

SESSION NO. 30—8:00 PM–9:00 PM

MCC, 101 DE, Level 1

SASES National Speech Contest - Finals

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 31—9:00 PM–11:00 PM

MCC, Auditorium 2, Level 1

SASES Quiz Bowl

Students of Agronomy, Soils and Environmental Sciences (SASES)

Monday, Nov. 16**SESSION NO. 32—6:15 AM–8:00 AM**

MCC, Seasons, Level 2

Women in Science Networking Breakfast

Special Sessions

SESSION NO. 33—7:00 AM–9:00 AM

Hilton, Minneapolis Ballroom D, Third Floor

ASA Breakfast, Awards, and Plenary (E.T. & Vam York Distinguished ASA Lectureship)*Registration Required*

Keynote/Plenary Sessions

*Presider: Paul Fixen, Jean Steiner, David Mengel*7:00 AM **ASA Breakfast**7:30 AM **Introductory Remarks**7:40 AM **ASA Awards**8:20 AM **Presidential Address**33-1 8:40 AM **Preparing the Next Generation to Confront the Greatest Challenge in the History of Agriculture.** Kenneth Quinn*9:00 AM **Adjourn****SESSION NO. 34—7:00 AM–6:00 PM**

MCC, Exhibit Hall BC, Level 1

Extension Materials on Display: I

ASA Section: Education & Extension

SESSION NO. 35—7:50 AM–12:00 PM

MCC, M100 F, Mezzanine Level

Symposium—Agrochemical Soil Interactions: Honoring the Contributions of Bill Koskinen

SSSA Division: Soils & Environmental Quality

*Presider: Sharon Papiernik, Sharon Clay*7:50 AM **Introductory Remarks**35-1 8:00 AM **Introduction to the Symposium and Background.** H.H. Cheng*35-2 8:20 AM **From the Stone Age to the Space Age: Dr. William Koskinen's Long Road with Analytical Development.** Brian Barber*35-3 8:50 AM **Pesticide Degradation in the Soil Environment Challenges of Trapping Volatile Components in Anaerobic Studies and a Discussion on Determination of the Bound (Non-extractable) Residue Formation.** Suresh Mislanakar*35-4 9:20 AM **Herbicide Fate and Transport: What I Learned from a Soil Chemist.** Sharon A Clay*9:50 AM **Break**35-5 10:00 AM **The Influence of Glyphosate on Mineral Content of Glyphosate-Resistant Crops.** Stephen Duke*, Krishna Reddy and James Cizdziel35-6 10:30 AM **What We Have Learned from Atrazine the Herbicide That Launched 1000 Careers.** Michael Jay Sadowsky*35-7 11:00 AM **Sorption of Pesticides to Soil and Soil Components.** LUCIA COX*, Rafael Celis, Maris Jesus JESUS Calderon, Maria CARMEN Hermosin and Juan Cornejo35-8 11:30 AM **Pesticide Sorption and Transport in Variable Landforms.** Sharon K. Papiernik*, William C. Koskinen, Annemieke Farenhorst, Pamela Azcarate, Jorgelina Montoya and Rubem S. Oliveira Jr.12:00 PM **Adjourn****SESSION NO. 36—7:55 AM–9:20 AM**

MCC, L100 GH, Lower Level

Graduate Student Oral Competition: Turfgrass Weeds, Diseases, and Insect Pests

C05 Turfgrass Science

*Presider: Alexander Kowalewski*7:55 AM **Introductory Remarks**36-1 8:00 AM **The Identification of a 2,4-D Resistant Population of Buckhorn Plantain (*Plantago lanceolata*) in Managed Turf.** Geoffrey Schortgen*, Aaron J. Patton and Daniel V. Weisenberger36-2 8:15 AM **The Effects of Different Rates of Nitrogen and Iron Sulfate on Microdochium Patch Development on Trafficked Annual Bluegrass Putting Greens in the Absence of Fungicides.** Clint Mattox*, Alexander R. Kowalewski and Brian W. McDonald36-3 8:30 AM **Effects of Organic Amendments and Cultural Practices for Control of Large Patch (*Rhizoctonia solani*) on Zoysiagrass (*Zoysia japonica*) Fairway.** Xiaowei Pan*, Xi Xiong, Robert J. Kremer, James T. English, Michael D. Richardson and Shiping Deng36-4 8:45 AM **Phytohormone Production of Pathogenic Bacteria (*Acidovorax avenae* subsp. *avenae*) in Culture and in Creeping Bentgrass Tissues.** Sha Liu*, Joseph M. Vargas and Emily B Merewitz36-5 9:00 AM **Evaluation of Indaziflam and Non-Selective Herbicide Combinations for Native Warm Season Grass Safety and Maintenance on Golf Course Roughs.** Michael Richard* and James D. McCurdy9:15 AM **Concluding Remarks**9:20 AM **Adjourn**

SESSION NO. 37—7:55 AM–10:05 AM

MCC, 103 BC, Main Level

Environmental Soil Physics and Hydrology Student Competition: Lightning Orals with Posters: I

SSSA Division: Soil Physics and Hydrology

Presider: Aaron Daigh, Ziru Liu, Matthew Patterson

- 7:55 AM **Introductory Remarks**
- 37-1 8:00 AM **Salinity Induced Alterations on Chile-Peppers at Various Growth Stages.** Gurjinder S Baath* and Manoj K. Shukla
- 37-2 8:05 AM **Soil Water Characteristic Curves of Long-Term Cropping Systems in South Central Wisconsin.** Elizabeth McNamee* and William L. Bland
- 37-3 8:10 AM **Effective Unsaturated Hydraulic Conductivity of Multilayer Soil Profiles.** Mohammad R Gohardoust*, Morteza Sadeghi, Mirkhalegh Ziatabar Ahmadi and Markus Tuller
- 37-4 8:15 AM **Characterization of Soil Hydraulic Properties Heterogeneity in Sandy Soil By Tomodensitometric Analysis and Particle Size Distribution.** Yann Periard*, Silvio Jose Gumiere, Alain Rousseau, Jonathan A Lafond and Jean Caron
- 37-5 8:20 AM **Estimating Soil Hydraulic Properties Using Pedotransfer Functions in Texas: The Role of Soil Organic Carbon.** Julieta Collazo*, Cristine L. S. Morgan, Haly L. Neely, Johannes Tadesse Yimam and Andrea Szilagyi Kishne
- 37-6 8:25 AM **Microgravity Effects on Water Movement in Capillary Tubings.** Yuichi Maruo*, Naoto Sato, Risa Nagura, Ryo Kamide and Kosuke Noborio
- 37-7 8:30 AM **Dynamic Non-Equilibrium Water Flow in Sphagnum Moss and Peat.** Tobias KD Weber*, Efstathios Diamantopoulos, Wolfgang Durner and Jonathan S Price
- 37-8 8:35 AM **Prediction of Particle Size Distribution with Visible-Near Infrared Spectroscopy.** Cecilie Hermansen*, Maria Knadel, Per Moldrup, Mogens H. Greve, Dan K. Marning and Lis W. de Jonge
- 37-9 8:40 AM **Prediction of Vegetation Parameters Using Reflectance Measurements and Soil Moisture in Oklahoma Grassland.** Sonisa Sharma* and Tyson E. Ochsner
- 37-10 8:45 AM **Dynamics of Wavelet-Decomposed Soil Water Content Signals in Relation to Soil Pore Characteristics.** Mingming Qin*, Daniel Gimenez and Miguel Cooper
- 37-11 8:50 AM **Temperature Effect on Aggregate Stability of Volcanic Ash Soils.** Rando Sekiguchi*, Yuji Kohgo and Hirotaka Saito
- 37-12 8:55 AM **Carbon Distribution within Intact Soil Macro-Aggregates.** Michelle Quigley*, Alexandra Kravchenko, Wakene Chewaka, Andrey K. Guber and Mark Rivers
- 9:00 AM **Break**
- 37-13 9:10 AM **Untangling the Influences of Shallow Groundwater and Soil Texture on Corn Yield Variability.** Samuel C. Zipper*, Mehmet Evren Soylu, Eric Booth and Steven Loheide
- 37-14 9:15 AM **An Infiltration Index for Stormwater Runoff.** Amanda Mae Liesch*, Joshua Heitman, Aziz Amoozegar, David L. Lindbo and Rob Austin
- 37-15 9:20 AM **Leaching and Bioavailability of Stormwater Contaminants in Compost-Amended Biore-tention Systems.** Maninder Kaur Chahal* and Markus Flury

- 37-16 9:25 AM **Modeling the Effect of Failing on-Site Waste-water Treatment Systems on Watershed Nitrate Yield with SWAT.** Nahal Hoghooghi* and David E. Radcliffe
- 37-17 9:30 AM **Electromagnetic Induction As a Tool for Mapping Coarse Fragments in Texas.** Richard David Hatch* IV
- 37-18 9:35 AM **Soil Quality, Moisture, and Temperature Evaluation Under Different Biodegradable Mulches.** Henry Y Sintim*, Sreejata Bandopadhyay, Shuresh Ghimire, Markus Flury, Andy I. Bary, Sean Schaeffer, Jennifer M DeBruyn, Carol Miles and Debra Inglis
- 37-19 9:40 AM **Hidden Half Network Model: A Prototype for Simulating Soil Pore Space, Root Architecture, and Water Movement.** Yuan Wu* and Henry Lin
- 37-20 9:45 AM **Soil Salinity and Sodicity Impacts on Soil Hydrologic Properties.** Hans Klopp* and Aaron L. Daigh
- 37-21 9:50 AM **Drivers of Spatiotemporal Variability in Evapotranspiration and Recharge from Irrigated Agroecosystems in the Wisconsin Central Sands.** Mallika Nocco*, Christopher Kucharik, George Kraft and Steven Loheide
- 37-22 9:55 AM **Consequences of Textural Analysis Methods on Time Lag Estimates.** Sara E. Vero*, Owen Fenton, Paul Murphy, Sophie C. Sherriff and Daire O'Huallachain
- 37-23 10:00 AM **SWAT Model Calibration, Validation and Parameter Sensitivity Analysis Using SWAT-CUP.** Sushant Mehan*, Ram Neupane and Sandeep Kumar
- 10:05 AM **Adjourn**

SESSION NO. 38—7:55 AM–12:00 PM

MCC, 103 DE, Level 1

Symposium—Grand Challenges in Modeling Soil Processes: I

SSSA Division: Soil Physics and Hydrology

Presider: Andrea Schnepf, Jiri Simunek, Dani Or

- 7:55 AM **Introductory Remarks**
- 38-1 8:00 AM **Modeling Root Water Uptake in Heterogeneous Soils.** Mathieu Javaux*, Jan Vanderborght, Harry Vereecken, Katrin Huber and Valentin Couvreur
- 38-2 8:15 AM **Monitoring the 3-D Evolution of Soil Macropore Networks Under Natural Boundary Conditions.** Johannes Koestel*
- 38-3 8:30 AM **Scale-Specific Variability to Understand Complex Soil Processes.** Asim Biswas*
- 38-4 8:45 AM **Improving the Representation of Soil Knowledge in the Noah-MP Land Surface Model.** Johannes Tadesse Yimam*, Cristine L. S. Morgan, Bright Dornblaser, Michael Barlage, David Gochis, Jonathan Gross, Haly L. Neely and Andrea Szilagyi Kishne
- 38-5 9:00 AM **Numerical Evaluation of Transient Bulk Density Impact on Surface Energy Balance and Coupled Heat and Water Transfer in Soils.** Yuki Kojima*, Joshua L. Heitman and Robert Horton
- 38-6 9:15 AM **Evaporation from Saline Porous Media with the Associated Salt Precipitation Patterns and Dynamics.** Nima Shokri*
- 9:30 AM **Break**

- 38-7 9:45 AM **Hyper-Resolution Simulation of Field-Scale Physical Processes in Watershed-Scale Integrated Hydrologic Models.** Steven Frey*, Young-Jin Park, Hyoun-Tae Hwang, Steven Berg, David Lapen and E.A. Sudicky
- 38-8 10:00 AM **Evaluation of Water and Nitrogen Balance in a Direct-Seeded-Rice Field Experiment Using Hydrus-1D.** Yong Li and Jirka Simunek*
- 38-9 10:15 AM **Numerical Simulation and Evaluation of a Soil Profile Subjected to Rehabilitation Techniques Using a One-Dimensional Water and Solute Transport Model.** Mandana Shaygan*, Thomas Baumgartl, Lucy Reading and Sven Arnold
- 38-10 10:30 AM **Partially-Filled Macropores: Preferential Flow Modes That Require Supplementation of Darcy's Law.** John R. Nimmo*
- 38-11 10:45 AM **From Percolation to Infiltration: Using Fractal Models in Unsaturated Soils.** Ryan Stewart*
- 38-12 11:00 AM **Soil Pipe Flow and Internal Erosion: What We Don't Know Can Kill Us.** Glenn V. Wilson*, Garey A. Fox and John L. Nieber
- 38-13 11:15 AM **Simulation the Soil Water and Salt Movement of Dry Land Under Different Groundwater Depth in Central Asia Region.** Cheng Zhao*, Ming Han and Tian Changyan
- 38-14 11:30 AM **Framework for Parameterizing and Validating Apex to Support Ntt.** Daniel Moriasi*, Kevin King, David D. Bosch, Dave Bjorneberg, Jorge Guzman and Stephen Teet
- 11:45 AM **Panel Discussion**
- 12:00 PM **Adjourn**

