5:00 p.m. <b>Audio Visual Preview Room</b> <i>Justice</i>
8:30 a.m. – 10:00 a.m. <b>Opening Plenary sponsored by Design Science</b> <i>Grand Ballroom</i>
10:00 a.m. – 10:30 a.m. <b>Coffee Break/Exhibits</b> <i>Salon A Foyer</i>
10:00 a.m. – 6:00 p.m. <b>Exhibits Open</b> <i>Salon A Foyer</i>
10:30 a.m. – 12:00 p.m. <b>Concurrent Sessions</b>
12:00 p.m. – 1:30 p.m. <b>Lunch</b> <i>Grand Ballroom</i>
1:00 p.m. – 4:00 p.m. <b>Poster Presenter Set-Up</b> <i>Salon C</i>
1:30 p.m. – 3:00 p.m. <b>Concurrent Sessions</b>
3:00 p.m. – 3:30 p.m. <b>Coffee Break/Exhibits</b> <i>Salon A Foyer</i>
3:30 p.m. – 4:30 p.m. <b>Concurrent Sessions</b>
4:30 p.m. – 6:00 p.m. <b>Poster Sessions/Reception sponsored by EMERGO by UL</b> <i>Salon C</i>
6:00 p.m. – 8:00 p.m. <b>Evening Reception hosted by Intuitive Surgical Inc.</b> <i>Normandie Lounge</i>

## Concurrent Session Room Locations

Medical & Drug-Delivery Devices sponsored by  
Ximedica, *Salon A-5*

Patient Safety Research & Initiatives, *Salon A-2*

Clinical & Consumer Health-Care IT, *Salon A-1*

Hospital Environments, *Salon A-3*

Diversified Breakout Session, *Salon A-4*

### TUESDAY, MARCH 26

7:30 a.m. – 5:00 p.m.

**Registration Open**

*Salon A Foyer*

7:30 a.m. – 5:00 p.m.

**Audio Visual Preview Room**

*Justice*

8:00 a.m. – 8:30 a.m.

**Coffee Break**

*Salon A Foyer*

8:00 a.m. – 6:00 p.m.

**Exhibits Open**

*Salon A Foyer*

8:30 a.m. – 10:00 a.m.

**Concurrent Sessions**

10:00 a.m. – 10:30 a.m.

**Coffee Break/Exhibits**

*Salon A Foyer*

10:30 a.m. – 12:00 p.m.

**Concurrent Sessions**

12:00 p.m. – 1:30 p.m.

**Lunch**

*Grand Ballroom*

1:00 p.m. – 4:00 p.m.

**Poster Presenter Set-up**

*Salon C*

1:30 p.m. – 3:00 p.m.

**Concurrent Sessions**

3:00 p.m. – 3:30 p.m.

**Coffee Break/Exhibits**

*Salon A Foyer*

3:30 p.m. – 4:30 p.m.

**Concurrent Sessions**

4:30 p.m. – 6:00 p.m.

**Poster Sessions/Reception sponsored by  
Phillips Medisize**

*Salon C*

### WEDNESDAY, MARCH 27

7:30 a.m. – 1:30 p.m.

**Audio Visual Preview Room**

*Justice*

8:00 a.m. – 2:00 p.m.

**Registration Open**

*Salon A Foyer*

8:00 a.m. – 8:30 a.m.

**Coffee Break**

*Salon A Foyer*

8:30 a.m. – 10:00 a.m.

**Concurrent Sessions**

10:00 a.m. – 10:30 a.m.

**Coffee Break**

*Salon A Foyer*

10:30 a.m. – 12:00 p.m.

**Concurrent Sessions**

1:30 p.m. – 5:30 p.m.

**WK4-Designing for Safe Use**

*Salon A-2*

**WK5-Mining Device Post-Market Databases for  
Usability Problems**

*Salon A-3*

**WK6-Moderating Studies**

*Salon A-1*

3:30 p.m. – 3:45 p.m.

**Coffee Break**

*Salon A Foyer*

# Program

## MONDAY, MARCH 25

8:00 a.m. - 8:30 a.m.

### COFFEE BREAK

Grand Ballroom Foyer

8:30 a.m. - 10:00 a.m.

### OPENING PLENARY SESSION: A FEW OBSERVATIONS ON THE RESILIENCE OF BONE AND RESILIENCE ENGINEERING, SPONSORED BY DESIGN SCIENCE

**Chairs:** Joseph R. Keebler, Chair, Anthony D. (Tony) Andre, Co-Chair

**Keynote Address:** Richard Cook, MD (Adaptive Capacity Labs, The Ohio State University)

Grand Ballroom

10:00 a.m. - 10:30 a.m.

### COFFEE BREAK/EXHIBITS

Salon A Foyer

10:30 a.m. - 12:00 p.m.

### CCIT1 – LOOKING TO THE FUTURE

**Clinical and Consumer Health Care IT Track**

**Chair:** Clayton Rothwell (The Ohio State University)

*Lecture and Debate, Salon A-1*

1. **Beyond Disease: Technologies for Health Promotion**, Richard Holden (Indiana University School of Medicine), Rupa Valdez (University of Virginia)
2. **Predicting Mortality With Applied Machine Learning: Can We Get There?**, Emily Patterson (The Ohio State University), Theodore Allen (The Ohio State University), Christopher Hansen (The Ohio State University)

### HE1 – BUILDING HUMAN FACTORS CAPABILITIES WITHIN A HOSPITAL SYSTEM: LESSONS LEARNED PANEL

**Hospital Environments Track**

**Chair:** Michael Rayo (The Ohio State University)

*Panel Session, Salon A-3*

1. **Building Human Factors – Capabilities Within a Hospital System: Lessons Learned**, Michael Rayo (The Ohio State University), James Won (Children's Hospital of Philadelphia), Sarah Parker (Carillion Clinic), Matthew Weinger (Vanderbilt University), Rollin "Terry" Fairbanks (Medstar Health)

### MDD1 – IFU FORMATTING: HUMAN CAPABILITIES AND LIMITATIONS

**Medical and Drug-Delivery Devices Track**

**Chairs:** Allison Strohlic (Emergo by UL), Kevin M. Ten Brink (Intuitive Surgical)

*Sponsor Presentation and Panel Session, Salon A-5*

1. **Sponsor Presentation: How Does It All Unfold? The Role of Format Layout in the User Experience of Medical Instructions**, Trevor Johnson (Ipsos Human Factors and User Experience), Rebecca Williamson (Ipsos Human Factors and User Experience)
2. **FDA Guidance vs. Available Data on Human Capabilities and Limitations**, Charles Mauro (Mauro Usability Science), Keith Karn (Human Factors in Context), Bruce Bradtmiller (Anthrotech), Megan Conrad (University of Detroit Mercy)

### PSRI1 – HEALTHCARE IMPROVEMENT PROGRAMS

**Patient Safety Research and Initiatives Track**

**Chair:** Michael Harris (Ipsos)

*Lecture Session, Salon A-2*

1. **Planning for Engagement in Health Research: How PCORI is Helping to Bridge the Divide Between Research and the Real World**, Denese Neu (Patient-Centered Outcomes Research Institute)
2. **Development of a Leadership in Healthcare Improvement Program for Residents and Fellows**, Tara Cohen (Cedars-Sinai Medical Center), Sarah Francis (Cedars-Sinai Medical Center), Elizabeth Lazzara (Embry-Riddle Aeronautical University), Barbara Chaparro (Embry-Riddle Aeronautical University), Joseph Keebler (Embry-Riddle Aeronautical University), Bruce Gewertz (Cedars-Sinai Medical Center)

### PSRI10 – INFORMATION EXCHANGE AND PATIENT CENTERED CARE

**Patient Safety Research and Initiatives Track**

**Chair:** Adjhaporn Nana Khunlertkit (Bumrungrad International Hospital)

*Lecture Session, Salon A-4*

1. **Factors Affecting Nurse Perception of Shift Handoff Quality in Critical Care**, Shirley Burton (University of Illinois at Chicago), Joanna Abraham (Washington University in St. Louis)
2. **The Upside Down Hospital-What if Patients Owned Their Medical Records? Co-Production of Safety with Patients and Families**, Chris Subbe (NHS Wales), Paul Barach (Wayne State University School of Medicine)
3. **Measuring the Amounts of Information During Mass Casualty Incidents**, Omer Perry (Ben-Gurion University of the Negev), Eli Jaffe (Magen-David-Adom), Yuval Bitan (Ben-Gurion University of the Negev)

12:00 p.m. - 1:30 p.m.

**LUNCH**

Grand Ballroom

1:30 p.m. - 3:00 p.m.

**CCIT2 – USABILITY, ADOPTION, AND WORKFLOW**

Clinical and Consumer Health-Care IT Track

**Chair:** Laura Militello (Applied Decision Science)

Lecture Session, Salon A-1

1. **Cognitive Usability Evaluation of Electronic Health Record Systems**, Mark Pfaff (MITRE Corporation), Amanda Anganes (MITRE Corporation), Ozgur Eris (MITRE Corporation), Merry Ward (Department of Veterans Affairs), Jonathan Nebeker (University of Utah)
2. **Enhancing Nursing EHR Documentation via Time-Motion Studies**, Megan Carter (Baptist Health Louisville)
3. **Three Techniques to Advance Usability Evaluation Methods for Clinical IT**, Alissa L. Russ (Purdue University)

**HE2 – DESIGNING A SAFER AND MORE ERGONOMIC OPERATING ROOM USING SIMULATION IN A PATIENT SAFETY LEARNING LAB (PSLL)**

Hospital Environments Track

**Chair:** Anjali Joseph (Clemson University)

Panel Session, Salon A-3

Anjali Joseph (Clemson University), Kevin Taaffe (Clemson University), David Neyens (Clemson University), Jeff Brady (Agency for Healthcare Research and Quality), Kerm Henriksen (Agency for Healthcare Research and Quality)

**MDD2 – USER RESEARCH ON SENSITIVE TOPICS: IDENTIFICATION OF KNOWN USE-RELATED ISSUES**

Medical and Drug-Delivery Devices Track

**Chair:** Robert North (Human Centered Strategies)

Lecture Session, Salon A-5

1. **The Difficult Arts of Awkward Research**, Jessica Willing-Pichs (Ximedica)
2. **Making Sense of Known Use Problems and Complaint Data**, Erin Davis (Emergo by UL), Alexandria Trombley (Emergo by UL)
3. **Exploring Social Media to Discover Medical Equipment Usability Issues and Error-Tolerant Design Characteristics**, Helen Fuller (Department of Veterans Affairs), Tim Arnold (Department of Veterans Affairs)

**MDD10 – USER CENTERED DESIGN APPROACHES**

Medical and Drug-Delivery Devices Track

**Chair:** Steve Wilcox (Design Science Consulting LLC)

Lecture Session, Salon A-4

1. **Mind If I Awkwardly Watch You for Four Hours? Obstacles and Challenges in Contextual Research?**, Conall Dempsey (Bresslergroup), Maddy Ross (Bresslergroup)
2. **Human Factors Guidelines for Mobile Health Applications**, Natalie Abts (National Center for Human Factors in Healthcare), Russell Branaghan (Arizona State University)
3. **How Do We Design for Distracted Users?: Inattention Errors in the PCA Model**, Kate MacNamee (Farm Design)

**PSRI2 – PATIENT- AND FAMILY-CENTERED CARE**

Patient Safety Research and Initiatives Track

**Chair:** Brittany Anderson-Montoya (Atrium Health)

Panel and Lecture, Salon A-2

1. **The Patient in Patient Safety: Clinicians' Experiences Engaging Patients as Partners in Safety**, Elizabeth Papautsky (University of Illinois at Chicago), Richard Holden (Indiana University School of Medicine), Rupa Valdez (University of Virginia), Valerie Gruss (University of Illinois at Chicago), Jeff Panzer (Alliance Chicago & Heartland Health Centers), Shawna Perry (University of Florida)
2. **A Thematic Analysis of Family Presence During Resuscitation (FPDR) in a Paediatric Population**, Amanda Deacon (University of Calgary), Elaine Gilfoyle (University of Calgary), Tom O'Neill (University of Calgary)

3:00 p.m. - 3:30 p.m.

**COFFEE BREAK/EXHIBITS**

Salon A Foyer

3:30 p.m. - 4:30 p.m.

**CCIT3 – STUDENT MHEALTH APP COMPETITION SPONSORED BY HEALTHCARE HUMAN FACTORS**

Clinical and Consumer Health-Care IT Track

Special Session, Salon A-1

Three finalists will present their work, followed by the results of the judging.