SESSION NO. 39—7:55 AM—4:00 PM

MCC, 103 F, Level 1

**Forest, Range & Wildland Soils: I
(includes student competition)**

SSSA Division: Forest, Range & Wildland Soils

President: Farrah Fatemi

- 7:55 AM **Introductory Remarks**
- 39-1 8:00 AM **Evaluating 20 Year Soil Response to OM Manipulation: Implications for Assessment and Application.** Robert A. Slesak*, Brian Palik and Anthony D'Amato
- 39-2 8:15 AM **Response of Deep Soil Carbon Pools to Forest Management Treatments in a Highly Productive Andisol.** Christiana Dietzen*, Eduardo Marques, Jason James, Rodolpho Bernardi, Scott M. Holub and Rob Harrison
- 39-3 8:30 AM **Southern Appalachian Forest Soils Show a Pattern of Long-Term Carbon Loss.** Jennifer D. Knoepp*, A. Christopher Oishi, Chelcy Miniati, Jennifer Fraterrigo, Nina Wurzbarger and Brian D Strahm
- 39-4 8:45 AM **Recent Organic Matter Losses of Mountain Forest Soils in the German Alps Are Likely Caused By Climate Change.** Joerg Prietzel*, Dominik Christophel, Lothar Zimmermann and Alfred Schubert
- 39-5 9:00 AM **Subsoil's Coupled Carbon-Iron Redox Cycle and Its Influence on Deep Soil C Accumulation during Reforestation.** Allan Bacon* and Daniel deB. Richter

- 39-6 9:15 AM **Estimating Forest Soil Organic Carbon in the United States Using National Forest Inventory Data.** Charles H. Perry*, Grant M. Domke, Brian F. Walters, Christopher W. Woodall, Lucas E. Nave and Christopher W. Swanston
- 39-7 9:30 AM **Using Fluorescence Spectroscopy to Link Changes in Soil Chemistry with Stream Dissolved Organic Matter.** Michael D. Sanclements*, Ivan J. Fernandez and Mary Beth Adams
- 39-8 9:45 AM **Lessons in Buried Horizons and Pedogenesis from Deep Forest Soils.** Jason Nathaniel James*, Rob Harrison, Christiana Dietzen and Cole Gross
- 10:00 AM **Break**
- 39-9 10:15 AM **Forest Soil Calcium Dynamics and Water Quality: Implications for Forest Management Planning.** James W. McLaughlin*
- 39-10 10:30 AM **Effects of Invasive Scotch Broom on Soil Water Chemistry and the Soil Microenvironment.** David Carter*, Robert A. Slesak, Timothy B. Harrington and Anthony D'Amato
- 39-11 10:45 AM **Fertilization and Throughfall Reduction Effects on Controls of Decomposition.** Kristin M. McEligott*, Brian Strahm and John R Seiler
- 39-12 11:00 AM **Northern Forest Droughtnet: A New Framework to Understand Impacts of Precipitation Change on the Northern Forest Ecosystem.** Lindsey Rustad*, Heidi Asbjornsen, Pamela Templer, Katie Jennings, Andrew Reinmann, Mary Martin and Melinda Smith
- 39-13 11:15 AM **Effect of Snow Removal on Soil Biogeochemistry.** Kaizad Patel*, Corianne Tatariw, Ivan J. Fernandez, Jean MacRae and Tsutomu Ohno
- 11:30 AM **Discussion**
- 11:45 AM **Lunch Break**
- 39-14 1:00 PM **A Biologically-Based Approach to Evaluating Soil Phosphorus Availability Across Complex Landscapes.** Thomas H. DeLuca*, David L. Jones, Melissa R Pingree, Helen C Glanville, Matthew Harris and Bridget Emmett
- 39-15 1:15 PM **Phosphorus Availability Is Related to the Growth of White Spruce in Some Reconstructed Sites in the Athabasca Oil Sands Region.** Mihiri Manimel Wadu*, Min Duan and Scott Chang
- 39-16 1:30 PM **Soil Chemical Properties Following Wood Ash Applications after Biomass Harvesting in the Boreal Forest.** Paul W. Hazlett*, David M. Morris, Rob Fleming, Kara Webster, Bill Peng, Neal Scott, Genevieve Noyce, Emily Smenderovac, Nathan Basiliko, Honghi Tran, Zoe Lindo and Paul George
- 39-17 1:45 PM **A Hyper-Temporal Remote Sensing Protocol for Detecting Ecosystem Disturbance, Classifying Ecological State, and Assessing Soil Resilience.** Jonathan J. Maynard* and Jason W. Karl
- 39-18 2:00 PM **Properties of Soils in Natural, Secondary and Rehabilitated Forest in Chikus and Tapah Hill Forest Reserves, Peninsular Malaysia.** Daljit Singh Karam Singh*, Arifin Abdu, Shamshuddin Jusop and Radziah Othman
- 2:15 PM **Afternoon Break**
- 39-19 2:30 PM **Declining Acidic Deposition Begins Reversal of Forest-Soil Acidification in the Northeastern U.S. and Eastern Canada.** Gregory B. Lawrence*, Paul Hazlett, Ivan J. Fernandez, Rock Ouimet, Scott Bailey, Walter Shortle, Kevin Smith and Michael Antidormi

SPECIAL SESSIONS — SESSION NO. 40

- 39-20 2:45 PM **Adsorption Capacity of Wildfire-Derived Charcoal in Pacific Northwest Forest Soils.** Melissa R.A. Pingree* and Thomas H. DeLuca
- 39-21 3:00 PM **Belowground Wood Stake Decomposition from Research Sites Across the Northeastern United States: First Year Results.** Mary Beth Adams*, Deborah S. Page-Dumroese, Martin F. Jurgensen, Ian Yesilonis, John M. Kabrick, Rich Hallett, Brian Palik and Megan Lang
- 39-22 3:15 PM **Estimating Soil Mercury Pools and Residence Times in Coniferous and Deciduous Forest Stands.** Justin B. Richardson*
- 39-23 3:30 PM **Three-Dimensional Spatial Patterns of Fine Roots at the Landscape-Scale in a Subtropical Savanna.** Yong Zhou*, Thomas W. Boutton, X. Ben Wu, Cynthia Wright and Anais Dion
- 3:45 PM **Afternoon Discussion**
- 4:00 PM **Adjourn**

SESSION NO. 40—8:00 AM–11:00 AM

MCC, 101 DE, Level 1

Symposium—Connecting Phytobiomes with Soil and Plant Health

Special Sessions

Section or Division Cosponsor: C03 Crop Ecology, Management & Quality, Soil Biology & Biochemistry

Presider: Ronald Turco

- 8:00 AM **Introductory Remarks**
- 40-1 8:05 AM **Phytobiomes and Plant Health: Science and Policy.** Jan E Leach*
- 40-2 8:35 AM **Mediation of Induced Plant Defenses By the Gut Symbionts of Insects Herbivores.** Gary W. Felton*
- 40-3 9:05 AM **Nematodes and Microarthropods As Environmental Indicators for Terrestrial and Wetland Soils.** Deborah A. Neher*
- 9:35 AM **Break**
- 40-4 9:45 AM **Microorganisms Impacting Production of Forage Crops.** Carolyn Young*
- 40-5 10:15 AM **Connecting Soil Microbial Communities to Soil Functioning and Soil Health.** Jennifer Moore-Kucera* and Veronica Acosta-Martinez
- 40-6 10:40 AM **The Role of Enzyme Activities in Soil Ecosystem Services: Location, Origin and Connection to the Phytobiome.** Veronica Acosta-Martinez* and Jennifer Moore-Kucera
- 11:00 AM **Adjourn**

SESSION NO. 41—8:00 AM–11:05 AM

MCC, M101 A, Mezzanine Level

Developing Sustainable Bioenergy Cropping Systems: I

SSSA Division: Soil & Water Management & Conservation

Presider: Humberto Blanco

- 8:00 AM **Introductory Remarks**
- 41-1 8:05 AM **Potential of Bioenergy Cropping Systems for Soil Organic Matter Restoration, Potassium and Magnesium Recycling, and Water Quality Protection.** Roger Nkoa* and Bill Deen

- 41-2 8:20 AM **Beyond Corn and Beans Increasing Farm Profits with Precision Conservation.** Elke Brandes*, Gabe McNunn, David Muth, Lisa Schulte-Moore, Ian Bonner, Kara Cafferty and Emily A. Heaton
- 41-3 8:35 AM **Soil Hydraulic Properties Affected By Topsoil Thickness in Corn-Soybean Rotation and Switchgrass Production Systems.** Syaharudin Zaibon*, Stephen H. Anderson, Newell R Kitchen and Allen L Thompson
- 41-4 8:50 AM **Seasonal and Daily Patterns of Switchgrass Pollen Shed.** Raymond Arritt* and Landon Bunderston
- 41-5 9:05 AM **Integrating Winter Annual Oilseeds with Corn and Soybean Rotations in the Upper Midwest with Relay Cropping.** Kevin Anderson*
- 9:20 AM **Break**
- 41-6 9:35 AM **Effects of Plant Diversity and Biochar on the Composition and Yields of Biofuel Grasslands.** Catherine Bonin* and Emily A. Heaton
- 41-7 9:50 AM **Influence of Biochar and Diversified Cropping Systems on Soil Physical and Chemical Properties.** Deborah Aller*, David A. Laird, Ross Mazur, Kenneth J. Moore and Roger Hintz
- 41-8 10:05 AM **Biofuels and Bioproducts from Marginal Lands with Industrial and Municipal Wastes.** Khandakar R. Islam*, Randall C Reeder and Alan P. Sundermeier
- 41-9 10:20 AM **Sweet Sorghum: Effect of Nitrogen on Biomass, Juice Content and Juice Quality.** Maru K. Kerling* and Vitalis Wilbald Temu
- 41-10 10:35 AM **Soil Nitrogen Responses to Cover Crop and Nitrogen Fertilization Under Bioenergy Sorghum.** Upendra M. Sainju*, Hari P Singh and Bharat P. Singh
- 41-11 10:50 AM **Enhancing Ecosystem Services of Marginally-Productive Agricultural Lands with Dedicated Bioenergy Crops.** Humberto Blanco*, Robert B. Mitchell, Virginia L. Jin and Marty R. Schmer
- 11:05 AM **Adjourn**

SESSION NO. 42—8:00 AM–11:20 AM

MCC, M100 C, Mezzanine Level

Soil Education and Outreach: I

SSSA Division: Soil Education and Outreach

Presider: Darrell Schulze

- 8:00 AM **Introductory Remarks**
- 42-1 8:05 AM **Naming, Knowing, and Understanding Towards a Transdisciplinary Epistemology of the Soil.** Alexandra Toland* and Jay Stratton Noller
- 42-2 8:20 AM **Overcoming Agricultural Illiteracy at a Land Grant University.** Neal Samuel Eash*, Casey Sullivan, Deb O'Dell and Dayton Lambert
- 42-3 8:35 AM **The Essence of Soil Chemistry Class in Undergraduate Degree Programs.** Daniel G. Strawn*
- 42-4 8:50 AM **Engaging the World with Soilhub.Com.** Michael Paul Callahan*
- 42-5 9:05 AM **The Integrating Spatial Educational Experiences (Isee) Ipad App.** Darrell G. Schulze*
- 42-6 9:20 AM **Delivery and Student Perceptions of Soil Science Refresher Course.** Sergio Manacpo Abit* Jr.
- 42-7 9:35 AM **Glo, Hungary 2nd International Soil Judging Contest Effect on Curriculum and Student Outlook in the Field Discipline of Soil Science.** Maxine J. Levin*, John M. Galbraith, Joey N. Shaw and Erika Micheli

- 9:50 AM **Break**
- 42-8 10:05 AM **Application of Field Research for Land Management Decisions: Prevention and Reclamation of Soil Salinity Using Site-Specific Data.** Kirsten Butcher*, Abbey Foster Wick, Tom DeSutter, Jason Harmon and Chandra Heglund
- 42-9 10:20 AM **Visual Technique to Address below Ground Tillage Management Options.** Jodi DeJong-Hughes*, Douglas L. Holen Jr. and Phillip Glogoza
- 42-10 10:35 AM **Actively Moving Adult Learners into Social Action through an Urban Soils Course.** Akilah Martin*
- 42-11 10:50 AM **Soil Science & Conservation Continuing Education Workshop for Teachers.** Heidi M. Dittmer*, Thomas Paulsen and Richard M. Cruse
- 42-12 11:05 AM **Opportunities for Professional Soil Scientist in Environmental Consulting.** Pierre A. Bordenave*
- 11:20 AM **Adjourn to business meeting.**