**HE3 – HUMAN FACTORS INTEGRATION INTO PRIMARY CARE CLINIC BUILD**

Hospital Environments Track

**Chair:** Amy Graske (Children's Hospital of Wisconsin)

Panel Session, Salon A-3

Amy Graske (Children's Hospital of Wisconsin), A. Joy Rivera (Children's Hospital of Wisconsin), Steve Pettit (Groth Design Group)

# Program (continued)

MONDAY, MARCH 25

## HE10 – ALARMS AND ADVERSE EVENTS

### Hospital Environments Track

**Chair:** Christian Boxley (Medstar)

*Lecture Session, Salon A-4*

1. **Rural Hospital Nursing Skill Mix and Work Environment Associated with Frequency of Adverse Events: Evidence from a Multi-State Study**, Jessica Smith (University of Texas at Arlington), Colin Plover (Thomas Jefferson University), Moira McChesney (University of Pennsylvania), Eileen Lake (University of Pennsylvania)
2. **Ergonomic Haptic Displays – Reducing Clinician Dependence on Patient Monitors and Auditory Alarms**, Parisa Alirezaee (McGill University), Joseph Schlesinger (Division of Anesthesiology Critical Care Medicine), Jeremy Cooperstock (McGill University)

## MDD3 – PRE-CERTIFYING EXCELLENCE IN DIGITAL HEALTH: HUMAN FACTORS AND USER EXPERIENCE PERSPECTIVES

### Medical and Drug-Delivery Devices Track

**Chair:** Korey Johnson (Bold Insight)

*Panel Session, Salon A-5*

Korey Johnson (Bold Insight), Bob Nesbitt (AbbVie), Mick Rakauskas (Baxter), Janet Ahn (Otsuka), Bakul Patel (FDA), Hanniebey Wiyor (FDA), Karen Kazak (Eli Lilly and Company)

## PSRI3 – ADDRESSING SEXUAL ORIENTATION AND GENDER IDENTITY IN HEALTHCARE: PAST PRESENT AND PROSPECTIVE

### Patient Safety Research and Initiatives Track

**Chair:** Sylvain Bruni (Aptima Inc.)

*Panel Session, Salon A-2*

Brandyn Lau (Johns Hopkins Hospital), Dennis Li (Northwestern University), Noah Barasch (Johns Hopkins University)

4:30 p.m. - 6:00 p.m.

## POSTERS/RECEPTION SPONSORED BY EMERGO BY UL

*Salon C*

## CCIT POS1 – POSTERS/RECEPTION

### Clinical and Consumer Health-Care IT Track

1. **Understanding Health Technology Use Challenges for Older Adults with Mobility or Visual Impairments**, Maurita Harris (University of Illinois at Urbana-Champaign), Elena Remillard (Georgia Institute of Technology), Lyndsie Koon (University of Illinois at Urbana-Champaign), Tracy Mitzner (Georgia Institute of Technology), Wendy Rogers (University of Illinois at Urbana-Champaign)
2. **Nursing Handovers in Critical Care: A Retrospective Analysis of Information Content and Function**, Emily Patterson (Ohio State University), Anne McIntire (Ohio State University), Nicholas Beecroft (Ohio State University), Mary Beth Happ (Ohio State University), Susan Moffatt-Bruce (Ohio State University)
3. **Predicting Opportunities and Challenges Prior to Transitioning to Digital Pathology: An Interview Envisioning Study with 11 Pathologists**, Emily Patterson (Ohio State University), Lauren Mansour (Ohio State University), Metin Gurcan (Medicine Wake Forest), Zaibo Li (Ohio State University), Anil Parwani (Ohio State University)
4. **Application of Fuzzy Decision Trees in Medical Decision Making Support Systems**, Paul Barach (Wayne State University School of Medicine), Vitaly Levashenko (University of Zilina, Zilina, Slovakia), Elena Zaitseva (University of Zilina, Zilina, Slovakia)
5. **Does Complexity of Surgery and Type of Surgeon Influence Patient Willingness to Undergo Surgery?**, Emily Anania (Embry-Riddle Aeronautical University), Stephen Rice (Embry-Riddle Aeronautical University), Mattie Milner (Embry-Riddle Aeronautical University)
6. **Towards the Design of a Smart Glasses Application for MICU Decision-Support: Assessing the Human Factors Impact of Data Portability and Accessibility**, Anthony Faiola (University of Illinois at Chicago), Ilyasse Belkacem (Université de Lorraine), Mary Bloodworth (University of Illinois at Chicago), Dani Bergey (University of Illinois at Chicago), Isabelle Pecci (Université de Lorraine), Benoît Martin (Université de Lorraine)
7. **Using a Human-Centered Design Approach to Create a Mobile Application to Reduce Stress in Students**, Ashley Loomis (DePaul University), Kyle Bowersock (DePaul University), Joe Vilanueva (DePaul University), Enid Montague (DePaul University)
8. **A Targeted Literature Review of Human Factors in Health Informatics Journals**, Elizabeth Papautsky (University of Illinois at Chicago), Shirley Burton (University of Illinois at Chicago)
9. **A Three-Dimension Usability Framework of Electronic Health Records (EHR) in Emergency Departments**, Mahdi Ebnali (University of Buffalo), Ann Bisantz (University at Buffalo)
10. **WITHDRAWN**
11. **The Potential of Digital Assistants to Support Health Self-Management for Older Adults**, Kenneth Blocker (University of Illinois at Urbana-Champaign), Lyndsie Koon (University of Illinois at Urbana-Champaign), Sean McGlynn (Georgia Institute of Technology), Wendy Rogers (University of Illinois at Urbana-Champaign)
12. **IT in Large-Scale Referral Prioritization: a Case Study in a Public Health Care System in Southeastern Brazil**, Rodrigo Arcuri Marques Pereira (University of Waterloo), Bárbara Bulhões Lopes de Andrade (Federal University of Rio de Janeiro),

- Catherine Burns (University of Waterloo), Mario Cesar Vidal (Federal University of Rio de Janeiro), Hugo Cesar Bellas (Oswaldo Cruz Foundation), Isabella Koster (Oswaldo Cruz Foundation), Alessandro Jatobá (Oswaldo Cruz Foundation), Paulo Victor Carvalho (Nuclear Engineering Institute)
13. **Balancing Patient-Centered Design With the Clinical Realities of Implanted Device Data and Heart Failure Self-Management: Lessons Learned From a Multidisciplinary Team**, Victor Cornet (IUPUI School of Informatics and Computing), Davide Bolchini (IUPUI School of Informatics and Computing), Carly Daley (IUPUI School of Informatics and Computing), Richard Holden (Indiana University School of Medicine)
  14. **Evaluating a Technology Support System for Social Engagement for Older Adults With and Without Cognitive Impairment**, Qiong Nie (UIUC), Lydia Nguyen (UIUC), Dillon Myers (OneClick.chat), Alan Gibson (OneClick.chat), Chantal Kerssens (eyiapp), Raksha Mudar (UIUC), Wendy Rogers (UIUC)
  15. **Telehealth and Remote Patient Monitoring: Interface Functionality and Design Considerations for Patient Support Apps and Patient Management Portals**, Tobias Langer (Bold Insight), Korey Johnson (Bold Insight)
  16. **What Triggers Health Information Search: A Systematic Analysis on the Information Needs, Situations, Technologies, and Habits in Health Information Search Across the Lifespan**, Anoosheh Ghazanfari (University of Illinois at Chicago), Jessie Chin (University of Illinois at Chicago)
  17. **Health Behavior Nudging Through Health Information Exposure and Information Search**, Jessie Chin (University of Illinois at Chicago), Ece Üreten (Hamburg University of Technology), Catherine Burns (University of Waterloo)
  18. **Uncertainty Management Among Older Adults with Heart Failure: Responses to Receiving Implanted Device Data Using a Fictitious Scenario Interview Method**, Carly Daley (IUPUI School of Informatics and Computing, Parkview Mirro Center for Research and Innovation, Parkview Health), Victor Cornet (IUPUI School of Informatics and Computing), Gauri Patekar (IUPUI School of Informatics and Computing), Swapnil Kosarabe (IUPUI School of Informatics and Computing), Davide Bolchini (IUPUI School of Informatics and Computing), Tammy Toscos (Parkview Mirro Center for Research and Innovation, Parkview Health), Michael Mirro (Parkview Mirro Center for Research and Innovation, Parkview Health, IUPUI School of Informatics and Computing, Parkview Research Center), Elizabeth Martin (Parkview Mirro Center for Research and Innovation, Parkview Health), Romisa Rohani Ghahari (Parkview Mirro Center for Research and Innovation, Parkview Health), Ryan Ahmed (Parkview Mirro Center for Research and Innovation, Parkview Health), Amy Miller (IU School of Medicine), Richard Holden (Indiana University School of Medicine, Regenstrief Institute)
  19. **WITHDRAWN**
  20. **Tracking the Human Papillomavirus (HPV)-Vaccine Risk Misinformation: An Explorative Study to Examine How the Misinformation Has Merged, Spread and Vanished in User-Generated Content**, Jessie Chin (University of Illinois at Chicago), Chieh-Li Chin (University of Illinois at Urbana Champaign), Anoosheh Ghazanfari (University of Illinois at Chicago), Ganesh Jagadeesan (University of Illinois at Chicago), Ziyi Wang (University of Illinois at Chicago), Ana Ongtengco (University of Illinois at Chicago), Amy Chang (University of Illinois at Chicago), Bing Liu (University of Illinois at Chicago), Alan Schwartz (University of Illinois at Chicago), Rachel Caskey (University of Illinois at Chicago)
  21. **Cognitive Artifacts: Reviewing the Kardex® System**, Austin Mount-Campbell (Christiana Care Health System), Emily Patterson (The Ohio State University), David Woods (The Ohio State University), Kevin Evans (The Ohio State University), Susan Moffatt-Bruce (The Ohio State University)
  22. **A Discount Approach to Multi-Institutional Workflow Analysis to Inform Clinical Decision Support for Refugee Health**, Evan Orenstein (Emory University), Katherine Yun (Children's Hospital of Philadelphia), Clara Warden (Children's Hospital of Philadelphia), Kavya Sundar (Children's Hospital of Philadelphia), Morgan Mirth (Children's Hospital of Philadelphia), Michael Westerhaus (University of Minnesota School of Medicine), Blain Mamo (Minnesota Department of Health), Jeremy Michel (Children's Hospital of Philadelphia)
  23. **A Qualitative Content Analysis to Understanding Patient Hygiene-Related Information Shared by Caregivers of Alzheimer's Patients on Online Peer Support Groups**, Manav Jain (Georgia Institute of Technology), Anvita Pudipeddi (Riverside High School), Shradhaa Narasimha (Clemson University), Kapil Chalil Madathil (Clemson University)
  24. **Applying UCD and ZET to Develop a Cloud-Based Real Time Solution for Air Quality Monitoring and Its Effects on Child and Maternal Health in Mongolia**, Raphael Nobrega (University of Waterloo), Kristina De Vera (University of Waterloo), Ulziisaikhan Sereeter (IRIM Mongolia), Bataa Chuluunbaatar (UNICEF Mongolia), William Abi Abdallah (UNICEF Mongolia), Alex Heikens (UNICEF Mongolia), Plinio Morita (University of Waterloo)
  25. **Improving Clinical Experiences in Health Care with**

# Program (continued)

MONDAY, MARCH 25

**Journey Maps**, Kyle Maddox (Department of Veterans Affairs), Donna Baggetta (Department of Veterans Affairs), Kurt Ruark (Department of Veterans Affairs), Alice Mitchell (Department of Veterans Affairs)

26. **Interprofessional Collaborative Practice: The Ultimate Distributed Cognition - It's Time to Integrate!**, Elizabeth Papautsky (University of Illinois at Chicago), Annette Valenta (University of Illinois at Chicago)
27. **Can Eye Tracking be Used to Predict Performance Improvements in Simulated Medical Training? A Case Study in Central Venous Catheterization**, Scarlett Miller (The Pennsylvania State University), Hong-En Chen (The Pennsylvania State University), Rucha Bihde (The Pennsylvania State University), Cassandra Sonntag (Penn State Hershey Medical Center), Jason Moore (The Pennsylvania State University), David Han (Penn State Hershey Medical Center)
28. **The Importance of Testing Sets of Clinical Alarm Sounds to Provide Real-World HFE Impact**, Morgan Fitzgerald (The Ohio State University), Michael Rayo (The Ohio State University), Mahmoud Abdel-Rasoul (The Ohio State University), Susan Moffat-Bruce (Ohio State Wexner Medical Center)

## HE-POS1 – POSTERS/RECEPTION

### Hospital Environments Track

1. **A Macroergonomic Framework to Understand Team Cognition in Care Transitions**, Abigail R. Wooldridge (University of Illinois at Urbana Champaign), Pascale Carayon (University of Wisconsin-Madison), Peter Hoonakker (University of Wisconsin-Madison), Bat-Zion Hose (University of Wisconsin-Madison), Tom Brazelton (University of Wisconsin-Madison School of Medicine and Public Health), Benjamin Eithun (University of Wisconsin-Madison School of Medicine and Public Health), Joshua Ross (University of Wisconsin-Madison School of Medicine and Public Health), Jonathan Kohler (University of Wisconsin-Madison School of Medicine and Public Health), Michelle M. Kelly (University of Wisconsin-Madison School of Medicine and Public Health), Shannon Dean (University of Wisconsin-Madison School of Medicine and Public Health), Deborah Rusy (University of Wisconsin-Madison School of Medicine and Public Health), Ayse P. Gurses (Johns Hopkins University School of Medicine)
2. **Impact of Flow Disruptions in the Delivery Room**, Heidi Herrick (Children's Hospital of Philadelphia), Scott Lorch (Children's Hospital of Philadelphia), Ken Catchpole (Medical University of South Carolina), Elizabeth Foglia (Children's Hospital of Philadelphia)
3. **Validity Assessment of a Real-Time Indicator of Task-Induced Fatigue Among Novices in the Minimally-Invasive Surgery Environment**, Theresa Nguyen (Texas Tech University), Martina Klein (Texas Tech University), Eric Greenlee (Texas Tech University), Dixon Santana (Texas Tech University Health Sciences Center), John Griswold (Texas Tech University Health Sciences Center), Krishnanath Gaitonde (University of Cincinnati College of Medicine), Neal Ellis (Texas Tech University Health Sciences Center)
4. **Creating Meaningful Impact on Clinical Outcomes and Electronic Documents using Low-Cost Low-Tech Human Factors Solutions**, Johnathan Siew (Changi General Hospital)
5. **Identifying Environmental Challenges and Stressors for Emergency Physicians Using a Semi-Structured Survey Instrument**, Tracy Kim (National Center for Human Factors in Healthcare, MedStar Health), Raj Ratwani (National Center for Human Factors in Healthcare, MedStar Health), Rollin Fairbanks (Telehealth Innovation Center, MedStar Health), Kathryn Kellogg (National Center for Human Factors in Healthcare, MedStar Health)
6. **The Influence of Stress Responses on Surgical Performance and Outcomes: The Development of the Surgical Stress Effects (SSE) Conceptual Framework**, Kristin Chrouser (University of Michigan/Ann Arbor VA), Susan Hallbeck (Mayo Clinic College of Medicine), Melissa Partin (Minneapolis VA Health Care Center)
7. **Assessing User Needs in the Acute Rehabilitation Environment: A Methods Report on the Development of the Acute Rehabilitation Environmental Assessment (AREA) Tool**, Lucy Stein (MedStar Health), Ella Franklin (Medstar National Rehabilitation Hospital), Sung-tsan Yeh (Medstar National Rehabilitation Hospital), Olivia Orenca (Medstar National Rehabilitation Hospital), Matthew Kelly (Medstar National Rehabilitation Hospital), Yue-shan Yang (Medstar National Rehabilitation Hospital)
8. **Psychosocial Aspects of Workload in Nursing**, Esa Rantanen (Rochester Institute of Technology), Juanita Montoya (Rochester Institute of Technology)
9. **Association Between Perceived Workload and Adverse Body Postures**, Luisa Nino (Montana State University), Frank Marchak (Montana State University), David Claudio (Montana State University)
10. **Patient Load in Cardiac Telemetry Monitoring: Pilot Study of Nurses' Vigilance Performance and Perceived Stress and Workload**, Matthew Nare (California State University, Long Beach), Gabriella Hancock (California State University, Long Beach)
11. **FUTURES: Forecasting the Unexpected Transfer to Upgraded Resources in Sepsis**, Alexa Profozich (Drexel University), Trevor Sytsma (Pepperdine University), Kristen Miller (MedStar Health), Laura



- Schubel (MedStar Health, National Center for Human Factors in Healthcare), Ryan Arnold (Drexel University College of Medicine), Muge Capan (Drexel University LeBow College of Business)
12. **The Burden of Emergency Medicine: Understanding the Perception of Workload in the Emergency Department and Its Impact on Medical Decision Making**, Miranda Prints (Pepperdine University), Alexa Profozich, Muge Capan (Drexel University LeBow College of Business), Daniela Fishbein (Sidney Kimmel Medical College at Thomas Jefferson University), Eric Stander (Drexel University College of Medicine), Ryan Arnold (Drexel University College of Medicine)
  13. **Who is Responsible? Family and Clinician Perspectives on Rles and Responsibilities in Critical Care**, Ummesalmah Abdulbaseer (University of Illinois at Chicago), Elizabeth Papautsky (University of Illinois at Chicago)
  14. **Considering the Patient Context in Breastfeeding Education From a Human Factors Perspective**, Elizabeth Papautsky (University of Illinois at Chicago), Mary Sawn Koenig (University of Illinois at Chicago)
  15. **The Impact of Noise and Message Content on Message Elaboration of Psychiatric Help-Seeking Information – A Pilot Study**, Jun Rong Jeffrey Neo (Cornell University), Mardelle Shepley (Cornell University), Jeff Niederdeppe (Cornell University), Andrea Stevenson Won (Cornell University)
  16. **NASA-TLX Assessment of Surgeon Workload Variation Across Specialties**, Renaldo C. Blocker (Mayo Clinic), Katherine E. Law (Mayo Clinic), Bethany R. Lowndes (University of Nebraska Medical Center), Heidi Nelson (Mayo Clinic), M. Susan Hallbeck (Mayo Clinic)
  17. **Surgeon Workload Prediction: Comparing the NASA and SURG TLX Instruments**, Bernadette McCrory (Montana State University), Bethany Lowndes (University of Nebraska Medical Center), Kristin Chrouser (Minneapolis Veterans Affairs Health Care System), M. Susan Hallbeck (Mayo Clinic)
  18. **Patient Care Rounds as a Conduit for Interpersonal Communication**, Milisa Manojlovich (University of Michigan), Molly Harrod (Department of Veterans Affairs), Timothy Hofer (Department of Veterans Affairs), Megan Lafferty (University of Michigan), Sarah Krein (Department of Veterans Affairs)
  19. **NASA-Task Load Index Differentiates Surgical Approach: Opportunities for Improvement in Colon and Rectal Surgery**, Katherine Law (Mayo Clinic), Bethany Lowndes (University of Nebraska Medical Center), Renaldo Blocker (Mayo Clinic), Heidi Nelson (Mayo Clinic), Susan Hallbeck (Mayo Clinic)
  20. **Biomechanical Analysis of Healthcare Professionals During Two Common Procedures for Neonatal Resuscitation**, Nicole Yamada (Stanford University), Anil Kumar (San Jose State University)
  21. **Functional Analysis of Written Communication Needs for Inpatient Providers**, Evan Orenstein (Emory University School of Medicine), Naveen Muthu (Children's Hospital of Philadelphia), Subha Airan-Javia (University of Pennsylvania School of Medicine)
  22. **Moving to Electronic Documentation in the PACU: A Work Domain Analysis Approach and Effective Results Communication**, Mario Iannuzzi (Sinai Health System), Jennifer Jeon (Sinai Health System)
  23. **Developing Crisis Checklists in Hospital – Translating from Complicated to Complex Environments**, Chris Subbe (Bangor University, UK), Paul Barach (Wayne State University School of Medicine)
  24. **Use of Electroencephalography to Monitor Physician Workload and Burnout in the Operating Room: A Literature Review**, Boraan Abdulkarim (St. Olaf College), Hunter Hawthorne (Mayo Clinic), Katherine Law (Mayo Clinic), Renaldo Blocker (Mayo Clinic)
- MDD-POS1 – POSTERS/RECEPTION**  
**Medical and Drug-Delivery Devices Track**
1. **Experience a Live Design Review in AR/VR**, Larry Miller (219 Design), Dave Bim-Merle (219 Design)
  2. **Improving Cost Effectiveness of Robotic Assisted Laparoscopic Prostatectomy (RALP)**, Federica Violi (University of Illinois at Chicago), Ashley Hughes (University of Illinois at Chicago)
  3. **Development of Guidelines to Increase the Usability and Effectiveness of Medical Device Instructions**, Elizabeth Smyth (GfK), Kerrie Owens (Ipsos)
  4. **Human Trust Factors in Robot-Assisted Surgery**, Svyatoslav Guznov (AFRL), AaSHA Eberle (AFRL), Anna Van Abel (AFRL), Marc Pfahler (GDIT)
  5. **A Pilot Study of the Shape of a Mask Sheet for Adult Women with their Mouths Open**, Mika Morishima (Kanazawa University), Tamaki Mitsuno (Shinshu University)
  6. **Training Decay in Simulated-Use Studies: Research-Based Time Rationales**, Ryan Hilgers (BlackHagen Design), Nicholas Unger (BlackHagen Design)
  7. **Contextual Inquiry: Experienced Based Best Practices**, Nicholas Unger (BlackHagen Design), Thomas Hilgers (BlackHagen Design)
  8. **The Effectiveness of a Wearable Cardioverter Defibrillator to Alert Patients Using Tactile, Auditory, and Visual Cues During Sleep**, Amanda Hall (Microsoft Research), Amanda Fonville (Kestra Medical Technologies, Inc.), Judy Edworthy (Plymouth University Cognition Institute), Nigel Ball (Swedish Hospital), Pam Breske (Kestra Medical Technologies, Inc.), Laura Gustavson (Kestra Medical Technologies, Inc.)

# Program (continued)

MONDAY, MARCH 25

9. **Case Studies and Considerations for Representing Training and Memory Decay in Simulated-Use Human Factors Validation Testing**, Patricia Anderson (Core Human Factors, Inc.), Naomi Cherne (Core Human Factors, Inc)
  10. **Dynamic Instructional Materials: How to Leverage Multimedia to Engage Your Users**, Lindsay Carrabine (Design Science), Carmella Lee (Design Science), Christina Stefan (Design Science)
  11. **Human Factors for Dx: Getting Started**, David Powers (Ximedica)
  12. **Speech as an Indicator of Cognitive Workload During an Upper Limb Task**, Christopher Gaskins (Food & Drug Administration), Rodolphe Gentili (University of Maryland), Kimberly Kontson (Food & Drug Administration)
  13. **Unstuck! Addressing Wicked Problems in Large Healthcare Systems through Embedded Design and Development Teams**, Robert Strouse (Nationalwide Children's Hospital), Kasandra Chambers (University of Michigan), Matthew Sapko (Nationwide Children's Hospital)
  14. **Towards Intelligent and Accessible Assistive Hearing Devices**, Qi Yang (GN Hearing A/S), Bill Chang (GN Hearing A/S), Greg Olsen (GN Hearing A/S)
  15. **Can Human Factors Be Agile? Harmonizing Human Factors, Agile, and Design Controls**, James Parker, Ambika Chou, Emergo by UL)
  16. **A Pilot Study to Assess Ventilators Terminology as Proposed in ISO19223**, Reicelis Casares Li (University of Waterloo), Ece Üreten (Hamburg University of Technology), Steven Dain (University of Waterloo), Karl Weiss (Conestoga College ITAL), Catherine Burns (University of Waterloo)
  17. **Participant Diversity in Human Factors Evaluations: Benefits, Barriers, and Identities**, Matthew Marber (Emergo by UL), Augustina Ativie (Medtronic)
  18. **Defining End Users for Medical Device Testing - Why is it so Difficult?**, Emily Hildebrand (Research Collective), Bryant Foster (Research Collective), Angela Muriset (Design Science), Edmond Israelski (Consultant), Shannon Hoste (Illumina)
  19. **Human Factors Guidelines for Mobile Health Applications**, Natalie Abts (National Center for Human Factors in Healthcare), Russell Branaghan (Arizona State University)
  20. **Considering the Dynamics of FDA Human Factors Validation Requirement: Implications of Failure and Need to Ensure Project Success - A Conceptual Framework**, Katia M. Rojas (Binghamton University), Leon Cosler (Binghamton University), Nasser Sharareh (University of Utah), Daryl Santos (Binghamton University)
  21. **Drawing the "Line" Between Human Factors and Adjacent Disciplines**, Huiyang Li (Insight Product Development), Michael Lau (Insight Product Development), Wayne Ho (Healthcare Human Factors), Gerard Torenvliet (Medtronic)
  22. **Study Design and Documentation in Light of New European Data Privacy Regulations**, Martin Rausch (Sanofi-Aventis Deutschland GmbH), Carolin A. Ruf (Sanofi-Aventis Deutschland GmbH), Molly Follette Story (Sanofi)
  23. **Case Study: Improving Device Usability Through Understanding User Needs and Intuitiveness of Device Packaging**, Ronald Pollack (Janssen R&D)
  24. **When Answering the Usability Mail Isn't Enough**, Susan McDonald (Ximedica)
  25. **Best Practices for Reprocessing Usability Testing & User Manual Development**, Shannon Clark (UserWise, Inc.)
  26. **Maintaining Flexibility and Prioritizing Compliance with Quality Management**, Elizabeth Volk (Phillips-Medsize), Kelle Jardine (Phillips-Medsize)
- PSRI-POS1 – POSTERS/RECEPTION**  
*Patient Safety Research and Initiatives Track*
1. **Checklist to Ensure Safe Opioid Prescribing in Primary Care - A Cognitive Aid for Clinicians**, Arthur Riba (VA NCPS)
  2. **"But I Didn't Know!" How to Get Patients to Read Drug Pamphlets**, Mattie Milner (Embry-Riddle Aeronautical University), Stephen Rice (Embry-Riddle Aeronautical University), John Capps (Embry Riddle Aeronautical University), Scott Winter (Embry-Riddle Aeronautical University), Victoria Lew (Embry Riddle Aeronautical University)
  3. **What Type of Person is Willing to Undergo a Teeth Cleaning with a Dental Robot?**, Stephen Rice (Embry-Riddle Aeronautical University), Rian Mehta (Florida Institute of Technology), Scott Winter (Embry-Riddle Aeronautical University), Emily Anania (Embry Riddle Aeronautical University), Mattie Milner (Embry-Riddle Aeronautical University), Nadine Ragbir (Embry Riddle Aeronautical University)
  4. **Towards Intelligent and Accessible Assistive Hearing Devices**, Qi Yang (GN Hearing A/S), Bill Chang (GN Hearing A/S), Greg Olsen (GN Hearing A/S)
  5. **Leading Change in Healthcare: Identifying Change Leader Task Demands and Capabilities**, Amanda Woods (Rice University), Margaret Luciano (Arizona State University), Thomas Aloia (University of Texas – MD Anderson Cancer Center), Eduardo Salas (Rice University)