SESSION NO. 43—8:00 AM–11:50 AM

MCC, M101 B, Mezzanine Level

Tracking Legacy Phosphorus in Lakes and Rivers - I

SSSA Division: Soils & Environmental Quality

President: Carl Rosen

- 8:00 AM **Introductory Remarks**
- 43-1 8:05 AM **Tracking Sources of Phosphorus in East Creek, a Coastal Plain Tributary of the Chesapeake Bay.** Kristi Bear*, Sunendra R. Joshi and Deb P. Jaisi
- 43-2 8:20 AM **Internal Cycling of Phosphorus in the Chesapeake Bay: Comparison of P Cycling in Water and Sediment Columns.** Jiyong Li*, Patrick Reardon, Sunendra R. Joshi, Yuge Bai, Kristi Bear, Nirman Dhakal, Nancy Washton and Deb P. Jaisi
- 43-3 8:35 AM **River Bank Materials As a Source and Carriers of Phosphorus to Lake Pepin.** Ashley Lynn Grundtner, Satish C. Gupta* and Paul R. Bloom
- 43-4 8:50 AM **P Speciation in Sediments of the Minnesota River Basin.** Ashley Lynn Grundtner* and Satish Gupta
- 43-5 9:05 AM **Understanding Phosphorus Sources in Minnesota's Watersheds for Improved Water Quality Outcomes of Agricultural Management.** Jacques Finlay*, Lawrence Baker, Evelyn Boardman, Brent J. Dalzell, Christy Dolph and Amy Hansen
- 43-6 9:20 AM **The Importance of Equilibrium Processes in Regulating Soluble Phosphorus Runoff and Loading in Tributary Systems.** William James*, Satish Gupta and Ashley Lynn Grundtner
- 43-7 9:35 AM **Searching for Phosphorus Sources in a Mixed-Use Mountain Watershed.** Austin Pearce*, Josiah Johns, Jessica Jones and Neil Hansen
- 9:50 AM **Break**
- 43-8 10:05 AM **Sources and Fate of Acid Extractable Phosphorus in an Agricultural Soil.** Sunendra R. Joshi*, Ashley C. Denny and Deb P. Jaisi
- 43-9 10:20 AM **Processes Controlling the Source, Movement, and Release of Soil Phosphorus in Midwestern Streams from Pasture and Crop Land.** William Beck*, Thomas M. Isenhardt, Richard Schultz, John L. Kovar, James R. Russell, Keith E. Schilling, Michael L. Thompson and Mark D. Tomer

- 43-10 10:35 AM **Inferring Legacy P Sources from Plot and Hillslope Runoff Data.** Anthony R. Buda*, Peter J.A. Kleinman, Lou S. Saporito, Jasmeet Lamba, Gordon J. Folmar and Ray B. Bryant
- 43-11 10:50 AM **Using Sediment Fingerprinting Techniques to Elucidate Sediment and Phosphorus Transport Dynamics in an Agricultural Watershed.** Jasmeet Lamba*, Anita M. Thompson, K.G. Karthikeyan and Faith Fitzpatrick
- 43-12 11:05 AM **Forms of Sediment Phosphorus Under Varying Redox Potentials.** Suroso Rahutomo*, John L. Kovar and Michael L. Thompson
- 43-13 11:20 AM **Phosphorus Sinks to Phosphorus Sources: The Impact of Legacy P and Conservation Practices.** Rosalind Dodd*, Andrew N. Sharpley and Helen Jarvie
- 43-14 11:35 AM **Source to Impact: Phosphorus Trends Across the Nutrient Cascade in an Arable Watershed in Response to P Mitigation Measures.** Noleen T McDonald*, Philip Jordan, Mairead Shore, Per-Erik Mellander and Ger Shortle
- 11:50 AM **Adjourn**

SESSION NO. 44—8:00 AM–11:50 AM

MCC, L100 IJ, Lower Level

Symposium—Soil and Vegetation Management for Stormwater Control

SSSA Division: Urban and Anthropogenic Soils

Section or Division Cosponsor: Urban and Anthropogenic Soils, Soil Consulting Scientists, Soil & Water Management & Conservation, Soils & Environmental Quality

President: Gregory Evanylo

- 8:00 AM **Introductory Remarks**
- 44-1 8:05 AM **Intro to Storm Water Issues - Quantity and Quality.** Ryan Winston*, Alessa Smolek and William Hunt III
- 44-2 8:30 AM **Selecting and Designing BMPs to Meet Regulatory Requirements.** Michael Trojan*
- 44-3 8:55 AM **Controlling Post-Construction Erosion.** Richard McLaughlin*
- 44-4 9:20 AM **Enhancing Urban Soil Function with Amendments.** Gregory Evanylo*
- 9:45 AM **Break**
- 44-5 10:00 AM **The Green in Green Infrastructure: Plant Selection, Design and Management in Successful BMPs.** Steven Rodie*
- 44-6 10:25 AM **Rethinking Bioretention Design - Maximize in-Situ Soils, Enhance Function, & Reduce Costs.** Andy Szatko*
- 44-7 10:50 AM **Is Compost Quality Important? Research on the Performance of Compliance Vs Non-Compliance of Federal Specifications for E&sc Compost-Based BMPs.** Britt Faucette*
- 44-8 11:15 AM **Storm Water Design Implementation - Where Intent Meets Reality.** Pierre A. Bordenave*
- 11:40 AM **Concluding Remarks**
- 11:50 AM **Adjourn**

SESSION NO. 45—8:00 AM–11:55 AM

MCC, M100 A, Mezzanine Level

Symposium—Soil Survey: Present and Future: I

SSSA Division: Pedology

Presider: Candiss Williams, Skye Wills

- 8:00 AM **Introductory Remarks**
- 45-1 8:05 AM **Soil Science Functions and Services.** David L. Lindbo*
- 45-2 8:20 AM **US Soil Survey at Multiple Spatial, Temporal, and Organizational Scales.** H. Curtis Monger*
- 45-3 8:40 AM **Soil Survey in Canada: Lessons from the Past, Ideas for the Future.** Scott Smith*
- 45-4 9:00 AM **Today's and Tomorrow's Soil Survey Is Essential for Developing Locally Adapted Soil Health Management Systems.** Bianca Moebius-Clune*, Michael P. Robotham, David L. Lindbo, David W. Smith and C. Wayne Honeycutt
- 45-5 9:20 AM **Informing Climate Change Studies Using Soil Survey Information.** Umakant Mishra*, Zhaosheng Fan and Beth Drewniak
- 9:40 AM **Break**
- 45-6 9:50 AM **Challenges for the New Century of Soil Survey: Quantification and Representation in the Age of Big Data.** Daniel Hirmas*
- 45-7 10:10 AM **Integrating Soil Landscape Systems into Decision Making for Resource Management.** Phillip R. Owens* and Zamir Libohova
- 45-8 10:30 AM **Enhancing the National Cooperative Soil Survey.** Samuel J. Indorante* and Brad D. Lee
- 45-9 10:40 AM **Soil Systems Projects and Multistate Partnerships: The Shawnee Hills Example.** Brad D. Lee* and Samuel J. Indorante
- 45-10 10:50 AM **Progress in Soil Survey Technology.** Anthony Toby O'Geen* and Dylan Beaudette
- 45-11 11:10 AM **Evolving User's of Soil Survey.** Nicholas Koschnick*
- 45-12 11:30 AM **Soil Survey: Beyond the Symposium.** Douglas A. Wysocki*
- 11:45 AM **Discussion**
- 11:55 AM **Adjourn**

SESSION NO. 46—8:00 AM–12:05 PM

MCC, 101 FG, Level 1

Crop Breeding and Genetics: I

C01 Crop Breeding & Genetics

Presider: Georgia Eizenga

- 8:00 AM **Introductory Remarks**
- 46-1 8:05 AM **Genotypic Variation for Normalized Difference Vegetation Index and Its Relationship with Grain Yield in Cowpea Hybrids Under Drought and Well-Watered Conditions.** Dorcas Olubunmi Ibitoye* and Ousmane Boukar
- 46-2 8:20 AM **CIMMYT Breeding Progress for Tolerance to Maize Lethal Necrosis in Eastern Africa.** Michael Olsen*, Biswanath Das, Yoseph Beyene, Lewis Machida, Dan Makumbi, Mosisa Regasa, Manje Gowda, MacDonald Jumbo, Kassa Semagn, George Mahuku, Rumbidzai Matemba Mutasa, Monica Mezzalama, Denise E. Costich, Terence Molnar, Daniel P. Jeffers, James Karanja, Mark Jones, Margaret Redinbaugh and Prasanna B.M.

- 46-3 8:35 AM **Identification of High Throughput SNP Markers for Grain Yield, Yield Components and Wsmv Resistance in Wheat.** Silvano Ocheya*, Chor Tee Tan, Smit Dhakal, Jackie C. Rudd, Guorong Zhang, Qingwu Xue, Amir M.H. Ibrahim, Ravindra N. Devkota, Scott D. Haley, Jianli Chen, Maria Pilar Fuentealba, Shannon Baker, Jason Baker and Shuyu Liu
- 46-4 8:50 AM **Greenseeker to Capture Biomass Accumulation and Grain Filling Dynamics in Wheat Germplasm.** Srirama Krishna Reddy*, Jason Baker, Ravindra N. Devkota and Jackie C. Rudd
- 46-5 9:05 AM **Understanding the Genetic Basis of Resistance to Goss's Bacterial Wilt and Leaf Blight in North American Maize.** Amritpal Singh*, Aaron P. Andersen, Tamra Jackson-Zeims and Aaron J Lorenz
- 46-6 9:20 AM **Haplotype Diversity at a Grain Protein Content QTL Identified in Elite Six-Row and Two-Row Barley Germplasm.** Celeste Marie Falcon* and Kevin Smith
- 46-7 9:35 AM **Genomic Prediction Accuracy of Single-Family Versus Multiple-Family Training Populations in the Soybean Nested Association Mapping Population.** Juan Diego Hernandez Jarquin*, Reka Howard, Brian W. Diers, William Beavis, James Specht, Qijian Song, Perry B. Cregan, Alexander E. Lipka, Patrick J. Brown, Matthew Hudson and Aaron J Lorenz
- 9:50 AM **Break**
- 46-8 10:05 AM **Marker Associations with Nitrogen Use Efficiency Traits in Hard Winter Wheat.** Mary Guttieri*, Katherine Frels, Patrick Byrne, Sarah Grogan, Gina Brown-Guedira, Eduard Akhunov, Peter Baenziger and Brian M. Waters
- 46-9 10:20 AM **Preserving Rice Quality: Fine-Mapping and Introgressing a Fissure Resistance Locus.** Haley Marie Sater*, Karen Ann Kuenzel Moldenhauer, Richard Esten Mason, Shannon R. M. Pinson, Terry J. Siebenmorgen, Virginia Ann Boyett and Eric Grunden
- 46-10 10:35 AM **Predicting Nitrogen Use Traits for Non-Destructive Selection in Winter Wheat Using Proximal Sensing.** Katherine Frels*, Mary Guttieri and Peter Baenziger
- 46-11 10:50 AM **Genomic Prediction and Marker-Assisted Selection for Wheat Resistance to Pre-Harvest Sprouting.** Meng Lin*, Guorong Zhang, Shubing Liu, Shiaoan Chao and Guihua Bai
- 46-12 11:05 AM **Empirical Evaluation for Models, Cross-Validation Schemes, and Population Structure in Genomic Selection.** Xiaoqing Yu*, Tingting Guo, Xianran Li, Xin Li and Jianming Yu
- 46-13 11:20 AM **Dissecting Gene Network Underlying Wheat Kernel Shape and Size and Their Association with Wheat Quality in an Elite Non-Adapted Cross Using a High Density SNP Linkage Map.** Ajay Kumar*, Eder Mantovani, Raed Seetan, Ali Soltani, Morgan Echeverry-Solarte, Senay Simsek, Douglas Doehlert, Mohammed S. Alamri, Elias M. Elias, Shahryar Kianian and Mohamed Mergoum
- 46-14 11:35 AM **USDA's Roadmap for Plant Breeding.** Ann Marie Thro*, Roy Scott, Edward Kaleikau, Mathieu Ngouajio, Paul Heisey, Kelly Day-Rubenstein, David Gwaze, Randy Johnson and John Englert
- 46-15 11:50 AM **Assessment of Genetic Diversity Among Rice Genotypes in Abakaliki, Ebonyi State Nigeria Based on Agro-Morphological Traits.** Ngozi Catherine Oketa*
- 12:05 PM **Adjourn**