6. **Testing an Occupational Fatigue Survey for Pharmacists**, Taylor Watterson (University of Wisconsin-Madison), Michelle Chui (University of Wisconsin-Madison)
7. **Trauma, Teams and Telemedicine: Evaluating Telemedicine and Teamwork in a Mass Casualty Simulation**, Rachel Mason (University of Illinois at Chicago), Ashley Hughes (University of Illinois at Chicago), Shirley Sonesh (Sonnschein Consulting, LLC), Megan Gregory (The Ohio State University), Eduardo Salas (Rice University), Antonio Martos (University of Miami), Carl Schulman (University of Miami)
8. **Risky Business: Predicting Patient Mortality at a Glance – Insights from Nurses and Doctors**, Laura Schubel (MedStar Health), Muge Capan (Drexel University), Ryan Arnold (Drexel University), Kristen Miller (MedStar Health)
9. **Mental Models and Clinical Decisions**, Yui-Yee Raymond (Children's Mercy - Kansas City), Edward Stuppel (University of Derby), Russell Branaghan (Arizona State University)
10. **Measuring Mobility Recovery Following Right-Sided TKA: The First Step in a Neuroergonomic Approach**, Emily Frankel (University of Nebraska Medical Center), Haley Kampschnieder (University of Nebraska Medical Center), Jennifer Merickel (University of Nebraska Medical Center), Matthew Rizzo (University of Nebraska Medical Center), Kevin Garvin (University of Nebraska Medical Center), Bethany Lowndes (University of Nebraska Medical Center)
11. **An application of Task Analysis to Compare Task Performance and Mobility of Participants with Parkinson's Disease to Healthy Controls**, Haley Kampschnieder (University of Nebraska Medical Center), Emily Frankel (University of Nebraska Medical Center), Jennifer Merickel (University of Nebraska Medical Center), Matthew Rizzo, Danish Bhatti (University of Nebraska Medical Center), Bethany Lowndes (University of Nebraska Medical Center)
12. **Understanding and Mitigating Operating Room (OR) Interruptions**, Suzan Ayas (University of Toronto), Birsan Donmez (University of Toronto), Teodor Grantcharov (St. Michael's Hospital), Catherine Hogan (St. Michael's Hospital)
13. **Project Fal Ward: A Human Factors Ergonomics (HFE) Project**, Jeanne Louise Schonborn (Plymouth University Hospitals NHS Trust), Catherine Ward (Plymouth), Laura Pickup (Lp Human Factors Consultancy)
14. **Transitional Care Planning: A Pilot Study to Explore Patient, Care Manager and Care Coordinator Perspectives**, Kara Hall (University of Buffalo), Huei-Yen Chen (University at Buffalo), Sharon Hewner (University at Buffalo)
15. **Designing for Veterans: A User-Centered Approach to Designing Continuous Monitoring Tools for Post-Traumatic Stress Disorder (PTSD)**, Arjun Rao (Texas A&M University), Ethan Larsen (Houston Methodist Hospital), Carolina Rodriguez-Paras (Texas A&M University), Farzan Sasangohar (Texas A&M University)
16. **An Accident Waiting to Happen: Vendor Contribution to Disarray in Orthopedics Surgery**, Timothy Disher (Embry-Riddle Aeronautical University), Jordan Hilgers (Embry-Riddle Aeronautical University), Albert Boquet (Embry-Riddle Aeronautical University)
17. **Psychosocial Health Risk Factors and Perceived Work Ability Among Home Care Workers**, Liyun Yang (KTH), Ingela Målqvist (Center for Occupational and Environmental Medicine, Stockholm County Council), Magnus Alderling (Center for Occupational and Environmental Medicine, Stockholm County Council), Carl Lind (KTH Royal Institute of Technology), Annika Bergman Rentzhog (Center for Occupational and Environmental Medicine, Stockholm County Council), Mikael Forsman (KTH Royal Institute of Technology)
18. **EvalTec – Developing a Strategy to Implement Healthcare Technology Based on Human Factors Principles and Findings: The Case of the Infusion Pumps**, Laura Herrero (IDIVAL), Elena Rojo Santos (Hospital Virtual Valdecilla), Marina Cano Iglesias (IDIVAL), Juan Pedraja Vidal (Hospital virtual Valdecilla), Ignasi Maspons Molins (IDIVAL), Natalie Abts (MedStar Institute for Innovation, MedStar Health), Lucy Stein (MedStar Institute for Innovation, MedStar Health), Natalie Benda (MedStar Institute for Innovation, MedStar Health)
19. **A Journey to Improve Patients Experience in the Fine Needle Aspiration Clinic FNAC**, Jailan Gabr (Kuwait Cancer Control Center, Ministry Of Health), Abdullah Akbar (Kuwait Cancer Control Center, Ministry Of Health)
20. **An Ergonomic Framework for Researching and Designing Speech Recognition Technologies in Health Care with an Emphasis on Safety**, Tim Arnold (Veteran Affairs), Helen Fuller (Veterans Affairs)
21. **Same Disaster, Different Response: A Comparison Between Government and Hospital Incident Management Teams Ruring Hurricane Harvey**, Changwon Son (Texas A&M University), Farzan Sasangohar (Texas A&M University), S. Camille Peres (Texas A&M University), Timothy Neville (Texas A&M University), Jukrin Moon (Texas A&M University), Ethan Larsen (Houston Methodist Hospital)
22. **Establishing a Health IT Safety Program at an Academic Pediatric Tertiary Care Hospital**, Naveen Muthu (Children's Hospital of Philadelphia), Amina Khan (Children's Hospital of Philadelphia), Dean Karavite (Children's Hospital of Philadelphia), Eric Shelov (Children's Hospital of Philadelphia)

# Program (continued)

23. **Extended Inpatient Length of Stay: Contributing Factors & Mitigating Strategies**, Logan Gisick (Embry-Riddle Aeronautical University), Joseph Keebler (Embry-Riddle Aeronautical University), Elizabeth Lazzara (Embry-Riddle Aeronautical University)

6:00 p.m. - 8:00 p.m.

## EVENING RECEPTION HOSTED BY INTUITIVE SURGICAL INC.

Normandie Lounge

## TUESDAY, MARCH 26

8:00 a.m. - 8:30 a.m.

### COFFEE BREAK

Salon A Foyer

8:30 a.m. - 10:00 a.m.

### CCIT4 – GOVERNMENT APPLICATIONS

Clinical and Consumer Health-Care IT Track

**Chair:** Kurt Ruark (Veteran's Health Administration)

Lecture Session, Salon A-1

1. **Evaluation of Mobile Tablet Computers for Use in the Veterans Health Administration**, Jennifer Herout (Department of Veterans Affairs), Kathleen Frisbee (Department of Veterans Affairs), Nancy Wilck (Department of Veterans Affairs), Margo Kabel (Department of Veterans Affairs), Deyne Bentt (Department of Veterans Affairs), Neil Evans (Department of Veterans Affairs), Gerald Markowitz (Booz Allen Hamilton), Jason Saleem (University of Louisville)
2. **Evaluation of the Veterans Crisis Line System Support**, Shilo Anders (Vanderbilt University Medical Center), Kyle Maddox (Veteran Health Administration), Jason Saleem (University of Louisville), Kurt Ruark (Veteran Health Administration), Jennifer Herout (Veteran Health Administration)
3. **Lessons Learned from Journey Mapping in Health Care**, Kyle Maddox (Department of Veterans Affairs), Donna Baggetta, (Department of Veterans Affairs), Kurt Ruark (Department of Veterans Affairs), Jennifer Herout (Veteran Health Administration)
4. **Enhanced Operational Requirements Gathering Using a UX Design Studio Workshop**, Blake Lesselroth (University of Oklahoma School of Community Medicine), Kathleen Adams (VA Human Factors Engineering)

### CCIT10 – DATA, CYBERSECURITY, AND SMART MONITORING

Clinical and Consumer Health-Care IT Track

**Chair:** Farzan Sasangohar (Texas A&M University)

Lecture Session, Salon A-4

1. **Patient-Related Workload Prediction in the Emergency Department: A Big Data Approach**, Xiaomei Wang (University at Buffalo), H. Joseph Blumenthal (MedStar Health), Daniel Hoffman (MedStar Health), Natalie Benda (MedStar Health), Tracy Kim (MedStar Health), Shawna Perry (University of Florida College of Medicine-Jacksonville), Ella S. Franklin (MedStar Health), Emilie Roth (Roth Cognitive Engineering), A. Zachary Hettinger (MedStar Health), Ann M. Bisantz (University at Buffalo)
2. **Electronic Health Records (EHR) Downtime and the Growing Cyber-attack Threat**, Ethan Larsen (Houston Methodist Hospital), Farzan Sasangohar (Texas A&M University)
3. **Smart Monitoring of Population Health Risk Behavior**, Kirti S Sahu (University of Waterloo), Arlene Oetomo (University of Waterloo), Plinio P. Morita (University of Waterloo)

### HE4 – INTEGRATING HUMAN FACTORS RESEARCH AND CLINICAL PRACTICE: CLINICIAN PERSPECTIVES

Hospital Environments Track

**Chair:** James Abernathy (Johns Hopkins University)

Lecture and Panel, Salon A-3

1. **Integrating Human Factors Research and Surgery**, Bruce Gewertz (Cedars-Sinai Health System)
2. **Integrating Human Factors Research and Practice: Clinician Perspectives**, Bruce Gewertz (Cedars-Sinai Health System), Joyce Wahr (University of Minnesota), James Abernathy (Johns Hopkins University), Russell McCulloh (University of Nebraska Medical Center), Shawna Perry (University of Florida)

### MDD4 – DESIGN REQUIREMENTS; SIMULATED USE ENVIRONMENTS

Medical and Drug-Delivery Devices Track

**Chair:** Sami Durrani (Fresenius Medical Care North America)

Lecture Session, Salon A-5

1. **A Framework for Conducting Integrated HF Validation and UI Design Validation Tests**, Rachel Aronchick (UL), Erin Davis (UL)
2. **Bridging the Gap from Research to Requirements**, Elizabeth Roche (Ximedica)
3. **Simulating Stressful Emergency Use Scenarios During Usability Tests**, Allison Strohlic (Emergo by UL), Andrea Dwyer (Emergo by UL)

**PSRI4 – EVENT INVESTIGATIONS****Patient Safety Research and Initiatives Track**

**Chair:** SQ Yin (KK Women's & Children's Hospital, Singapore)

*Lecture Session, Salon A-2*

1. **Methods to Improve Voluntary Event Reporting Rates**, Isaac Lynch (UT Southwestern)
2. **Using Perioperative Adverse Event Investigations to move towards High Reliability: Outcomes and Systems Changes**, Joseph Keebler (Embry-Riddle Aeronautical University), Elizabeth Lazzara (Embry-Riddle Aeronautical University), Elizabeth Blickensderfer (Embry-Riddle Aeronautical University), Thomas Looke (United States Anesthesia Partners), Frank Rosemeier (United States Anesthesia Partners), Louis Barr (Florida Hospital Orlando), Brittany Almon (Florida Hospital Orlando), Jeffrey Kuhlman (Florida Hospital Orlando)
3. **Application of Engineering Controls and Safety Management Practices in Healthcare**, Andia Toomari (University of Toronto, Healthcare Human Factors), Joseph A. Cafazzo (University of Toronto, Healthcare Human Factors)
4. **Improving the Event Investigation Process: Going Beyond the Basics**, Amy Poppy (Children's Hospital Colorado), Laura Barg-Walkow (Children's Hospital Colorado)