SESSION NO. 47—8:00 AM—2:45 PM

MCC, 101 B, Level 1

Soil Biology & Biochemistry: I

SSSA Division: Soil Biology & Biochemistry

Presider: Sheeja George, Lisa Fultz

- 8:00 AM **Introductory Remarks**
- 47-1 8:05 AM **Pasture Degradation Modifies Soil Organic Matter Properties and Biogeochemical Functioning in Tibetan Grasslands.** Sandra Spielvogel*, Per Schleuß, Yakov Kuzyakov and Georg Guggenberger
- 47-2 8:20 AM **Short-Term Impacts of Tillage Practices on Soil Carbon Profiling Under a Dryland Farming System.** Promil Mehra*
- 47-3 8:35 AM **Decomposition of Summer Active Perennial Grass Residues: What Controls It?** Vadakattu V. S. R. Gupta*, Stasia Kroker, Marcus Hicks, phil ward, William Davoren, David Ferris and Rick Llewellyn
- 47-4 8:50 AM **Convergence of Organic Carbon of Soils with Diverse Qualities after a 21-Year Field Bioassay.** Sandra Yanni*, Henry Janzen, Edward G Gregorich, Benjamin Ellert, Francis J. Larney, Barry Olson and Francis Zvomuya
- 47-5 9:05 AM **Quantifying Soil Carbon Levels in Permafrost-Region Soils Using Mid and Near Infrared Spectroscopy.** Francisco J. Calderon*, Julie D. Jastrow, Roser Matamala, R. Michael Miller, Chien-Lu Ping and Gary J Michaelson
- 47-6 9:20 AM **Rhizosphere Priming Effects of Encroaching Woody Species in a Tallgrass Prairie Ecosystem.** Weixin Cheng*, Kelsey Forbush, Gail W. Wilson and John M Blair
- 47-7 9:35 AM **Nitrogen Dynamics and Enzyme Activities of Shrub-Millet Intercropping Systems in the Sahel.** Chelsea DeLay*, Roger Bayala, Ibrahim Diedhiou, Lydie Lardy, Komi Assigbetse and Richard P. Dick
- 9:50 AM **Break**
- 47-8 10:00 AM **Dual Role of Humic Substances As Electron Donors and Shuttles for Dissimilatory Iron Oxide Reduction.** Noah Stern*
- 47-9 10:15 AM **Does the Effect of Earthworms on the Soil Greenhouse Gas Balance Differ Between Farming Systems?** Jan Willem van Groenigen*, Ingrid Lubbers and Cornelis van Groenigen
- 47-10 10:30 AM **Species Differences in Vertical Distribution and Seasonality of Non-Native Earthworm Activity in the Houghton Rhizotron Facility.** Lynette Potvin* and Erik Lilleskov
- 47-11 10:45 AM **Management History, Soil Porosity, and Litter Quality Interact in Regulating Organic Matter Stabilization and Greenhouse Gas Emission.** Ehsan R Toosi*, Jing Yu, Andrey K. Guber, Mark Rivers, Terence Marsh and Alexandra Kravchenko
- 47-12 11:00 AM **Linking Microbial Community Structure and Function within the Acidified Soils of the Palouse.** Tarah S. Sullivan*
- 47-13 11:15 AM **Stratification of Soil Microbial Community in Acidified Soils of No-till Systems Reflects Aluminum Concentrations and Liming Efficiency.** Victoria Barth*, Tarah S. Sullivan, Carol R. McFarland and David R. Huggins
- 47-14 11:30 AM **Identification of Metolachlor Mineralizing Bacteria in Aerobic and Anaerobic Soils Using DNA-Stable Isotope Probing.** Ramdas G Kanissery*, Allana Welsh, Andres Gomez, Lynn Connor, Gerald Sims and Anthony C. Yannarell

11:45 AM **Lunch Break**

- 47-15 12:45 PM **Assessing the Effect of Foliar 13C Glyphosate Application on Rhizosphere Microbial Communities Using Stable Isotope Probing of Phospholipid Fatty Acid Biomarkers.** Nicola Lorenz*, Nathan Lee and Richard P. Dick
- 47-16 1:00 PM **Climate Extremes and the Soil Microbiome.** Taniya Roy Chowdhury*, Eric Bottos, Richard White III, Carrie Nicora, Mary Lipton and Janet Jansson
- 47-17 1:15 PM **Detection of Nitrous Oxide-Producing Fungi in the Environment Using Nirk Gene-Targeting Primers.** Huaihai Chen* and Wei Shi
- 47-18 1:30 PM **Reexamining the Rhizosphere As a Microbial Hotspot Across Tree Species Identity and Diversity, Using a Novel Spatial Extracellular Enzyme Assay.** Jessica Gutknecht*, Francois Buscot and Zhiqin Pei
- 47-19 1:45 PM **A New Process Control to Evaluate DNA Extraction Efficiency in Environment DNA Extraction.** Qian Zhang* and Satoshi Ishii
- 47-20 2:00 PM **Influence of Clay Mineralogy on the Stability of Coprecipitated Dissolved Organic Carbon with Ferric Iron.** Meng-Yang You, Xia Zhu and William R. Horwath*
- 47-21 2:15 PM **Experiences in Integrated Nutrient Management in Chile: Microbial Activity Under Different Scenarios.** Maria Mercedes Martinez*, Rodrigo A. Ortega and Paula Ospina
- 47-22 2:30 PM **Effects of Degraded Water for Irrigation on Soil Microbial Communities.** Abasiofiok M. Ibekwe*
- 2:45 PM **Adjourn**

SESSION NO. 48—8:00 AM—3:20 PM

MCC, L100 D, Lower Level

Ph.D. Graduate Student Oral Competition

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

Presider: Trenton Roberts, Brenda Tubana

- 8:00 AM **Introductory Remarks**
- 48-1 8:05 AM **Corn Growth and Yield Responses to Pre-Plant and in-Season Nitrogen Combinations.** Jeff Rutan* and Kurt Steinke
- 48-2 8:20 AM **Applicability of the Cornstalk Nitrate Test for Furrow-Irrigated Mid-South U.S. Corn Production.** Chester Eugene Greub*, Trenton L. Roberts, Nathan A. Slaton, Jason Kelley, Kevin Lawson and Jarom Davidson
- 48-3 8:35 AM **Urease Inhibitors Effect on Ammonia Volatilization and Corn Grain Yield.** Leonardo M. Bastos* and Richard B. Ferguson
- 48-4 8:50 AM **Ammonia Volatilization of Experimental Urea Fertilizers on Four Different Soils.** Nutifafa Adotey*, Dustin L. Harrell, Manoch Kongchum and Jifeng Li
- 48-5 9:05 AM **Response of New Potato Cultivars Developed for Low Tuber Reducing Sugars to Nitrogen Management.** Na Sun*, Carl Rosen, James E. Crants, Matthew McNearney and Martin Glynn
- 48-6 9:20 AM **Effect of Preplant/Early Irrigation, Nitrogen and Population Rate on Winter Wheat Grain Yield.** Sulochana Dhital*, William R. Raun, Bruno Morandin Figueiredo and Jeremiah Mullock

- 48-7 9:35 AM **Evaluating High Biomass Sorghum Yields and Nitrogen Use Efficiency in Missouri.** Michael J. W. Maw*, James Houx and Felix B. Fritsch
- 9:50 AM **Break**
- 48-8 10:05 AM **Daycent Simulations to Test the Influence of Nitrogen Fertilization in Bioenergy Sorghum Production.** Yong Wang*, Fugen Dou, Keith Paus-tian, Stephen J. Del Grosso and Frank M. Hons
- 48-9 10:20 AM **Nitrogen Supply and Harvest Dates Effects on Nutrient Removal and Biomass Chemical Com-position of Energy Cane.** Marilyn Sebial Dalen*, Samuel Kwakye, Kun Jun Han, Saoli Chanda and Brenda Tubana
- 48-10 10:35 AM **Nutrient Content and Partitioning Patterns in Sugarcane Ratoon.** Jose Marcos Leite*, Ignacio Antonio Ciampitti, Eduardo Mariano, Michele Xavier Vieira Megda and Paulo Cesar Ocheuze Trivelin
- 48-11 10:50 AM **Switchgrass Rhizosphere Microflora Communi-ty Structure and Nutrient Acquisition As a Func-tion of Nitrogen and Cultivar.** Anne E. Sawyer*, Carl J. Rosen, John A. Lamb, Craig C. Sheaffer, Michael Jay Sadowsky and Jessica Gutknecht
- 48-12 11:05 AM **Recovery of 15N By Tillage Radish and Rye Cover Crop in Arkansas.** Kelsey Hoegenauer*, Trenton L. Roberts, Nathan A. Slaton, William Jeremy Ross, Chester Eugene Greub and Jarom Davidson
- 48-13 11:20 AM **Phosphorus Placement and Rate in Reduced Tillage Systems.** Cristie L. Edwards*, Dorivar A. Ruiz Diaz and David B. Mengel
- 48-14 11:35 AM **Trends in Soil Test Phosphorus Dynamics Fol-lowing Long-Term Application of Poultry Litter and Commercial Fertilizers.** Zhixuan Qin*, Amy L. Shober and Shawn Tingle
- 11:50 AM **Lunch Break**
- 48-15 1:00 PM **Critical Trifoliolate Leaf and Petiole Potassium Concentrations for Soybean Beyond the R2 Growth Stage.** Md. Rasel Parvej*, Nathan A. Sla-ton, Trenton L. Roberts, Larry C. Purcell, Russell E. DeLong and Matthew S. Fryer
- 48-16 1:15 PM **Calcium Uptake of Peanut Seeds By Develop-mental Stages.** Rui Yang*, Julie A. Howe, Glen-don Harris and Kris Balkcom
- 48-17 1:30 PM **Understanding Fertilizer Toxicity Symptom De-velopment through High Resolution Imaging.** Isaac Madsen* and William L Pan
- 48-18 1:45 PM **Calibration and Categorization of Plant Avail-able Silicon in Louisiana Agricultural Soils.** Tapasya Babu*, Brenda Tubana, Wooiklee Paye, Brandon White, Payton Dupree, Marilyn Sebial Dalen, Daniel Munoz Forestieri and Flavia Agostinho
- 48-19 2:00 PM **Precise Nitrogen Cycling Under Row Crops with Microbial Husbandry.** Patrick M. Ewing*, Nicho-las R. Jordan, Alwyn Williams and Sheri Huerd
- 2:15 PM **Afternoon Break**
- 48-20 2:30 PM **Double Cropping of Corn Silage Rotations with Winter Cereals As Forage Crop.** Sarah Lyons*, Quirine M. Ketterings, Shona Ort, Gregory God-win, Karl J. Czymmek, Sheryl Swink and Thomas F. Kilcer
- 48-21 2:45 PM **The Effect of Long Term Nitrogen Deposition on the Structure and Function of Soil Microbial Communities.** Corianne Tatariw*, Jean MacRae, Kevin S Simon, Ivan J. Fernandez and Marie-Cecile Gruselle

- 48-22 3:00 PM **The Effect of Nitrogen Release Technologies and Total Nitrogen on Color and Quality of Kentucky Bluegrass.** Julie H. Campbell*, Jason J. Henderson, Thomas F. Morris, Karl Guillard, John C. Inguagiato, Steven Rackliffe, Victoria H. Wallace and Anna Legrand
- 3:15 PM **Concluding Remarks**
- 3:20 AM **Adjourn**

SESSION NO. 49—8:00 AM—4:35 PM

MCC, L100 B, Lower Level

M.S. Graduate Student Oral Competition

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutri-ent Management & Soil & Plant Analysis

President: Don Flaten, Amy Shober, Jason Mowrer, Aaron Sindelar

- 8:00 AM **Introductory Remarks**
- 49-1 8:05 AM **Impact of Silicon Fertilizer on the Yield of Spring Wheat Under Drought Conditions.** Sa-roop Sandhu*, Ibrahim Mostafa, Sandeep Kumar and Sunish Sehgal
- 49-2 8:20 AM **Silicon Fertilization in Rice: Establishment of Critical Silicon Level and Its Impact on Availability of Nutrients in Soils of Louisiana.** Wooiklee Paye*, Brenda Tubana, Tapasya Babu and Dustin L. Harrell
- 49-3 8:35 AM **Evaluation of Absorption and Uptake of Soil- and Foliar-Applied Silicon Fertilizer in Rice.** Flavia Bastos Agostinho*, Lawrence Datnoff, Jean Rabasse, Murilo Martins and Brenda Tubana
- 49-4 8:50 AM **Evaluation of Zinc Fertilization for the Main Crops in Kansas Using New and Historic Data.** Miriam Gutierrez* and Dorivar A. Ruiz Diaz
- 49-5 9:05 AM **Nutrient Uptake and Partitioning in Current Kansas Wheat Varieties.** Tyler Gardner* and Dorivar A. Ruiz Diaz
- 49-6 9:20 AM **Phosphorus Distribution with Depth Across Three Land Managements Under Dairy Waste Effluent Application.** Amber Hardy* and Donald G. McGahan
- 49-7 9:35 AM **Using Electrical Resistivity Imaging to Char-acterize Subsurface Phosphorus Movement to Drainage Ditches.** Kathryn Clark*, Amy L. Shober, Anthony R. Buda and Judy Robinson
- 49-8 9:50 AM **Corn and Soybean Response to No-till and Strip-till with Surface and Subsurface Fertiliza-tion.** Alexandre Tonon Rosa* and Dorivar A. Ruiz Diaz
- 10:05 AM **Break**
- 49-9 10:20 AM **Phosphorus Management for Soybean Pro-duction in Manitoba: Effects of Soil P and P Fertilization on Seed Yield and Plant Stand.** Gustavo Bardella*, Don Flaten, John R. Heard, Cynthia A. Grant, Yvonne Lawley, Dennis Lange and Ramona Mohr
- 49-10 10:35 AM **Rapid Assessment of Soil Quality in Illinois Using Near- and Mid-Infrared Spectroscopy.** Yushu Xia*, Kaiyu Guan and Michelle Wander
- 49-11 10:50 AM **Impact of Manure Application on Soil Health and Crop Yield Under Corn-Soybean Rotation in South Dakota.** Ekrem Ozlu*, Sandeep Kumar, Anthony Bly, Sara Berg, Peter J. Sexton and Ron H. Gelderman

- 49-12 11:05 AM **Synchronizing of the Mineralization of Cover Crops with Corn Growth Stages.** Michael D. Ruffatti*, Richard T. Roth, William T. Deppe, Corey Lacey and Shalamar D. Armstrong
- 49-13 11:20 AM **Nitrogen Use Efficiency and Stress in Corn in a Cover-Crop Based Cropping System.** Brian Davis*, Steven Mirsky, Brian A. Needelman, Michel A. Cavigelli, John Spargo and Hanna Pofenbarger
- 49-14 11:35 AM **Determining Effects of Multiple Tannin Manure Applications on Dairy Forages and Soil.** Claire A Campbell*, Matthew D. Ruark and J. Mark Powell
- 11:50 AM **Lunch Break**
- 49-15 1:00 PM **Effects of in-Season Fertilization Strategies on Nitrogen Use Efficiency and Yield of Irrigated Corn.** Alexander Soroka* and Amy L. Shober
- 49-16 1:15 PM **Optimizing Polymer Coated Urea Applications for Kentucky Bluegrass.** Jessica Buss*, Bryan G. Hopkins and James H Gish
- 49-17 1:30 PM **Greater Recovery of Fertilizer Nitrate Vs Ammonium Sources in Agricultural Soils of Central Montana.** Carlos M. Romero*, Richard E. Engel, Chengci Chen and Roseann Wallander
- 49-18 1:45 PM **Nitrogen Mineralization in Organic Rice Fields with Relation to Cover Crop and Soil Amendment.** Mariana Valdez Velarca*, Fugen Dou and Terry J. Gentry
- 49-19 2:00 PM **Validation of Soil-Test Based Phosphorus and Potassium Fertilizer Recommendations for Soybean.** Matthew S. Fryer*, Nathan A. Slaton, Trenton L. Roberts, Richard J. Norman and Russell E. DeLong
- 49-20 2:15 PM **Effect of Nitrogen Management on Nitrate Leaching and Maize Nitrogen Use Efficiency on Highly Productive Irrigated Sandy Soils.** Anne Struffert*, Fabian G. Fernandez, John A. Lamb and John Carl Rubin
- 49-21 2:30 PM **Winter Cover Crops Impact on the Distribution of Soil Inorganic Nitrogen and Subsequent Crop Uptake and Yield Following Fall Applied Anhydrous Ammonium.** William T. Deppe*, Michael D. Ruffatti, Richard T. Roth, Corey Lacey and Shalamar D. Armstrong
- 49-22 2:45 PM **Modifying Nitrogen Rate and Timing Applications in Response to Winter Wheat Planting Date.** Christopher Bauer* and Kurt Steinke
- 49-23 3:00 PM **Microbial Community Composition and Diversity As Affected By Cover Crops and Soil Amendments.** Mike Swoish* and Kurt Steinke
- 3:15 PM **Afternoon Break**
- 49-24 3:30 PM **Optimum Preplant Nitrogen Rates in Corn.** Ethan Driver*
- 49-25 3:45 PM **Another Step Forward: Validation of N-Star on Rice in Clay Soils in Arkansas.** Jarom Davidson*, Trenton L. Roberts, Jarrod T Hardke, Nathan A. Slaton, Richard J. Norman, Anthony Fulford and Chester Eugene Greub
- 49-26 4:00 PM **Soybean Biomass and Yield Response to Nitrogen Additions.** Justin McCoy*, Bobby R. Golden, Jason Bond, Michael S. Cox and Don Cook
- 49-27 4:15 PM **Estimation of Energy Cane Lignocellulosic Composition Using Near Infrared Spectroscopy.** Samuel Kwakye*, Marilyn Sebial Dalen, Kun Jun Han and Brenda Tubana
- 4:30 PM **Concluding Remarks**
- 4:35 PM **Adjourn**

SESSION NO. 50—8:20 AM—11:40 AM

MCC, 103 A, Level 1

Wetland Soils: I (includes student competition)

SSSA Division: Wetland Soils

Presider: Bruce Vasilas

- 8:20 AM **Introductory Remarks**
- 50-1 8:25 AM **Rhizosphere Methane Oxidation in Thermokarst Bogs in the Interior of Alaska.** Colby J. Moorberg* and Rebecca B Neumann
- 50-2 8:40 AM **GHG Emissions from a Mountain Peatland Under a Changing Climate a Microcosm Study.** Xiaoyue Wang*, Angela K. Bedard-Haughn and Cherie Westbrook
- 50-3 8:55 AM **Methane Flux from an Active Delta within the Mississippi River Coastal Deltaic Plain.** John R. White*, Ronald D. DeLaune and Dongqi Wang
- 50-4 9:10 AM **Phosphorus Speciation and Sedimentary Phosphorus Release from the Gulf of Mexico Sediments: Implication for Hypoxia.** John R. White*, Puspa L, Adhikari, Nhan T Nguyen and Kanchan Maiti
- 50-5 9:25 AM **Impacts of Long-Term Oiling from the 2010 Deep Water Horizon Oil Spill on Salt Marsh Soil Denitrification.** Brian Levine*
- 50-6 9:40 AM **Evaluating Nitrate Reduction in a Hydrologically Restored Bottomland Hardwood Forest: Is Restoration Working?** Nia Hurst*, John R. White and Joseph Baustian
- 9:55 AM **Break**
- 50-7 10:10 AM **Nutrient and Trace Element Uptake By Cattail (*Typha latifolia*) during in Situ Phytoremediation of Biosolids in an End-of-Life Municipal Lagoon.** Nicholson Ngoni Jeke*, Francis Zvomuya and Lisette Ross
- 50-8 10:25 AM **Effective Attenuation of Nutrients in Mixed Wastewaters Using Mineral-Based Waste Materials As Reactive Substrate in Constructed Wetlands.** Zheng Yuan, Shasha Fu, Xin Fa Xu and Laura A. Wendling*
- 50-9 10:40 AM **Modeling of Soil Water and Salt Dynamics with Shallow Water Table and Its Effects on Root Water Uptake in Heihe Arid Wetland, China.** Ying Zhao*, Huijie Li and Bing Cheng Si
- 50-10 10:55 AM **Does Drainage Duration Affect Wetland and Ditch Soil Properties? a Case Study from Southeast Saskatchewan.** Angela K. Bedard-Haughn*, Robin Brown and Zhidan Zhang
- 50-11 11:10 AM **Development and Application of Automated Wetland Delineation Data Forms Improves Hydric Soil Identification.** Jacob Berkowitz*
- 11:25 AM **Concluding Remarks**
- 11:40 AM **Adjourn**

SESSION NO. 51—8:30 AM—10:00 AM

Hilton, Duluth Room, 3rd Floor

SASES Club Presidents' Round Table

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 52—8:30 AM—11:20 AM

MCC, M100 B, Mezzanine Level

Chemical Processes Responsible for Carbon Fluxes: I

SSSA Division: Soil Chemistry

Presider: Hero Gollany, Ganga Hettiarachchi

- 8:30 AM **Introductory Remarks**
- 52-1 8:35 AM **Impact of Temperature and Adsorptive Fractionation on Transport of DOC in Iron-Rich Porous Media.** Thomas Borch* and Ellen Daugherty
- 52-2 8:50 AM **Decomposition and Sequestration of Organic Matter in Fine-Sized Fractions Modified By Clay Mineral Composition.** Ingrid Koegel-Knabner*, Geertje Johanna Pronk, Cordula Vogel and Katja Heister
- 52-3 9:05 AM **Organic Matter Stabilization: Mechanistic Insights at the Molecular and Nanometer Length Scales.** Christina J. Newcomb*, Nikolla P. Qafoku, Jay W. Grate, Ryan Hufschmid, Nigel D. Browning and James J. De Yoreo
- 52-4 9:20 AM **Description and Quantification of the Associations Between Soil Organic Matter and Clay-Sized Minerals in a Mollisol Using Stxm High Resolution Chemical Mapping.** Sofia Oufqir*, James Dynes, Brandy Marie Toner and Paul R. Bloom
- 52-5 9:35 AM **The Effects of Temperature, Moisture, and Management on Soil Microbial Properties in Two Different Soils.** Dorothy Menefee*, Pavithra Sajeewani Pitumpe Arachchige, Ganga M. Hettiarachchi and Charles W. Rice
- 52-6 9:50 AM **Characteristics of Free and Mineral Associated Organic Matter in Soils with Contrasting Mineralogy.** Balwant Singh*, Cliff Johnston, Donald L Sparks and Sabina Yeasmin
- 10:05 AM **Break**
- 52-7 10:20 AM **Understanding of Coupled Physicochemical Mechanisms Controlling Soil Carbon Storage and Stabilization.** Ganga M. Hettiarachchi*, Pavithra Sajeewani Pitumpe Arachchige, Leila Maurmann, Dorothy Menefee, Charles W. Rice, Chithra Karunakaran, Jay Dynes and Tom Regier
- 52-8 10:35 AM **pH-Induced Mobilization of Carbon in Soil Treated with Waste Streams.** Nanthi S. Bolan*
- 52-9 10:50 AM **Chemical Force Spectroscopy Evidence Supporting the Layer-By-Layer Model of Organic Matter Binding to Iron (oxy)Hydroxide Mineral Surfaces.** Tsutomu Ohno*, Alexander W. Chass, Steven Higgins, Aria Amirbahman, Thomas Parr and Nadir Yildirim
- 52-10 11:05 AM **Impacts of Erosion Rates on Organic Carbon Inventories and Carbon-Mineral Interactions in Steep Mountains.** Xiang Wang*, Kyungsoo Yoo, Simon Marius Mudd, Beth Weinman and Jessica Gutknecht
- 11:20 AM **Adjourn**

SESSION NO. 53—8:30 AM—11:35 AM

MCC, 101 A, Level 1

Robert F Barnes Graduate Student Oral Contest, Ph.D.