**10:00 a.m. - 10:30 a.m.**

**COFFEE BREAK/EXHIBITS**

*Salon A Foyer*

**10:30 a.m. - 12:00 p.m.**

**CCIT5 – MIXED REALITY****Clinical and Consumer Health-Care IT Track**

**Chair:** Elizabeth Papautsky (University of Illinois Chicago)

*Lecture Session, Salon A-1*

1. **Assessing Augmented Reality Training for Combat Medics and Medical Students**, Laura Militello (Applied Decision Science, LLC), Christen Sushereba (Unveil LLC), Emily Patterson (The Ohio State University)
2. **Virtual Reality Applications in Healthcare: Understanding the Role of Spatial Presence Formation and Maintenance**, Sean McGlynn (Georgia Institute of Technology), Danniell Rhee (University of Illinois: Urbana-Champaign), Wendy Rogers (University of Illinois: Urbana-Champaign)
3. **UX Design of a Multi-User Mixed Smartphone and Virtual Reality Medical Diagnostic Application**, Caroline Kingsley (Charles River Analytics), Arthur Wollocko (Charles River Analytics), Calvin Leather (Charles River Analytics), David Young (Charles River Analytics), Michael Jenkins (Charles River Analytics)

4. **Virtual Reality in Medical Education**, Michael Barrie (The Ohio State University College of Medicine)

**HE5 – ON THE FRONTLINES: TALES FROM CLINICIAN-PATIENTS****Hospital Environments Track**

**Chair:** Ashley Hughes (University of Illinois Chicago)

*Panel Session, Salon A-3*

Ashley Hughes (University of Illinois at Chicago), Paul Barrach (Western State University), Katie Suda (University of Illinois at Chicago), Rami Ahmed (University of Indiana at Indianapolis), Shawn O'Connell (B. Braun Medical), Paul Barach (Wayne State University)

**MDD5 – DEVICE TRAINING PROGRAMS****Medical and Drug-Delivery Devices Track**

**Chair:** Beth Loring (Loring Human Factors LLC)

*Lecture Session, Salon A-5*

1. **How to Gather Training-Related User Needs During Human Factors Research and Customize Training Programs for Medical Device Usage**, Kristyn Berry (Farm Design, Inc.)
2. **The Impact of Training Devices on Perception and Performance by Novice Users of an Autoinjector**, Jenna Garafalo (Insight Product Development), Huiyang Li (Insight Product Development), Michael Lau (Insight Product Development)
3. **Challenges of Simulating Training Decay in Usability Studies**, Richard Newman (BlackHagen Design)

**MDD11 – NOVEL METHODS FOR MEDICAL DEVICE DESIGN****Medical and Drug-Delivery Devices Track**

**Chair:** Susan McDonald (Ximedica)

*Lecture Session, Salon A-4*

1. **A Case Study in Conducting a Human Factors Summative Test of a New, Complex Medical System**, Ashleigh Shier (Healthcare Human Factors), David Gilmore (Elekta), Wayne Ho (Healthcare Human Factors)
2. **Emergency Ethnography: Using Observational Research to Promote Efficient Drug Delivery in Hospitals**, Larry McGrath (Design Science), Nicholas Zampa (Biogen), Carmella Lee (Design Science)
3. **Introducing a Methods Toolbox to Quantitatively Assess Patient Capabilities During Autoinjector Use: Insights from a Formative Human Factors Study**, Peter Sneeringer (Design Science), Christoph Jordi (Ypsomed)

# Program (continued)

## PSRI5 – PUBLIC HEALTH INFECTION PREVENTION

### Patient Safety Research and Initiatives Track

**Chair:** Joseph R Keebler (Embry-Riddle Aeronautical University)

*Lecture Session, Salon A-2*

1. **The Intersection Between Public Health and Human Factors: Finding Solutions to Infection Prevention Challenges in Outpatient Dialysis**, Priti Patel (Centers for Disease Control and Prevention), Sara Parker (Centers for Disease Control and Prevention)
2. **Operationalizing Human Factors to Support CLABSI Standardization and Improvement**, Andrea L. Cooks (Cincinnati Children's), Erika L. Stalets (Cincinnati Children's), Jackie Hausfeld (Cincinnati Children's), Jeffrey Simmons (Cincinnati Children's), Mary C. Sitterding (Cincinnati Children's), Maria Geiser (Cincinnati Children's)
2. **A Multi-Method Approach for Facilitating Joint End-user, Vendor, and Multi-Disciplinary Subject Matter Expert Input to Health Information Technology Recommendations**, Ellen Bass (Drexel University), Carl Pankok (Drexel University), Paulina Sockolow (Drexel University)
3. **Who Is On My Team?: Insiders' Perspectives from Primary Healthcare**, Shimeng Du (University of Wisconsin-Madison), Douglas Wiegmann (University of Wisconsin-Madison), John Beasley (University of Wisconsin-Madison), Laura Farrell (University of Wisconsin-Madison), Amanda Hoffmann (University of Wisconsin-Madison), Linsey Steege (University of Wisconsin-Madison), Yudi Wang (University of Wisconsin-Madison), Tosha Wetterneck (University of Wisconsin-Madison)

12:00 p.m. - 1:30 p.m.

## LUNCH

*Grand Ballroom*

1:30 p.m. - 3:00 p.m.

## CCIT6 – OLDER ADULTS

### Clinical and Consumer Health-Care IT Track

**Chair:** Wendy Rogers (University of Illinois Urbana-Champaign)

*Panel Session, Salon A-1*

1. **Challenges Confronting Older Adults in Today's Healthcare Landscape: Design Guidance from CREATE**, Wendy Rogers (University of Illinois Urbana-Champaign), Sara Czaja (Weill Cornell Medicine), Neil Charness (Florida State University), Walter Boot (Florida State University)

## CCIT11 – KNOWLEDGE ELICITATION, END USERS, AND TEAMS

### Clinical and Consumer Health-Care IT Track

**Chair:** Austin Mount-Campbell (Christiana Care Health System)

*Lecture Session, Salon A-4*

1. **Lessons Learned from Knowledge Elicitation in Complex Clinical Environments: Iteration is Not Just for Design**, Dean Karavite (Children's Hospital of Philadelphia), Naveen Muthu (Children's Hospital of Philadelphia), Gerald Shaeffer (Children's Hospital of Philadelphia), Frances Balamuth (Children's Hospital of Philadelphia), Mary Catherine Harris (Children's Hospital of Philadelphia), Robert Grundmeier (Children's Hospital of Philadelphia)

## HE6 – INTRODUCTION TO THE HUMAN FACTORS TRANSFORMING HEALTHCARE (HFTH) NETWORK PANEL

### Hospital Environments Track

**Chair:** Antonia (Joy) Rivera (Children's Hospital of Wisconsin)

*Panel Session, Salon A-3*

Antonia (Joy) Rivera (Children's Hospital of Wisconsin), Adjhaporn Khunlertkit (Bumrungrad International Hospital), Sarah Fouquet (Children's Mercy Kansas City), Ken Catchpole (Medical University of South Carolina), Y. Raymond Chan (Children's Mercy Kansas City)

## MDD6 – CONTEXTUAL RESEARCH AND VIRTUAL REALITY

### Medical and Drug-Delivery Devices Track

**Chair:** Laurie Reed (Farm Design Inc.)

*Lecture Session, Salon A-5*

1. **Surprises of Contextual Research**, Conall Dempsey (Bresslergroup), Keith Karn (Human Factors in Context)
2. **I Want To Learn in Context!**, Josh Harling (Bresslergroup), Alex Visconti (Bresslergroup)
3. **Experience A Live Design Review in AR/VR**, Dave Bim-Merle (219 Design), Larry Miller (219 Design)

## PSRI6 – HIGH-LEVEL ADMIN / BIG PICTURE

### Patient Safety Research and Initiatives Track

**Chair:** Logan Gisick (Embry-Riddle Aeronautical University)

*Panel and Lecture Session, Salon A-2*

1. **Human Factors Practitioners' Contributions to the Joint Commission International Patient Safety Goals (IPSG)**, Adjhaporn Nana Khunlertkit (Bumrungrad International Hospital), Joy A. Rivera (All Children's Hospital Wisconsin), Sid Ponnala (Children's Hospital of Wisconsin), Aekanun Keeratisarun (Bumrungrad International Hospital), Shanjing (SQ) Yin (KK Women's and Children's Hospital), Laurie Wolf (Carilion Clinic), Sarah Parker (Carilion Clinic)

2. **Barriers to Shared Mental Models in Care Transitions Between Pediatric Trauma Bay and Pediatric Intensive Care Unit**, Kristen Webster (Johns Hopkins University), Ayse Gurses (Johns Hopkins University), Ashimiyu Durojaiye (Johns Hopkins University), Nicolette McGeorge (Johns Hopkins University), Cagla Oruc (Johns Hopkins University)

**3:00 p.m. - 3:30 p.m.**

**COFFEE BREAK/EXHIBITS**

Salon A Foyer

**3:30 p.m. - 4:30 p.m.**

**CCIT7 – DIGITAL HEALTHCARE: MOVING BEYOND THE DATA INPUT/OUTPUT PROBLEM TOWARD ENHANCING CLINICAL JUDGMENT**

*Clinical and Consumer Health-Care IT Track*

**Chair:** John Flach (Mile Two)

*Panel Session, Salon A-1*

Libby Duryee (Asymmetric), John Flach (Mile Two), Jeff Graley (Mile Two), Peter Reynolds (Wright State Boonshoft School of Medicine), Bryan Young (Asymmetrik)

**HE7 – CLINICIAN WELLNESS**

*Hospital Environments Track*

**Chair:** Farzan Sasangohar (Texas A&M University)

*Lecture Session, Salon A-3*

1. **Sustaining Personal Fulfillment in Healthcare**, Bruce Gewertz (Cedars-Sinai)
2. **From Joy and Fulfillment to Fear and Loathing, Clinician Well-Being and Burnout**, Joyce Wahr (University of Minnesota)

**HE11 – MULTITASKING AND WORKLOAD**

*Hospital Environments Track*

**Chair:** SQ Yin (KK Women's & Children's Hospital, Singapore)

*Lecture Session, Salon A-4*

1. **Auditory Attention in High-Stakes Team Environments: Effects of Multitasking on Speech Intelligibility**, Clayton Rothwell (The Ohio State University), Matthew Shotwell (Vanderbilt University), Daniel Ashmead (Vanderbilt University), Judy Edworthy (Plymouth University), Joseph Schlesinger (Vanderbilt University)
2. **Operating Hurts: A Study of EAES Surgeons**, Susan Hallbeck (Mayo Clinic)

**MDD7 – HUMAN FACTORS AND MEDICAL DEVICE INSTRUCTIONS FOR USE: IT'S NOT JUST GOOD BUSINESS IT'S THE LAW**

*Medical and Drug-Delivery Devices Track*

**Chair:** Samuel Alper (Bold Insight)

*Panel Session, Salon A-5*

Samuel Alper (Bold Insight), Korey Johnson (Bold Insight), Jenny Covington (Bowman and Brooke LLP), Steve Arndt (Explico Engineering Co.), Joy Borgardt (AbbVie)

**PSRI7 – AIDS IN THE HOME**

*Patient Safety Research and Initiatives Track*

**Chair:** Sid Ponnala (University of Wisconsin-Madison)

*Lecture Session, Salon A-2*

1. **Applications of Human Factors and Health Literacy in Pharmacovigilance**, James Duhig (AbbVie), Fabio Lievano (AbbVie), Rebecca Feuer (AbbVie), Cheryl Foit (AbbVie), Linda Scarazzini (AbbVie)
2. **Cognitive Artifacts Supporting Medication Management Tasks During the Hospital-to-Home Care Transition: Implications for Design**, Ephrem Abebe (Johns Hopkins University), Ayse Gurses (Johns Hopkins University), Yan Xiao (University of Texas-Arlington)

**4:30 p.m. - 6:00 p.m.**

**POSTERS/RECEPTION SPONSORED BY PHILLIPS MEDISIZE**

Salon C

**CCIT-POS2 – POSTERS/RECEPTION**

*Clinical and Consumer Health-Care IT Track*

1. **The Potential of Tele-Technology for Delivering Wellness Interventions to Adults Aging with Mobility Impairments**, Tracy Mitzner (Georgia Institute of Technology), Elena Remillard (Georgia Institute of Technology), Lyndsie Koon (University of Illinois), Taylor Mackin (University of Georgia), Jenay Beer (University of Georgia), Wendy Rogers (University of Illinois Urbana-Champaign)
2. **Trigger Identification of High Risk Medication Orders: Potassium as an Example Study**, Adam Krukus (National Center in Human Factors in Healthcare), Daniel Hoffman (Medstar Health), Swaminathan Kandaswamy (Medstar Health), Joseph Blumenthal (Medstar Health), Danielle Weldon (Medstar Health), Lucy Stein (Medstar Health), Eta Berner (University of Alabama at Birmingham), Aaron Zachary Hettinger (Medstar Health)
3. **Virtual Reality as a Prototyping Tool in Healthcare Design Research: Current Paradigms, Limitations, and Recommendations for the Future**, Jun Rong Jeffrey Neo (Cornell University), Saleh Kalantari (Cornell University)