C06 Forage and Grazinglands

Presider: Twain Butler

- 8:30 AM **Introductory Remarks**

- 53-1 8:35 AM **Development of Remote Sensing Tools for Alfalfa Management.** Reagan L. Noland*, M. Scott Wells and Craig C. Sheaffer
- 53-2 8:50 AM **Effects of Field Design Factors and Spatial Variability on Forage Yield Estimation.** Raghuvver Sripathi*, Michael Casler, Patrick Conaghan and Dermot Grogan
- 53-3 9:05 AM **Enhanced Efficiency Nitrogen Fertilizer Formulation Effect on Pasture Productivity: Forage Yield, Quality, and Clover Persistence.** Kathryn M. Payne*, Ben M. Goff, S. Ray Smith Jr., John H. Grove, Mark S. Coyne and Jeff Lehmkuhler
- 53-4 9:20 AM **Yield, Preference, and Forage Nutritive Value of Fall-Planted Annual Grasses Under Horse Grazing at Two Maturities.** Amanda M. Grev*, Craig C. Sheaffer, Devan N. Catalano, Michelle L. Schultz and Krishona L. Martinson
- 53-5 9:35 AM **Effect of Irrigation and Nitrogen Rates on Yield and Quality of Corn for Silage.** Abdelaziz Nilahyane*, Anowarul M. Islam, Axel Garcia y Garcia and Abdel O. Mesbah
- 53-6 9:50 AM **Polymorphisms at DRD2 Gene Affect Physiological Responses in Heifers Fed Tall Fescue Silage.** Brett T. Jones*, Robert L. Kallenbach and Cheryl J. Kojima
- 10:05 AM **Break**
- 53-7 10:20 AM **Association of Phenotypic Traits with Ploidy and Genome Size in Annual Ryegrass.** Esteban Fernando Rios*, Patricio Munoz and Kevin E. Kenworthy
- 53-8 10:35 AM **Legume Proportion in Mixed-Species Swards Affects Litter Decomposition and Nutrient Release Rates.** Marta Moura Kohmann*, Lynn E. Sollenberger, Jose Carlos Batista Dubeux Jr. and Leonardo S. B. Moreno
- 53-9 10:50 AM **Inter-Annual Carbon, Evapotranspiration and Sensible Heat Flux Dynamics of Old World Bluestem in the Southern Great Plains.** Sumit Sharma*, Nithya Rajan and Stephen J. Maas
- 53-10 11:05 AM **Forage Characteristics of Bermudagrass Pastures Mixed with Pinta Peanut and Grazed at Different Stubble Heights.** Joao M.D. Dalmazo Sanchez*, Joao M.B. Vendramini, Maria Lucia A. Silveira, Lynn E. Sollenberger, Jose Carlos Batista Dubeux Jr., Phillip Lancaster, Frank Kuwahara, Ulysses Cecato, James K. Yarbrough and Vinicius C. Gomes
- 53-11 11:20 AM **Effect of Drought on Browse from Three Oak Species.** Caitlyn E. Cooper*, James P. Muir, Georgianne W. Moore and Jason G. Vogel
- 11:35 AM **Adjourn**

SESSION NO. 54—8:55 AM—12:00 PM

MCC, M100 GH, Mezzanine Level

C-2/C-4 Graduate Student Oral Competition - I

C02 Crop Physiology and Metabolism

Presider: P.V. Vara Prasad

- 8:55 AM **Introductory Remarks**
- 54-1 9:00 AM **Grain Sorghum Response to Water Supply and Environment.** Jonathan Broeckelman*
- 54-2 9:15 AM **Phenology of Adapted and Non-Adapted Tropical Corn Genotypes in Central Iowa.** Pedro A. Infante Posada*, Kenneth J. Moore and Sotiris V Archontoulis

- 54-3 9:30 AM **Sorghum Whole-Plant Responses to Pre-Flowering Drought Stress.** Sarah B. Miller*, Marie F.S. Turner, Jay S. Kirkwood, Corey D. Broeckling, Jessica E. Prenni and Courtney E. Jahn
- 54-4 9:45 AM **Molecular Mapping of Drought Tolerance Genes in Cowpea (*Vigna unguiculata* L. Walp).** Laura Masor*, Dirk Hays, Brijesh Angira, Hongbin Zhang, Meiping Zhang, Chantel Scheuring, Yang Zhang and Bir B. Singh
- 54-5 10:00 AM **Net Carbon and Evapotranspiration Dynamics of Irrigated Cotton Compared to Dryland Cotton.** Sumit Sharma*, Nithya Rajan and Stephen J. Maas
- 54-6 10:15 AM **Stomatal Closure Stimulated By Inoculated Symbiotic Bacteria Increases Water Use Efficiency of Rice Plants.** Hyungmin Tony Rho*, Sharon Lafferty Doty and Soo-Hyung Kim
- 10:30 AM **Break**
- 54-7 10:45 AM **Cotton's Biochemical Response to a Heat and Water Stress Combination.** Toby R. FitzSimons*, Dimitra A. Loka, Wei Hu and Derrick M. Oosterhuis
- 54-8 11:00 AM **Physiology and Associated Metabolic Expression in Soft Wheat Genotypes Under Terminal Heat Stress.** Kayla Thomason*, John E. Erickson, MD Babar and Masum Akond
- 54-9 11:15 AM **Timing of Episodic Drought on West Texas Cotton Cultivars.** Curtis Schaefer* and Glen Lorin Ritchie
- 54-10 11:30 AM **Physio-Morphological Analysis of Soybean Lines Showing the Extremely High Photosynthetic Capacity.** Kazuma Sakoda*, Yu Tanaka, Tatsuhiko Shiraiwa and Randall Nelson
- 54-11 11:45 AM **Effect of Heat Stress and Its Timing on Reproductive Organs and Seed Set in Field Pea.** Yunfei Jiang*, Thomas D. Warkentin, Arthur Davis, Rachid Lahlali, Chithra Karunakaran and Rosalind A. Bueckert
- 12:00 PM **Adjourn**

SESSION NO. 55—8:55 AM—3:00 PM

MCC, M100 IJ, Mezzanine Level

Crop Ecology, Management & Quality: I

C03 Crop Ecology, Management & Quality

Presider: Jeffrey Coulter

- 8:55 AM **Introductory Remarks**
- 55-1 9:00 AM **Nitrogen Fertilization Increases Productivity and Stability but Not Diversity in Prairies Managed for Bioenergy.** Meghann Jarchow* and Matt Liebman
- 55-2 9:15 AM **Integrative Perennial Cropping Systems to Produce Food, Bioenergy, and Ecosystem Services.** James O. Eckberg, Gregg A. Johnson*, George Heimpel, Joe M. Kaser, Milan Plecas, Julie A. Peterson and Donald L. Wyse
- 55-3 9:30 AM **Using Planting Dates to Balance Yield and Pollinator Friendliness of Oilseed Crops.** Carrie A Eberle*, Matthew Thom and Frank Forcella
- 55-4 9:45 AM **Crop Rotation Effects on Cropping System Resiliency.** Bill Deen*, Amelie CM Gaudin and David Hooker
- 55-5 10:00 AM **Long-Term Impacts of Cropping Systems and Landscape Positions on Grain Crop Production on Claypan Soils.** Matt A. Yost*, Newell R. Kitchen, Kenneth A. Sudduth, E. John Sadler, Claire Baffaut, Matt Volkmann and Scott T Drummond

- 55-6 10:15 AM **Cropping System Management: Irrigation, Tillage and Crop Rotation in a Semi-Arid Climate.** Martha R. Zwonitzer*, Katie L Rothlisberger-Lewis and J. Wayne Keeling
- 10:30 AM **Break**
- 55-7 10:45 AM **55 Years of Crop Residue Management.** Robert N. Klein*
- 55-8 11:00 AM **Changes in Post-Silking N Accumulation and Allocation in Maize over Time: A Review.** Sarah M. Brooks* and Tony J. Vyn
- 55-9 11:15 AM **Evaluation of Commercial Drought Tolerant Corn Hybrids for the Humid MID-South.** Austin Scott*, Angela McClure, Christopher Boyer and Dennis R. West
- 55-10 11:30 AM **Quantifying the Effects of Planting Density in Maize: A Structural Engineering Investigation.** Daniel Robertson*, Douglas Cook and Margaret Julias
- 55-11 11:45 AM **Field-Scale Studies Show Significant Location X Seeding Depth Interactions for Corn and Soybean Populations and Yields.** William J. Cox*
- 12:00 PM **Lunch Break**
- 55-12 1:00 PM **The Influence of Plant Population on Peanut Varieties.** Joseph Oakes* and Maria Balota
- 55-13 1:15 PM **Grain Sorghum Crop Responses to Diversity in Rooting Architecture Among Plants Compared with Contrasting Monocultures and Interactions with Nitrogen.** Curtis Adams* and John E. Erickson
- 55-14 1:30 PM **Field Study and Life History Analysis Monitoring the Sugarcane Aphid, *Melanaphis Sacchari*, on Various Sorghum Hybrids.** Devin Tillman*
- 55-15 1:45 PM **Source and Placement of Fertilizer Affects Cadmium Accumulation in Durum Wheat Cultivars.** Shana Forster*, Joel Ransom and John Rickertsen
- 55-16 2:00 PM **Stripper Header Microclimate Alteration.** Lauren Port* and Frank L. Young
- 55-17 2:15 PM **Estimating Pod Drop in Canola.** Andrea Cavaleri*, Steve Shirtliffe and Robert H. Gulden
- 55-18 2:30 PM **Development of NIRS Calibrations for Feed, Food and Malting Quality of Hulless Barley.** Patricia E. Juskiw*, Joseph M. Nyachiro, Flavio Capettini, Lori Oatway, Marta S. Izydorczyk and Aaron L. MacLeod
- 55-19 2:45 PM **A Long-Term Look at Russet Burbank Potato Storage.** Yi Wang*, Tina L. Brandt and Nora Olsen
- 3:00 PM **Adjourn**

SESSION NO. 56—9:00 AM—10:30 AM

MCC, L100 F, Lower Level

Negotiation Strategies for Early Career Scientists

ACS530 Early Career Members

Presider: Dave Jensen

SESSION NO. 57—9:30 AM–12:00 PM

MCC, Auditorium Main, Level 1

**Symposium—ASA-CSSA-SSSA-ESA Plenary:
Getting More from Data: Science for
Sustainable Solutions**

Special Sessions

- 57-1 9:30 AM **Opening Comments and Session Objectives.** Sylvie M. Brouder*
- 57-2 9:40 AM **Data Lessons from Medicine.** Kay Dickersin*
- 57-3 10:20 AM **Open Science for Sustainable Solutions.** Bill Michener*
- 57-4 10:50 AM **Data Stewardship and Harmonization for Sustainable Solutions.** Cynthia Rosenzweig*
- 57-5 11:20 AM **Panel Discussion and Q/A with Audience.** Jeffrey J. Volenec*
- 57-6 11:50 AM **The Way Forward for the Week and Beyond.** Paul E. Fixen*
- 12:00 PM **Adjourn**

SESSION NO. 58—9:30 AM–12:00 PM

MCC, 102 E, Level 1

**Reducing Nitrogen Loss through Subsurface
Drainage: Practices, Efficiencies and Impacts: I**

ASA Section: Environmental Quality

Presider: Gary Feyereisen

- 9:30 AM **Introductory Remarks**
- 58-1 9:35 AM **Reactive Transport Modeling of Nitrogen Fate in a Structured Clay Loam Subject to Liquid Swine Manure Application: Implications of Tile Drainage Management.** Syed Hussain*, David Lapen, Steven Frey, Natalie Gottschall, David Blowes and Carol Ptacek
- 58-2 9:50 AM **Evaluation of Drainmod Nii and SWAT in Simulating Subsurface Drainage and Nitrate Losses in Minnesota.** David J. Mulla and Grace Wilson*
- 58-3 10:05 AM **How Efficiently Do Corn- and Soybean-Based Cropping Systems Use Water? a Systems Modeling Analysis.** Ranae Dietzel*, Matt Liebman, Robert P. Ewing, Matthew J. Helmers, Robert Horton and Sotiris V Archontoulis
- 58-4 10:20 AM **Clay County Drainage Site: Field Scale Drainage Research in the Minnesota Red River Valley.** Stefan Bischof*
- 58-5 10:35 AM **Using Unique Carbon Source Combinations to Increase Nitrate and Phosphate Removal Rates in Bioreactors.** Marta Roser*, Gary W. Feyereisen, David Mulla, Kurt A. Spokas and Jessica Gutknecht
- 10:50 AM **Break**
- 58-6 11:00 AM **Woodchip Properties after Four Years in a Denitrification Bed.** Ehsan Ghane* and Gary W. Feyereisen
- 58-7 11:15 AM **Greenhouse Gas Emissions from Two Saturated Riparian Buffers Located in Central Iowa.** Morgan P. Davis*, Thomas M. Iserhart, Dan B. Jaynes, Timothy Parkin, Kirsten Hofmockel and Tyler A. Groh
- 58-8 11:30 AM **Tile Water Nitrogen Reduction in a Constructed Wetland and Wetland Mesocosms in Southern Minnesota.** Brad Gordon*, Christian Lenhart, Dean A. Current, Heidi Peterson, Nikol Ross and Joshua D. Gamble
- 58-9 11:45 AM **Improving Denitrifying Bioreactor Performance By Adding a Post-Bed Processing Chamber.** Gary W. Feyereisen*, Laura E. Christianson, Thomas B. Moorman and Rodney Venterea
- 12:00 PM **Adjourn**

SESSION NO. 59—9:30 AM–4:00 PM

MCC, L100 C, Lower Level

Soil Fertility & Plant Nutrition: I

SSSA Division: Soil Fertility & Plant Nutrition

- 9:30 AM **Introductory Remarks**
- 59-1 9:35 AM **Looking for Sustainability: Long-Term Fertilization in the Pampas of Argentina.** Fernando O. Garcia*, Miguel Boxler, Adrian A. Correndo, Santiago Gallo, Matias Salinas, Ricardo Pozzi and Nahuel I. Reussi Calvo
- 59-2 9:50 AM **Determining Relationships and Patterns in the Nutrisolutions Plant Tissue Database Using Multivariate Analytics.** Stephanie Wedryk*, Sebastien Preys, Robert H. Beck, Jonathon Zuk, Mark Don Heineman, Catherine White and Randall E. Brown
- 59-3 10:05 AM **Soil Micronutrients and Phosphorus Stratification As Affected By Long-Term Tillage and Nitrogen Fertilization.** Augustine K Obour*, Johnathon D. Holman and Phillip W. Stahlman
- 59-4 10:20 AM **Soil and Plant Minerals Affected By Natural and Induced Straighthead in Susceptible and Resistant Rice Varieties.** Sixte Ntamatungiro*
- 10:35 AM **Break**
- 59-5 10:50 AM **Effect of Nutrient Management on Nitrogen Utilization of Rice Panicle Nitrogen Fertilizer Applied to Rice and Succeeding Wheat Crops in a Rice-Wheat Rotation System.** Ganghua Li*, Yanfeng Ding, Shaohua Wang, Zhenghui Liu, She Tang, Chengqiang Ding and Lin Chen
- 59-6 11:05 AM **Response of Raphia Hookeri to Nitrogen and Potassium Fertilizer in Fresh Water Swamp Environment at Onuebum, Nigeria.** Joseph S. Ogeh*
- 59-7 11:20 AM **Revising Fertilizer and INTER ROW Spacing Recommendations for Maize in the LAKE Albert Crescent ZONE of Uganda.** Beatrice Sadina*
- 59-8 11:35 AM **Nutrient Requirement of Camelina (Camelina sativa L.) As Bioenergy Feedstock.** Yesuf Assen Mohammed*, Chengci Chen and Reza Keshavarz Afshar
- 59-9 11:50 AM **Impacts of Silicate Application on Growth and Yield of Wheat (Triticum aestivum L.) Under Salt Stress Conditions.** Mostafa A. Ibrahim*, Abdelrahman M Merwad and Elsayed A Elnaka
- 12:05 PM **Lunch Break**
- 59-10 1:00 PM **Effect of Gypsum, Sugar Factory Lime and Molasses on Soil Characteristics and Productivity of Sugar Beet (Beta vulgaris L.) Grown on Saline-Sodic Soils of Nile North Delta.** Hassan Ragab El-Ramady*, Megahed Mohamed Amer and Ahmed Saad El-Henawy
- 59-11 1:15 PM **Maize Yield Response to Nitrogen and Phosphorus Fertilizers Application Rates on Plinthic Acrisol and Gleyic Plinthic Acrisol in Ghana.** Chinyere Blessing Okebalama*, Ebenezer Yeboah Safo, Edward Yeboah, Robert Clement Abaidoo and Vincent Logah
- 59-12 1:30 PM **Effect of Algae Extract and Compost Application on Maize (Zea mays L.) Yield Under Low Quality of Irrigation Water in North Delta of Egypt.** Hassan Ragab El-Ramady*, Megahed Mohamed Amer, Mahmoud Mohamed Aiad and Sahar Mohamed Rashid

- 59-13 1:45 PM **Gypsum As a Potent Salinity Agent Geochemical Realization.** Moshe Shenker*
- 59-14 2:00 PM **Effects of Different Levels of Poultry Manure on the Growth and YIELD of Okra (*Abelmoschus esculentus* Monech) in Ikorodu AGRO-Ecological ZONE of Nigeria.** Kehinde Oseni Sanni*, Kolawole Gbemavo Godonu and M. O. Animashaun
- 2:15 PM **Afternoon break**
- 59-15 2:30 PM **Three Years of Corn and Soybean after Gypsum and Poultry Litter Amendment of an Acid Fragipan Soil.** John H. Grove* and Edwin L. Ritchey
- 59-16 2:45 PM **Agronomic Effectiveness of Granular NP Fertilizers Containing Elemental Sulfur with/without Ammonium Sulfate: A Review.** Sen H Chien*, Luiz Teixeira, Heitor Cantarella, George W. Rehm, Cynthia Grant and Maria Mercedes Gearhart
- 59-17 3:00 PM **Corn Response to Sulfur in Illinois.** Apurba K Sutradhar* and Fabian G. Fernandez
- 59-18 3:15 PM **Effects of Nutrient Sources on the Growth and Yield of Cucumber (*Cucumis Sativus*) and on Soil Properties in Ikorodu Agro-Ecological Zone.** Kehinde Oseni Sanni*, Babatunde Sunday Ewulo, Kolawole Gbemavo Godonu and Jacobs Mobolade Adesina
- 59-19 3:30 PM **Influence of Humic Substances on Soil and Plant Health.** Mir-Mohammad Seyedbagheri*
- 59-20 3:45 PM **Effects of Biochar, Phosphorus Fertilizer and Poultry Manure on Cowpea (*Vigna unguiculata*) Growth, YIELD and Selected Soil Properties.** Jude Odhiambo* and Siphwiwe Gloria Lusiba
- 4:00 PM **Adjourn**

SESSION NO. 60—9:45 AM—10:20 AM

MCC, 102 D, Level 1

Sensor-Based Nutrient Management Graduate Student Oral Competition

ASA Section: Agronomic Production Systems

Presider: David Franzen

- 9:45 AM **Introductory Remarks**
- 60-1 9:50 AM **A Bacterial Biosensor to Measure Early Season Nitrogen Bioavailability in Cereal Crops.** Travis Luc Goron*, Bill Deen, Greg A. Stewart and Manish Raizada
- 60-2 10:05 AM **Using Hand Held Optical Sensors to Enhance Grain Yield and NUE in Winter Wheat.** Ashley Lorence*, David B. Mengel and Antonio Ray Asebedo
- 10:20 AM **Adjourn**

SESSION NO. 61—10:00 AM—11:00 AM

MCC, 102 F, Level 1

Business Meeting—By-product Gypsum Uses in Agriculture Community

ASA Section: Environmental Quality

*Presider: Mark Reiter***SESSION NO. 62—10:00 AM—12:00 PM**

Hilton, Minneapolis Ballroom C, Third Floor

CCA Career Accelerator Round Table

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 63—10:00 AM—12:00 PM

Hilton, Symphony Ballroom I, 2nd Floor

Grad School Workshop for Undergrads

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 64—10:00 AM—12:15 PM

MCC, 101 C, Level 1

General Organic Management Systems: I

ASA Section: Agronomic Production Systems

- 10:00 AM **Introductory Remarks**
- 64-1 10:05 AM **Agroecology and Healthy Soils: How Much Are We Investing?** Marcia DeLonge*, Albie Miles and Liz Carlisle
- 64-2 10:20 AM **Soil Biology and Yield Trends over 7 Yrs of Organic Reduced till Management in Wisconsin.** Erin Silva*
- 64-3 10:35 AM **Cover Crop Mixture Proportion and Starter Fertilizer Effects on Weed Competition and Yield in Organic Rotational No-till Maize Production.** Rachel A. Atwell*, Steven Mirsky, Hanna Poffenbarger and S. Chris Reberg-Horton
- 64-4 10:50 AM **Soil Health Under No-till Termination of Green Manure in an Organic Grain Rotation.** Carolyn Marshall* and Derek H. Lynch
- 64-5 11:05 AM **Use of Laboratory Incubation Techniques to Estimate GHG Footprints from Clean and No-Tillage Organic Agroecosystems.** Arnab Bhowmik*, Ann-Marie Fortuna*, Larry J. Cihacek and Patrick M. Carr
- 64-6 11:20 AM **Effects of Organic No-till and Winter Cover Crops on Soil Health and Yield on a Claypan Soil.** Kerry M. Clark*, Dara L. Boardman, Timothy M. Reinbott, Robert J. Kremer and Jill Staples
- 64-7 11:35 AM **Continuous Zero-till Organic Wheat Production: Defining the Limits.** Patrick M. Carr*, Greta G. Gramig and Samantha Hogstad
- 64-8 11:50 AM **Effects of Reduced Tillage on Growth, Yield and Fruit Quality of Organic Eggplant.** Guihua Chen*, Amanda L. Buchanan, Lauren Kolb, Ceruti R.R. Hooks and Ray Weil
- 12:05 PM **Discussion**
- 12:15 PM **Adjourn**

SESSION NO. 65—10:00 AM—3:00 PM

MCC, 102 A, Level 1

Applied Soybean Research: I (includes graduate student oral competition)*Sponsored by Winfield/Land O' Lakes*

ASA Section: Agronomic Production Systems

Presider: Nathan Mueller, Shaun Casteel

- 10:00 AM **Introductory Remarks**
- 65-1 10:05 AM **Potential Pathogenicity of Pin Nematode on Soybean.** Katharine Ankrom*, Laura Lindsey, Terry Niblack, Steven Kent Harrison and Timothy Zak Ralston
- 65-2 10:20 AM **Wheat Residue Management for Soybean Production on the Northern Frontier.** Greg Bartley* and Yvonne Lawley
- 65-3 10:35 AM **Determining Yield Limiting Factors in Ohio Soybean Production.** Aaron Brooker*, Laura Lindsey, Steven Culman, Peter R. Thomison and Sakthi Kumaran Subburayalu

ENVIRONMENTAL QUALITY — SESSION NO. 66

- 65-5 10:50 AM **Soybean Yield Response to Natural Soil Salinity Gradients in Richland County, North Dakota.** Kirsten Butcher*, Abbey Foster Wick, Tom DeSutter, Jason Harmon and Deirdre Prischmann-Voldseth
- 65-6 11:05 AM **Response of Soybean Varieties to Manganese Foliar Fertilizer Application.** Sin Joe Ng*, Laura Lindsey, James D. Bethel and John Grusenmeyer
- 65-7 11:20 AM **Soybean Planting Dates and Plant Populations at the Northern Frontier.** Cassandra Tkachuk*, Yvonne Lawley and Michael Ostlie
- 11:35 AM **Lunch Break**
- 65-4 12:45 PM **A Combination of Classic and New Technologies to Map and Fine Map Aphid Resistance in Soybean.** Wenyan Du* and Dechun Wang
- 65-8 1:00 PM **Tillage and Rye Cover Crop Effect on Infiltration and Irrigation Application Efficiency in the Mid-South.** Corey Bryant* and L. Jason Krutz
- 65-9 1:15 PM **Persistence, Infectiveness, and Effectiveness of *Bradyrhizobium Japonicum* in Soybeans (*Glycine max* L.).** Heather L. Dose*, Ann-Marie Fortuna, Ezra Aberle, Robert J. Goos, Jasper M Teboh and Blaine G Schatz
- 65-10 1:30 PM **Revamping Soybean Nutrient Uptake, Partitioning, and Removal Data of Modern High Yielding Genetics and Production Practices.** Adam P Gaspar*, Carrie A.M. Laboski, Seth Naeve and Shawn P. Conley
- 65-11 1:45 PM **Planting Date Effect on Soybean Sudden Death Syndrome Development and Yield Loss.** David A. Marburger*, Damon L. Smith and Shawn P. Conley
- 65-12 2:00 PM **Water-Use Efficiency of Soybean (*Glycine max*) Genotypes Contrasting for Carbon Isotope Discrimination.** Brett Naylor* and Felix B. Fritschi
- 65-13 2:15 PM **Edamame Cultivar Evaluation for Central Alabama.** Charles Z. Ogles*, Elizabeth A. Guertel and David B. Weaver
- 65-14 2:30 PM **Interseeded Cover Crop Species and Timing on Biomass Production and Soybean (*Glycine max*) Yield in Eastern South Dakota.** Graig Reicks*
- 65-15 2:45 PM **Impact of Planting Date and Maturity Group on Mid-South Soybean Production.** Clinton Wood* and L. Jason Krutz
- 3:00 PM **Adjourn**

SESSION NO. 66—10:10 AM—11:45 AM

MCC, 102 BC, Main Level

Influence of Soil & Crop Management on Soil Health & Environmental Quality: I

ASA Section: Environmental Quality

Presider: Guillermo Hernandez-Ramirez

- 10:10 AM **Introductory Remarks**
- 66-1 10:15 AM **Assessing Land Management Effects on Soil Properties with Soil Survey and Dynamic Soil Property Projects.** Candiss Williams*, Skye A. Wills and Cathy A. Seybold
- 66-2 10:30 AM **Soil Health Assessment of Long-Term No-till Field Studies in the Southern Plains.** Eric Blake McGowen*
- 66-3 10:45 AM **Using Diverse Cover Crop Mixtures to Provide Ecosystem Services.** Denise M Finney* and Jason P. Kaye

- 66-4 11:00 AM **Interaction of Sustainable Soil Management Practices and Soil Fumigation on Soil Quality Measures in Plasticulture Strawberry Systems in the SE.** Amanda McWhirt*, Michelle Schroeder-Moreno and Gina Fernandez
- 66-5 11:15 AM **Biochar Reduces Phyto-Availability of Cadmium for Fenugreek Grown in a Sandy Soil.** Ahmed Hamdy El-Naggar* and Mohammad Alwabel
- 11:30 AM **Discussion**
- 11:45 AM **Adjourn**