# Program (continued)

4. **An Explorative Longitudinal Study on the Four-Year Patient Portal Use Among an Underserved Patient Population**, Ana Ongtengco (University of Illinois at Chicago), Kevin Roy (University of Illinois at Chicago), Liang Zhang (University of Illinois at Chicago), Jessie Chin (University of Illinois at Chicago)
5. **The Evolution of Patient Tracking Displays for an Ambulatory Surgical Setting: A Case Study**, Andrea Berman (Surgical Information Systems), Cindy Morales (Surgical Information Systems)
6. **Disparity in the Non-Use of Internet Among Caregivers of Chronic Disease Patients: Results from a Population-Based Study**, Ayokunle Olagoke (University of Chicago at Illinois), Ashley Hughes (University of Illinois Chicago)
7. **Representing the True and False Information About Human Papillomavirus (HPV) Vaccines**, Bowen Dong (University of Illinois at Chicago), Philip S. Yu (University of Illinois at Chicago), Bing Liu (University of Illinois at Chicago), Jessie Chin (University of Illinois)
8. **Reducing Alert Fatigue for Comfort Care and Palliative Care Hospital Patients**, Emily Patterson (The Ohio State University), Christopher Hritz (Ohio State University), Susan Moffatt-Bruce (Ohio State University)
9. **Usability of a Home-Use Blood Pressure Monitor System: An Evaluation of the Device and Instructional Materials**, Isis Chong (Purdue University), Jackie Soyoun Cha (Purdue University), Yuhao Peng (Purdue University), Denny Yu (Purdue University)
10. **Healthchart – An Extensible and Interactive Health Data Visualization**, Jeritt Thayer (Children’s Hospital of Philadelphia), Daria Ferro (Children’s Hospital of Philadelphia), Levon Utidjian (Children’s Hospital of Philadelphia), Robert Grundmeier (Children’s Hospital of Philadelphia), Joseph Zorc (Children’s Hospital of Philadelphia)
11. **WITHDRAWN**
12. **WITHDRAWN**
13. **Evaluation of a Prototype Tactile Display to Support Physiological Monitoring in Anesthesia**, Kylie Gomes (Clemson University), Sara Riggs (Clemson University)
14. **Transdisciplinary Co-Design to Envision the Needs of the ICU of the Future**, Laura Maguire (The Ohio State University), Daniel E. Vasquez (The Ohio State University, Wexner Medical Center), Amanda Haney (The Ohio State University Wexner Medical Center), Cindy Byrd (The Ohio State University Wexner Medical Center), Elizabeth B.-N. Sanders (The Ohio State University)
15. **How mHealth with Higher Usability Effects on Patients with Breast Cancer?**, Mahdi Ebnali (University at Buffalo), Kamal Azam (Tehran University of Medical Sciences), Adel Mazlomi (Tehran University of Medical Sciences)
16. **Patient and Provider Comfort and Concerns in Mobile Health Application Use in Healthcare**, Mark Call (Medstar Health National Center for Human Factors in Healthcare), Sarahfaye Dolman (MedStar Health Research Institute), Kristen Miller (MedStar Health National Center for Human Factors in Healthcare)
17. **Guidance for Custom Alarm Design: You Don’t Have to “Crank it up to 11”**, Morgan E. Reynolds (The Ohio State University), Michael F. Rayo (The Ohio State University), Morgan Fitzgerald (The Ohio State University), Mahmoud Abdel-Rasoul (The Ohio State University), Susan D. Moffatt-Bruce (The Ohio State University)
18. **Characterizing Trainable Interactions in an EMG Video Game Designed to Train Prosthetics Users**, Paul Barclay (University of Central Florida), Matt Dombrowski (University of Central Florida), Peter Smith (University of Central Florida)
19. **A Toolkit for Evaluating Interventions to Improve Decision Making: The Garden Path Approach**, Simon Fernandez (The Ohio State University), Laura Militello (Unveil LLC), Christen Sushereba (Unveil LLC), David Bahner (The Ohio State University), Michael Barrie (The Ohio State University), Emily Patterson (The Ohio State University)
20. **“I Still Haven’t Found What I’m Looking For”: HIT and Community Care Coordination**, Dawn Opel (Michigan State University)
21. **Usability in Health Care: A Journey From Risk Reduction to Value Creation**, Barbara Koop, Royal Philips)
22. **Impact of Electronic Medical Records on Patient-Provider Communication**, Maryam Zahabi (Texas A&M University), Adriana Lyman (Wichita State University)
23. **Facilitators and Barriers to the Successful Implementation of Electronic Whiteboards in Hospital Emergency Departments**, Kathryn Alvero (San Jose State University), Dan Nathan-Roberts (San Jose State University)
24. **Implementing the VA Essential Medication Information Standards Directive; Adapting Human Factors Approaches to Track Compliance to Standards and Government Policy**, Margo Kabel (Veterans Health Administration), Maureen Layden (Veterans Health Administration), Eric Spahn (Veterans Health Administration)
25. **Future Direction of Healthcare: Leverage Text Analytics to Identify Health Information Technology Trends**, Yimo Ho (NC State University), Peiyu Hou (NC State University), Karen Chen, (NC State University)



26. **Measuring Resident Performance in an EHR Based Simulation Using the Situation Awareness Global Assessment Technique**, Irit Rasooly (Children's Hospital of Philadelphia), Evan Orenstein (Children's Hospital of Atlanta), Naveen Muthu (Children's Hospital of Philadelphia)
27. **Understanding Concept of Health and Approaches to Health Maintenance Among Low-Income African American Older Adults**, Christina Harrington (Northwestern University)
28. **How to Improve Patient Compliance through Persuasive Technology and UX Design**, Cheng-Jhe Lin (National Taiwan University of Science and Technology)
29. **The Influence of Computer Agent Characteristics on User Preferences in Health Contexts**, Renato Azevedo (University of Illinois at Urbana-Champaign), Dan Morrow (University of Illinois at Urbana-Champaign), Kuangxiao Gu (University of Illinois at Urbana-Champaign), Thomas Huang (University of Illinois at Urbana-Champaign), Mark Hasegawa-Johnson (University of Illinois at Urbana-Champaign), Priya Soni (University of Illinois at Urbana-Champaign), Shuyuan Tang (University of Illinois at Urbana-Champaign), Tarek Sakakini (University of Illinois at Urbana-Champaign), Suma Bhat (University of Illinois at Urbana-Champaign), Ann Willemsen-Dunlap (UICOMP, Jump Simulation Center), James Graumlich (UICOMP)
30. **WITHDRAWN**
31. **The Challenges of Data Visualization for Precision Medicine**, Tatiana Bevilacqua (University of Waterloo), Raphael Nobrega (University of Waterloo), Helen Chen (University of Waterloo), Plinio Morita (University of Waterloo)
32. **Validation of Real-Time ICU Decision and Communication Support**, Christopher Nemeth (Applied Research Associates, Inc.), Jeremy Pamplin, (U.S. Army Telemedicine and Advanced Technology Research Center (TATRC)), Dawn Laufersweiler (Applied Research Associates, Inc.), Gregory Rule (Applied Research Associates, Inc.), Sarah Murray (Army Institute of Surgical Research), Maria Serio-Melvin (Army Institute of Surgical Research), Jose Salinas (Army Institute of Surgical Research)
- HE-POS2 – POSTERS/RECEPTION**  
**Hospital Environments Track**
1. **A Medical Student Mentoring Program During an Obstetrics and Gynecology Clerkship: Medical Student and Resident Perceptions Five Years In**, Tiffany Leverenz (Wichita State), Jennifer Duong (University of Kansas School of Medicine), Blaine Campbell (St. Vincent Hospital Evansville), David Grainger (University of Kansas School of Medicine), Barbara Chaparro (Embry-Riddle Aeronautical University)
2. **Outpatient Clinic Patient Rooming Workflow – Better Practices for Better Staff and Patient Experiences**, Carolyn Sommerich (The Ohio State University), Steve Lavender (The Ohio State University), Kevin Evans (The Ohio State University), Elizabeth Sanders (The Ohio State University)
3. **Process Redesign in a Hospital Environment: A Case Study Addressing Massive Post-Partum Hemorrhage**, Marina Cano (IDIVAL), Laura Herrero (IDIVAL), Juan Pedraja (HvV), Elena Rojo (HvV), Ignasi Maspons (IDIVAL), Lucy Stein (Medstar National Center for Human Factors in Healthcare), Nat Benda (Medstar National Center for Human Factors in Healthcare), José Maestre (HvV)
4. **Using Natural Hand Positions to Improve Anthropometric Product Design Data**, Christopher Curry (University of Minnesota), Emily Seifert (University of Minnesota), Linsey Griffin (University of Minnesota), Susan Sokolowski (University of Oregon)
5. **Insitu Simulated Workflow Assessment of Large Volume Infusion Pump**, Rebecca Berg (Yale New Haven Health), Connie Cholewczynski (Bridgeport Hospital), Jeannette Bronsord (Yale New Haven Hospital), Stephanie Sudikoff (Yale New Haven Health)
6. **Implementation of Live Bedside Video Feed to Improve Surgeon Situation Awareness in Robot-Assisted Surgery: A Pilot Study**, Yaoyu Fu (University at Buffalo), Qian Zhang (University at Buffalo), Zaeem Lone (Roswell Park Comprehensive Cancer Center), Lora Cavuoto (University at Buffalo), Khurshid Guru (Roswell Park Comprehensive Cancer Center)
7. **A Study on Effects of Different Types of Distractions/Interruptions in Operating Room**, Javad Sadeghi (Oregon State University), James Dolan (Oregon Health and Science University), Ken Funk (Oregon State University), Charlie Borzy (Oregon Health and Science University), Xinhui Zhu (Oregon State University)
8. **More Than a Feeling: Perceived Cognitive Workload to Determine Workforce**, Allison Kosydar (Children's Hospital of Philadelphia), James Won (Children's Hospital of Philadelphia)
9. **Visualization of Log File Data Supports Comparison of RN Activity Across Work Shifts**, Dana Womack (Oregon Health & Science University)
10. **Do Active Assist Transfer Devices Improve Transfer Safety for Patients and Caregivers in Hospital and Community Settings? A Scoping Review**, Elisa Galle (Hamilton Health Sciences), Tara Packham (McMaster University), Kent Tang (McMaster University), Javier Diaz, McMaster University), Orson Lui (McMaster University), Lucas Proulx (McMaster University)

# Program (continued)

11. **Virtual Reality as a Prototyping Tool in Healthcare Design Research: Current Paradigms, Limitations, and Recommendations for the Future**, Jun Rong Jeffrey Neo (Cornell University), Saleh Kalantari (Cornell University)
12. **Using Tactile and Multimodal Notifications on Smart Watch in Clinical Settings: The Effects of Environmental Noise and Modality of Notifications**, Huiyang Li (University of Rochester Medical Center), Hemanth Krishna Chundi (Binghamton University)
13. **Integrated Model: Patient Safety and Staff Wellbeing. Addressing Latent Systemic Conditions by Human Factor-based Leadership**, Michael Privitera (University of Rochester Medical Center)
14. **Deconstructing Surgeon Workload Using the SURG TLX**, Bernadette McCrory (Montana State University), Matthew Trzinski (Montana State University), Nicholas Ward (Montana State University), Bethany Lowndes (University of Nebraska Medical Center), David Claudio (Montana State University), M. Susan Hallbeck (Mayo Clinic)
15. **Patients in Pain: Decision Making, Trust, and Cooperation**, Preston Long (University of South Dakota), Harry Freeman (University of South Dakota), Doug Peterson (University of South Dakota)
16. **Interruptions Experienced by Emergency Nurses: Implications for Subjective and Objective Measures of Workload**, Katherine Law (Mayo Clinic), Hunter Hawthorne (Mayo Clinic), Renaldo Blocker (Mayo Clinic)
17. **Drowsy Driving Among Shift Work Nurses: A Qualitative Data Analysis**, Alec Smith (Texas A&M University), Farzan Sasangohar (Texas A&M University), Anthony McDonald (Texas A&M University), Nena Bonuel (Houston Methodist), Holly Shui (Houston Methodist), Christine Ouko (Houston Methodist), Lorelie Lazaro (Houston Methodist)
18. **Swift, Iterative, and Data-Driven Design Solution for EMR Human-Factor Issues**, Cheong Ang (LucidAct Inc.)
19. **Beyond RCA: Organizational Learning for Patient Safety**, Kristen Gorman (Carilion Clinic), Kathryn Kellogg (MedStar Health), Laurie Wolf (Carilion Clinic), Tom Gronow (University of Colorado Hospital), Yan Xiao
20. **A Systems Approach to Investigate Unnecessary Admissions and Readmissions in Emergency Departments (EDs)**, Samuel Bonet Olivencia (Texas A&M University), Farzan Sasangohar (Texas A&M University)
21. **Issues Related to Interoperability in the Hospital Environments and Lessons We Learned**, Yushi Yang (John Hopkins University), Lori Paine (Johns Hopkins University), Allen Chen (Johns Hopkins University)
22. **Transdisciplinary Co-Design to Envision the Needs of the ICU of the Future**, Laura Maguire (The Ohio State University), Daniel E. Vasquez (The Ohio State University, Wexner Medical Center), Amanda Haney (The Ohio State University Wexner Medical Center), Cindy Byrd (The Ohio State University Wexner Medical Center), Elizabeth B.N. Sanders (The Ohio State University)
23. **Understanding the Impact of Using an Induction Room for Anesthetic Induction of Children who are Undergoing an Ambulatory Surgical Procedure and Their Parents**, Deborah Wingler (Clemson University), Anjali Joseph (Clemson University)
24. **A Systematic Review of Video Camera Usage in the Operating Room for Human Factors & Ergonomics Research**, Nawang Singhe (University of Wisconsin-Madison), Katherine Law (Mayo Clinic), Hunter Hawthorne (Mayo Clinic), Renaldo Blocker (Mayo Clinic)
25. **The Application of Construct Validity to Hand Hygiene Research**, Jun Rong Jeffrey Neo (Cornell University), Li Xuan Amanda Tang (Cornell University)
26. **Evaluation of Patient Turning Devices to Reduce Muscular Demands among Caregivers**, Jaejin Hwang (Northern Illinois University), Megha Matoo (Northern Illinois University), Hemateja Ari (Northern Illinois University), Jeong Ho Kim (Oregon State University)

## MDD-POS2 – POSTERS/RECEPTION

### Medical and Drug-Delivery Devices Track

1. **Exploration of Parenteral Medication Use with High-Fidelity Simulation of Discrete Use Steps**, Chris Franzese (Matchstick, LLC), Rashmi Sharma (Genentech), Jenny M. Wu (Genentech), Marty Coyne (Matchstick)
2. **Observational Study of Use Problems Related to Drug Libraries of Infusion Pumps**, Juan Pedraja (Hospital Virtual Valdecilla), Elena Rojo (Hospital virtual Valdecilla), Marina Cano (Instituto de Investigación Valdecilla), Laura Herrero (Instituto de Investigación Valdecilla), Ignasi Maspons (Instituto de Investigación Valdecilla), Lucy Stein (National Center for Human Factors in Healthcare)
3. **Exploring the Use of Robots in Military Medical Settings**, Michaela Topacio (United States Air Force Academy), Elizabeth Phillips (United States Air Force Academy)
4. **A Narrative Review of FDA Human Factors Validation Requirement - Needs of Key Stakeholders and Proposal of an Industry (Human Factors Service Providers) Assessment Tool**, Katia M. Rojas (Binghamton University), Leon Cosler (Binghamton University), Daryl L. Santos (Binghamton University)
5. **WITHDRAWN**
6. **Assessing Impact of E-prescribing on Patient Safety in Pharmacy Settings – A Mixed Methods Study**, Shweta Shah (University of Wisconsin, Madison), Kimberly Galt (Creighton University), Kevin

- Fuji (Creighton University), Ted Kaufman (Creighton University)
7. **The Generation of an Integrated Tools Set through the Application of Human Factors Engineering Methods and Techniques to Enable Human Factors Data-Driven Decision Making in Complex Systems and Dynamic Programs**, Kaitlin Stinson (Eli Lilly), Mikaylah Gross (Eli Lilly), Amy Bartee (Eli Lilly), Mary Farrell (Ipsos), Luis Valencia (Ipsos), James Myers (Ipsos), Janice Neokratis (Ipsos), Marissa Vallette (Ipsos)
  8. **Acceptance of Subcutaneous Injections of Large Volume and High Viscous Solutions**, Stephan Riedel (Sanofi-Aventis Deutschland GmbH)
  9. **Integrated Product Development**, Elizabeth Volk (Phillips-Medisize)
  10. **International Usability Studies - Best Practices for Overseas Usability Research**, Joe Pratt (BlackHagen Design)
  11. **When a User Interface is Too Small: An Autoinjector Case Study**, Sean Hagen (BlackHagen Design)
  12. **Enabling Biologic Drug Delivery of Volumes Beyond 1 ml with Ergonomic Injection Solutions for Targeted User Populations**, Tzvetelina Chevolleau (BD), Megan Lan (BD)
  13. **Physician and Patient Trust in Robotic Surgery**, Chloe Topolski (Wright State University), Caroline Cao (Wright State University)
  14. **(Not) in it for the Money: Understanding the Choice to Participate in Simulated-Use Human Factors Studies**, Marc Egeth (Core Human Factors, Inc.), Erin Pohl (Core Human Factors, Inc.), Sarah Fairchild (Core Human Factors, Inc.), Sam Sye (Core Human Factors, Inc.), Loan Nguyen (Core Human Factors, Inc.), Steve Rybicki (Core Human Factors, Inc.)
  15. **Introducing a Methods Toolbox to Quantitatively Assess Patient Capabilities During Autoinjector Use: Insights from a Formative Human Factors Study**, Peter Sneeringer (Design Science Consulting), Christoph Jordi (Ypsomed AG)
  16. **Procedural Context in Simulated Use Evaluations: As Important as Physical Environment, and It's Not Training**, Katie Pingrey (Bold Insight), Ashley Chiu (Bold Insight), Corey Johnson (Bold Insight)
  17. **How Does It All Unfold? The Role of Format Layout in the User Experience of Medical Instructions for Use**, Trevor Johnson (Ipsos), Rebecca Williamson (Ipsos), Mary Farrell (Ipsos), David Hirning (Ipsos)
  18. **Utilizing User Personas to Tackle the "Human" Factor**, Jay Zignego (EG-GILERO)
  19. **Replicating Home Setups When Testing With Vulnerable Populations**, Anke Adenwala (Bold Insight), Yvette Granger (Bold Insight)
  20. **Tailoring the Usability Engineering Process**, Richard Newman (BlackHagen Design)
  21. **Understanding the Hemophilia Self-Injection Process**, Emily Hildebrand (Research Collective), Joseph O'Brian (Research Collective), Russell Branaghan (Research Collective), Bryant Foster (Research Collective), Anders Orn (Research Collective)
  22. **Designing Studies that Uncover and Connect Business and User Needs**, Teresita Liebel (Farm Design Inc.), Tara Feuerstein (Farm Design Inc.)
  23. **Emergency Ethnography: Using Observational Research to Promote Efficient Drug Delivery in Hospitals**, Larry McGrath (Design Science), Nicholas Zampa (Biogen), Carmella Lee (Design Science)
  24. **A Framework for Communication in Complex Healthcare Environments: The Case of the Electrophysiology Lab**, M. Robert Garfield (Human Factors Engineering), Judith Tiferes (Abbott)
  25. **Creating the Right Environment for Simulated Use, It's Elemental!**, Susan McDonald (Ximedica)
  26. **WITHDRAWN**
  27. **Training Decay Selection for Usability Validation: A Roadmap for Empirical Training Decay Curve Calculation**, Shannon Clark (UserWise, Inc.), Kelli Sum (San Jose State University), Lana Sneath (UserWise, Inc.), Daniel Nathan-Roberts, (San Jose State University)
  28. **Designing Design - A Method for Creating Successful Design Languages in the Medical Space**, Joe Fegelman (UL, LLC), Cory Costantino (UL, LLC), Mary Burton (UL, LLC), Max Ayers (UL, LLC)
  29. **Behavior Change and Persuasive Components in mHealth: A Scoping Literature Review**, Karim Zahed (Texas A&M University), Farzan Sasangohar (Texas A&M University)
  30. **Experience a Live Design Review in AR/VR**, Larry Miller (219 Design), Dave Bim-Merle (219 Design)
- PSRI-POS2 – POSTERS/RECEPTION**  
**Patient Safety Research and Initiatives Track**
1. **A Work System Approach to Characterizing Pharmacists' Role in Medication Management for People Living with Cystic Fibrosis**, Ashley Morris (University of Wisconsin-Madison), Olufunmilola Abraham (University of Wisconsin-Madison)
  2. **Measuring Surgical Flow and Teamwork in Minimally-Invasive Surgery: A Review of the Literature and Study Methodology**, Jordan Hilgers (Embry-Riddle Aeronautical University), Beatrice Podtschaske (Intuitive), Alison Algarin (Embry-Riddle Aeronautical University), Nicholas Reuss (Embry-Riddle Aeronautical University), Albert Bouquet (Embry-Riddle Aeronautical University)

# Program (continued)

3. **How Well do Dynamic Models of Teamwork from Surgical Simulation Performances Reflect Those of Live Patient Encounters?**, Ron Stevens (UCLA School of Medicine/The Learning Chameleon), Trysha Galloway (The Learning Chameleon, Inc.), Ann Willemsen-Dunlap (Order of Saint Francis Hospital), Jamie Gorman (Georgia Tech)
4. **Monitoring Opioid Withdrawal Symptoms: Gaps and Opportunities for Research and Practice**, Joseph Nuamah (Texas A&M University), Ranjana Mehta (Texas A&M University), Farzan Sasangohar (Texas A&M University), Madhav Erraguntla (Texas A&M University)
5. **A Systems Approach to Optimize Detection and Reporting of Patient Safety Hazards and Adverse Events in the Emergency Department**, Arthur Riba (VA NCPS)
6. **Development and Application of a Patient Safety Dashboard**, Arthur Riba (NCPS)
7. **Exploring Relationships Between Nurse-Patient Interactions and Duration of Emergency Room Triage**, Christian Boxley (MedStar Health), Lucy Stein (MedStar Health), Rachel Wynn (Medstar National Rehabilitation Hospital), Kristen Miller (MedStar Health), Raj Ratwani (MedStar Health), Krista Ratwani (Aptima, Inc.), Andrew Naber (Aptima, Inc.)
8. **Descriptive Analysis of the Design, Implementation, and Evaluation of Structured Anesthesia Handoff Protocols in Current Literature**, Emily Rickel (Embry-Riddle Aeronautical University), Logan Gisick (Embry-Riddle Aeronautical University), Andrew Griggs (Embry-Riddle Aeronautical University), Richard Simonson (Embry-Riddle Aeronautical University), Joseph Keebler (Embry-Riddle Aeronautical University), Elizabeth Lazzara (Embry-Riddle Aeronautical University)
9. **Involving Frontline Staff to Develop Solutions for Mitigating Serious Safety Events in Hospitals: Using a Co-Design and Resilience Engineering Approach**, Aastha Patel (Healthcare Human Factors), Olivia Zajdman (Healthcare Human Factors), Anjum Chagpar (Healthcare Human Factors)
10. **Surgical Delay Taxonomy and Domino Effect**, Kimberly LaForge (Veterans Administration), Tim Arnold (VA National Center for Patient Safety), Helen Fuller (VA National Center for Patient Safety)
11. **Checklists: A Review of Their Origins, Benefits, and Current Uses as A Cognitive Aid in Medicine**, Alex Chaparro (Embry-Riddle Aeronautical University), Elizabeth Lazzara (Embry-Riddle Aeronautical University), Joseph Keebler (Embry-Riddle Aeronautical University)
12. **Helicopter EMS Accidents: An Updated Analysis**, Richard Simonson (Embry-Riddle Aeronautical University), Levi Demaris (Embry-Riddle Aeronautical University), Joseph Keebler (Embry-Riddle Aeronautical University), Alex Chaparro (Embry-Riddle Aeronautical University)
13. **Score at the Door: A Retrospective Data Analysis of Sepsis Scoring Criteria in the Emergency Department**, Christopher Bonk (MedStar Health), Laura Schubel (MedStar Health), Brandon Ferrell (Georgetown University School of Medicine), Sanjai Ramdeen (Georgetown University School of Medicine), Robin Littlejohn (MedStar Health), Diana Ladkany (MedStar Washington Hospital Center), Kristen Miller (MedStar Health)
14. **Influence of Hierarchy on Communication in the Operating Room during Robot-Assisted Surgery**, Taylor Kunkes (University at Buffalo), Lora Cavuoto (University at Buffalo), Jeff Higginbotham (University at Buffalo), Ann Bisantz (University at Buffalo), Khurshid Guru (Roswell Park Comprehensive Cancer Center)
15. **Utility of Invisible Design in Developing a Pharmacy System Intervention**, Apoorva Reddy (University of Wisconsin-Madison), Corey Lester (University of Michigan-Ann Arbor), Jamie Stone (University of Wisconsin-Madison), Cynthia Phelan (University of Wisconsin-Madison), Richard Holden (Indiana University School of Medicine), Michelle Chui (University of Wisconsin-Madison)
16. **Examining the Post-Crash Wreckage: Finding the What, Why, and How Behind Medication Error**, Megan Corsi (University of Chicago Medicine), Bryan McCarthy (University of Chicago Medicine), Randall Knoebel (University of Chicago Medicine), Andrew Davis (University of Chicago Medicine), Michael O'Connor (University of Chicago Medicine), Seth Hartman (University of Chicago Medicine), Anthony Stull (University of Chicago Medicine), Michael Wall (University of Chicago Medicine)
17. **A Comparison of the Efficacy of Three Glove Removal Methods**, Joel Mumma (Georgia Institute of Technology), Kate Ferencsik (Georgia Institute of Technology), Elizabeth Harvey (Georgia Institute of Technology), Lauren McClelland (Georgia Institute of Technology), Roshni Patel (Georgia Institute of Technology), Elena Kusiak (Georgia Institute of Technology), Francis Durso (Georgia Institute of Technology)

18. **Providing Data-Driven Practice Habit Feedback for Advanced Practice Providers**, Kristen Webster (Johns Hopkins Hospital), Kathryn Hines (Johns Hopkins Hospital), Martha Kennedy (Johns Hopkins Hospital), Dauryne Shaffer (Johns Hopkins Hospital), Deborah Hobson (Johns Hopkins Hospital), Brandyn Lau (Johns Hopkins Hospital), Peggy Kraus (Johns Hopkins Hospital), Michael Streiff (Johns Hopkins Hospital), Christine Holzmueller (Johns Hopkins Hospital), Oluwafemi Owodunni (Johns Hopkins Hospital), Elliott Haut (Johns Hopkins Hospital)
19. **Usability of Hand Hygiene Observation Apps**, Amanda Sivek (ECRI Insitute), Erin Sparnon (ECRI Insitute), Patrice Tremoulet (Rowan University)
20. **Usability Evaluation of a Pediatric Decision Support Application**, Annelise Chaparro (University of Kansas School of Medicine), Sarah Fouquet (Children's Mercy Hospital Kansas City), William Shelstad (Embry-Riddle Aeronautical University), Robert Schremmer (Children's Mercy Hospital Kansas City), Joseph Keebler (Embry-Riddle Aeronautical University), Elizabeth Lazzara (Embry-Riddle Aeronautical University)
21. **Better Together: Demonstrating the Value of Partnership between Human Factors Engineers and Safety Professionals in Real-World Safety Event Reviews**, Mary Herold (MedStar Health), Travis Mitchell (MedStar Health), Jessica Howe (MedStar Health), Rebecca Butler (MedStar Health), Mark Call (MedStar Health), Lucy Stein (MedStar Health)
22. **Healthcare Personnel Attitudes and Perceptions of Risk Factors for Doffing of Enhanced Personal Protective Equipment**, Patience Osei (Johns Hopkins University School of Medicine), Ife Oresanwo (Johns Hopkins University School of Medicine), Lauren Benishek (Johns Hopkins University School of Medicine), Lisa Maragakis (Johns Hopkins University School of Medicine), Ayse Gurses (Johns Hopkins University School of Medicine)
23. **The Human Factors Medical Device Consortium: An Industry and Academia Collaboration**, Frank Drews (University of Utah), Kevin Cluff (Abbvie), Anne McLaughlin (NCSU), Patricia DeLucia (Rice University), Anil Kumar (San Jose State University)
24. **Ageing, Disability, and Needs for Physical Activity Interventions**, Lyndsie Koon (University of Illinois), Tracy Mitzner (Georgia Institute of Technology), Maurita Harris (University of Illinois), Wendy Rogers (University of Illinois)
25. **Safety Considerations in Oncology Care Coordination**, Onur Asan (Stevens Institute of Technology), Tina Yen (Medical College of Wisconsin)

## WEDNESDAY, MARCH 27

8:00 a.m. - 8:30 a.m.

### COFFEE BREAK

Salon A Foyer

8:30 a.m. - 10:00 a.m.

### CCIT8 – AUDIBLE ALARMS

Clinical and Consumer Health-Care IT Track

**Chair:** Morgan Fitzgerald (The Ohio State University)

Lecture Session, Salon A-1

1. **The Final Mile – Why Aren't People Implementing Our Sounds?**, Michael Rayo (The Ohio State University), Morgan Fitzgerald (The Ohio State University), Lauren Mansour (The Ohio State University), Emily Patterson (The Ohio State University), Susan Moffatt-Bruce (The Ohio State University Wexner Medical Center)
2. **A Broad and Inclusive Strategy for Developing Audible Alarms for Standardization**, Judy Edworthy (University of Plymouth), Joe Schlesinger (Vanderbilt University), Matthew Bolton (University of Buffalo), Melanie Wright (Trinity Health), Alexandra Bruder (Vanderbilt University), Laura Fuhr (Vanderbilt University), Matthew Shotwell (Vanderbilt University), Daniel Ashmead (Vanderbilt University), Meng Li (University of Buffalo), Xi Zheng (University of Buffalo)

### HE8 – SIMULATION

Hospital Environments Track

**Chair:** Bernadette McCrory (University of Nebraska Medical Center), Bethany Lowndes (University of Nebraska Medical Center)

Lecture Session, Salon A-3

1. **How and Why Healthcare Administrators and Human Factors Practitioners Should Embrace Healthcare Simulation**, Brittany Anderson-Montoya (Atrium Health)
2. **Making Simulation Work Across a Health System**, Russell Metcalfe-Smith (Cedars Sinai Health System)
3. **Evaluating Human Patient Simulation Fidelity and Effectiveness for Combat Medical Training**, Jennifer Winner (U.S. Air Force Research Laboratory), Teresa L. Millwater (U.S. Air Force School of Aerospace Medicine)
4. **Using an Escape Room to Investigate Team Cohesion**, Tara Cohen (Cedars-Sinai Medical Center), Brittany Bancroft (Cedars-Sinai Medical Center), Sarah Francis (Cedars-Sinai Medical Center), Anusha Koka (PennState), Elizabeth Lazzara (Embry-Riddle Aeronautical University), Barbara Chaparro (Embry-Riddle Aeronautical University), Joseph Keebler (Embry-Riddle Aeronautical University), Bruce Gewertz (Cedars-Sinai Health System)

# Program (continued)

## MDD8 – CDRH/CDER FDA PANEL

Medical and Drug-Delivery Devices Track

**Chair:** Anthony Andre (Interface Analysis)

Panel Session, Salon A-5

Rita Lin (FDA), Hanniebey Wiyor (FDA), Xin Feng (FDA)

## PSRI8 – DESIGN/IMPLEMENTATION FOR MULTIDISC. USERS AND TEAMS

Patient Safety Research and Initiatives Track

**Chair:** Elizabeth Papautsky (University of Illinois Chicago)

Lecture Session, Salon A-2

1. **Evaluation of Technologies for Barcode Medication Administration (BCMA)**, Laura Barg-Walkow (Children's Hospital Colorado), Juliette Brinks (Children's Hospital Colorado)
2. **Methods vs Utilizing Multidisciplinary Team to Create Novel Visual Alarm Designs that Improve Recognition of Patient Decompensation and Alarm Response**, Chelsea Horwood (The Ohio State University Wexner Medical Center), Susan Moffatt-Bruce (The Ohio State University Wexner Medical Center), Morgan Fitzgerald (The Ohio State University Department of Integrated Systems Engineering), Michael Rayo (The Ohio State University Department of Integrated Systems Engineering)
3. **Designing Emergency Medical Response Bags for First Responders**, Yuval Bitan (Ben Gurion University of the Negev), Eli Jaffe (Magen David Adom in Israel), Yoel Donchin (Hebrew University)

10:00 a.m. - 10:30 a.m.

## COFFEE BREAK

Salon A Foyer

10:30 a.m. - 12:00 p.m.

## CCIT9 – PATIENT-CENTERED TECHNOLOGY

Clinical and Consumer Health-Care IT Track

**Chair:** Marissa Vallette (IPSOS)

Lecture Session, Salon A-1

1. **The After Visit Summary Not an After Thought**, Nivedita Mohanty (Alliance Chicago), Rich Holden (Indiana University School of Medicine)
2. **Delivering Patient Information and Access to Mental Health Counseling for ICU Families: Towards a Human-Centered Mobile Health System for Room-to-Family Communication**, Anthony Faiola (University of Illinois at Chicago), Joanna Abraham (Washington University in St. Louis), Elizabeth Papautsky (University of Illinois at Chicago)

3. **Comparison of Gait Speed Estimation of Multiple Sensor-Based Technologies**, Plinio Morita (University of Waterloo), Adson Silva Rocha (University of Waterloo), George Shaker (University of Waterloo), Doojin Lee (University of Waterloo), Jing Wei (University of Waterloo), Brandon Fong (University of Waterloo), Anjali Thatte (University of Waterloo), Amir-Hossein Karimi (University of Waterloo), LinLin Xu (University of Waterloo), Avery Ma (University of Waterloo), Alex Wong (University of Waterloo), Jennifer Boger (University of Waterloo)

## HE9 – POTPOURRI - TEAMWORK CHECKLISTS AND WAYFINDING

Hospital Environments Track

**Chair:** Katherine Forsyth (Mayo Clinic)

Lecture Session, Salon A-3

1. **Examining Associations Between Hospital Size and Interprofessional Teamwork in Infection Prevention**, Megan Gregory (The Ohio State University), Clayton Rothwell (The Ohio State University College of Medicine), Sarah MacEwan (The Ohio State University College of Medicine), Ann Scheck McAlearney (The Ohio State University College of Medicine)
2. **The Development of a Daily Patient Room Cleaning Checklist**, Patience Osei (Johns Hopkins Armstrong Institute for Patient Safety), Clare Rock (Johns Hopkins University School of Medicine), Verna Scheeler (Johns Hopkins University School of Medicine), Sara C. Keller (Johns Hopkins University School of Medicine), Sara Cosgrove E. (Johns Hopkins University School of Medicine), Ayse Gurses (Johns Hopkins University School of Medicine), Anping Xie (Johns Hopkins Armstrong Institute for Patient Safety)
3. **Exploring Hospital Wayfinding Systems: Touchscreen Kiosks Apps and Environmental Cues**, Christy Harper (End to End User Research), Spencer Jefferies (End to End User Research), Andrea Crosser (End to End User Research), Angie Avera (University of Houston-Clear Lake City), Tyler Duke (University of Houston-Clear Lake City)

## MDD9 – REGULATORY IMPERATIVES

Medical and Drug-Delivery Devices Track

**Chair:** Ed Israelski (Human Factors Consultant)

Lecture Session, Salon A-5

1. **How Risk Management Fails Usability: Failure Modes of Risk Management and Human Factors and Best Practices for Use-Related Risk Analysis Activities**, Tara Feuerstein (Farm Design), Pat Baird (Philips)
2. **No Human Factors Validation Needed: How Comparative and Threshold Analyses Can Be Successful Alternatives to Validation Testing**, Melissa R. Lemke (Agilis Consulting Group), Deb Billings Broky (Agilis Consulting Group)

3. **Impact of the New EU Medical Device Regulations on Human Factors**, Martin Rausch (Sanofi), Carolin Ruf, Molly F. Story (Sanofi)

#### **PSRI9 – MODELING IN FLOW**

Patient Safety Research and Initiatives Track

**Chair:** Shilo Anders (Vanderbilt University)

Lecture Session, Salon A-2

1. **A Work Systems Analysis of Sterile Processing**, Myrte de Alfred (MUSC), Ken Catchpole (MUSC), Kevin Taafe (Clemson University), Larry Fredendall (Clemson University), Emily Huffer (Clemson University)
2. **Command and Control for Managing Patient Flow**, Abdulrahman Alhaider (Virginia Polytechnic Institute and State University), Nathan Lau (Virginia Polytechnic Institute and State University), Paul Davenport (Carilion Clinic), Melanie Morris (Carilion Clinic)
3. **Are Simulation-Derived Models of Neurodynamic and Communication Responses to Task Events Representative of Those From Live-Patient Encounters?**, Ron Stevens (UCLA School of Medicine/The Learning Chameleon), Jamie Gorman (Georgia Tech), Trysha Galloway (The Learning Chameleon Inc.), Ann Willemsen-Dunlap (Order of Saint Francis Hospital)

**3:30 p.m. - 3:45 p.m.**

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#### **COFFEE BREAK**

Salon A Foyer



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