SESSION NO. 67—10:15 AM—11:30 AM

MCC, M100 E, Mezzanine Level

Managing Research Centers for Wildlife and Beneficial Insects

ASA Section: Land Management & Conservation

- 10:15 AM **Introductory Remarks**
- 67-1 10:20 AM **A Novel Integrated Cropping System for Efficient Grain Production, Improved Soil Quality and Enhanced Beneficial Arthropod Communities.** Robert J. Kremer*, Timothy M. Reinbott, Kristen Sloan Veum, Charles LeRoy Deichman and Terryl L. Woods
- 67-2 10:35 AM **Effects of Host Plant Density on Herbivores and Their Parasitoids: A Field Experiment with a Native Perennial Legume.** Andrea Salas*, Suzanne Koptur and Krishnaswamy N. Jayachandran
- 67-3 10:50 AM **A Virtual Field Day—the New Normal for the 21st Century?** Timothy M. Reinbott* and Kayla Wolf
- 67-4 11:05 AM **Western Burrowing Owl Artificial Habitat Support at the University of Arizona Maricopa Agricultural Center.** Rick Ward*, Greg S. Clark and Michael Wierda
- 11:20 AM **Concluding Remarks**
- 11:30 AM **Adjourn**

SESSION NO. 68—10:25 AM—4:15 PM

MCC, L100 E, Lower Level

Pedology: I (includes student competition)

SSSA Division: Pedology

Presider: Eric Brevik, Bradley Miller, Monday Mbila

- 10:25 AM **Presider - Eric C. Brevik**
- 10:25 AM **Introductory Remarks**
- 68-1 10:30 AM **Utilizing Suites of Isotopic and Elemental Tracers to Constrain Cryoturbation Rates and Patterns in a Non-Sorted Circle (Abisko, SE).** Nicolas A. Jelinski*, Kyungsoo Yoo and Jonatan Klaminder
- 68-2 10:45 AM **Digital Hillslope Position: A Basis for Consistent Identification of Toposequences.** Bradley A. Miller*
- 68-3 11:00 AM **Changes in Soil Properties and Morphology Across Environmental Gradients in the Oregon Cascades.** Kristopher Osterloh* and Jay Stratton Noller
- 68-4 11:15 AM **Using Probability Distributions to Quantify Soil Development Variability with Time.** Christopher Shepard*, Marcel G. Schaap and Craig Rasmussen

- 68-5 11:30 AM **Particle Density Variability of Selected Pedons and Catenas in Iowa.** Jenny Richter* and C. Lee Burras
- 68-6 11:45 AM **An Open Science Approach to Soil Carbon Mapping.** Edward Flathers*, Paul E Gessler and Erich Seamon
- 12:00 PM **Lunch Break**
- 1:00 PM **Presider - Bradley A. Miller**
- 68-7 1:00 PM **Soil Systems As a Two-Way Street: Using Soil Morphology to Predict Waterflow through Landscapes and Reading Landscapes to Predict Soil Morphology.** Philip J. Schoeneberger* and Douglas A. Wysocki
- 68-8 1:15 PM **Impact of Tillage and Long-Term Irrigation on Dynamic Soil Properties and Taxonomy in Aridic Argiustolls of Western Kansas.** Michelle Scarpace*, Michel D. Ransom, DeAnn R. Presley, Gerard J. Kluitenberg and Skye A. Wills
- 68-9 1:30 PM **Soil Geomorphic Relationships on Relict Periglacial Landforms in North Central Illinois.** Aubrey Dalbec* and Michael E. Konen
- 68-10 1:45 PM **Developing Spatial Management Zones for Salt-Affected Soils in South Dakota Using Inherent Soil Properties and Yield History.** Rachel K. Owen*, Lance Howe, Douglas D. Malo, Cheryl L. Reese, David E. Clay and Thomas M. DeSutter
- 68-11 2:00 PM **Plinthite As Indicator of Soil Degradation: An Experience from the Savannah Ecology of South Western Nigeria.** Gabriel Oluwatosin*, Olateju Adeoyolanu, Omololu J. Idowu, Kayode S Are and Ayodele Adelana
- 68-12 2:15 PM **Translating Soil Properties to Simulated Soil-Water Availability Under Forecasted Climate.** Trinity Baker*, Tanja N. Williamson and Brad D. Lee
- 2:30 PM **Break**
- 2:45 PM **Presider - Monday Mbila**
- 68-13 2:45 PM **Spatial Analysis of Soil Salinity and Plant Stress Using Reflectance Measurement in Selected BLACK Glaciated Plain (MLRA 55C) Soils.** Girma Birru*
- 68-14 3:00 PM **On the Use of Soil Classification in Soil Science Journals.** Alfred E. Hartemink*
- 68-15 3:15 PM **Phosphorus Plant Availability and Spatial Variability in Northern Siberian Permafrost-Affected Soils.** Alevtina Evgrafova*, Alexander Otto, Nikita Tananaev and Sandra Spielvogel
- 68-16 3:30 PM **Comparison of EPO and DS in Removing the Moisture Effect from Soil Visir Reflectance Spectra.** Nuwan K Wijewardane, Yufeng Ge*, Cristine L. S. Morgan and Michael Pearson
- 68-17 3:45 PM **Cover Beds As Evidence of a Humped Soil Production Function Associated with Forest Succession.** Vance Almquist* and Jay Stratton Noller
- 68-18 4:00 PM **Stability, Sampling, and Subaqueous Soils of the Rhode River Estuary.** Barret M. Wessel*, Martin C. Rabenhorst and Phillip King
- 4:15 PM **Adjourn**

SESSION NO. 69—10:30 AM—11:35 AM

MCC, 102 D, Level 1

Symposium—Comparison of in-Season Nitrogen Application Management Strategies

ASA Section: Agronomic Production Systems

Presider: David Franzen

- 10:30 AM
- Introductory Remarks**

- 69-1 10:35 AM **Comparing Reflectance-Based N Management Strategies for Irrigated Cotton.** Kevin F. Bronson*, Kelly Thorp, Douglas Hunsaker, Jeff White and Matthew Conley
- 69-2 10:55 AM **In-Season N Rate Decisions: Soil Nitrate Vs. Crop Color.** Peter C. Scharf*
- 69-3 11:15 AM **Early Detection of Nitrogen Deficiency in Corn Using High Resolution Remote Sensing and Computer Vision.** David J. Mulla, Dimitris Zermas*, Daniel E. Kaiser, Mike Bazakos and Nikolaos Papanikolopoulos
- 11:35 AM **Adjourn to Community Business Meeting.**

SESSION NO. 70—11:00 AM—12:00 PM

MCC, 102 F, Level 1

Gypsum Uses in Agriculture: I

ASA Section: Environmental Quality

Presider: Dexter Watts

- 11:00 AM **Introductory Remarks**
- 70-1 11:05 AM **Microbial Response to Sodic Soils Amended with Flue-Gas Desulfurization Gypsum, Sugar Beet Processing Byproduct Lime, and Langbeinite.** Maria Breker*, Thomas M. DeSutter, Amitava Chatterjee and Abbey Foster Wick
- 70-2 11:20 AM **Potential of Flue-Gas Desulfurization (FGD) Gypsum for Reducing Soil Phosphorus Losses in the Great Lakes Region.** Katherine Brewer*
- 70-3 11:35 AM **Evaluation of Flue Gas Desulfurization Gypsum As a Soil Amendment for Irrigated Crop Production in Nebraska.** Bijesh Maharjan*, Richard B. Ferguson, Dennis L. McCallister, Joe David Luck and Humberto Blanco
- 11:50 AM **Discussion**
- 12:00 PM **Adjourn**

SESSION NO. 71—11:00 AM—12:30 PM

MCC, L100 GH, Lower Level

So What's Next? a Panel Discussion on Career Opportunities for Graduate Students

Special Sessions

SESSION NO. 72—11:30 AM—12:15 PM

MCC, M100 E, Mezzanine Level

Business Meeting—Agricultural Experiment Station Management Community

ASA Section: Land Management & Conservation

Presider: Thomas Abbott

- 11:30 AM
- Community Business Meeting**

SESSION NO. 73—11:35 AM—12:30 PM

MCC, M100 C, Mezzanine Level

SSSA Business Meeting—Soil Education and Outreach

SSSA Division: Soil Education and Outreach

Presider: Raymond Weil

SESSION NO. 74—11:45 AM—12:15 PM

MCC, 102 D, Level 1

Business Meeting—Sensor-Based Nutrient Management Community

ASA Section: Agronomic Production Systems

Presider: David Franzen

- 11:45 AM **Introductory Remarks**
- 11:50 AM **Division Business Meeting**
- 12:15 PM **Adjourn**

SESSION NO. 75—12:00 PM—1:00 PM

Hilton, Duluth Room, 3rd Floor

SASES Advisor Luncheon

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 76—12:00 PM—1:30 PM

Hilton, Minneapolis Ballroom D, Third Floor

Pop with the Presidents

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 77—12:30 PM—2:00 PM

Hilton, Marquette Ballroom IV-V, 2nd Floor

Tips from the Experts on the Job Application and Interviewing Process

ACS530 Early Career Members

Presider: Aaron Daigh

SESSION NO. 65 continued—12:45 PM—3:00 PM

MCC, 102 A, Level 1

Applied Soybean Research: I (includes graduate student oral competition)

Sponsored by Winfield/Land O' Lakes

ASA Section: Agronomic Production Systems

Presider: Nathan Mueller, Shaun Casteel

Speaker details can be found in 10:00 AM session no. 65.

SESSION NO. 78—12:45 PM—3:40 PM

MCC, M101 B, Mezzanine Level

Symposium—Reducing Nitrogen Loss through Subsurface Drainage: Practices, Efficiencies and Impacts: II

ASA Section: Environmental Quality

Presider: Jeppe Kjaersgaard

- 12:45 PM **Introductory Remarks**
- 78-1 12:50 PM **Impact of Controlled Drainage on Reducing Nitrogen Loss in the Red River Valley.** Xinhua Jia*, Thomas F. Scherer and Dean D Steele
- 78-2 1:10 PM **Bioreactors, Wetlands, and Managed Drainage to Reduce Tile Nitrate Losses in East-Central Illinois Fields.** Mark B. David*, Lowell E. Gentry, Richard A. Cooke and Tito Lavaire

- 78-3 1:30 PM **Constructed Wetlands Targeting Nitrogen Removal in Agricultural Drainage Discharge a Subcatchment Scale Mitigation Strategy.** Charlotte Kjaergaard*, Carl Christian Hoffmann, Jacob Druedahl Bruun and Bo Vangsoe Iversen
- 78-4 1:50 PM **Conservation Drainage for Improved Water Quality in Missouri.** Kelly A. Nelson*, Patrick Nash and Peter P. Motavalli
- 2:10 PM **Break**
- 78-5 2:20 PM **Nutrient Management, Cover Crops, and Drainage Water Management for Reducing Nitrate-N Losses in Iowa.** Matthew J. Helmers*, Linda Schott, Emily Waring, Kristina Craft, Ainis Lagzdinis and Carl Pederson
- 78-6 2:40 PM **Compilation and Analysis of Nearly Half a Century of Drainage Nitrogen Loss Studies.** Laura Christianson* and R. Daren Harmel
- 78-7 3:00 PM **Denitrifying Bioreactors for Nitrate Removal: A Meta-Analysis of Controlling Factors.** Kelly Addy, Arthur J. Gold, Mark B. David*, Nicole Sacha, Laura E. Christianson and Louis Schipper
- 78-8 3:20 PM **Drainage Water Retention and Recycling to Increase Resiliency and Decrease Nutrient Losses.** Jane Frankenberger*
- 3:40 PM **Adjourn Symposium & begin Business Meeting**

SESSION NO. 79—12:55 PM—3:30 PM

MCC, 102 E, Level 1

Management Practices and Land-Use Impact on Global Warming Potential and Greenhouse Gas Intensity

ASA Section: Environmental Quality

Presider: Upendra Sainju

- 12:55 PM **Introductory Remarks**
- 79-1 1:00 PM **Trace Gas Fluxes, Global Warming Potential and Greenhouse Gas Intensity Related to Tillage and Nitrogen Application with and without Nitrpyrin in Rainfed Corn.** Rex A. Omonode*, Tony J. Vyn and Douglas R Smith
- 79-2 1:15 PM **Long Term Crop Rotation and Tillage Effects on Greenhouse Gas Emissions in Illinois, USA.** Gevan D. Behnke*, Stacy M Zuber, Emerson D. Nafziger and Maria B. Villamil
- 79-3 1:30 PM **Can Varying Nitrogen Application Rates and Timing Reduce the Environmental Impact of Corn Under Future Climate?** Benjamin D. Duval*, Peter C. Scharf, Melannie D. Hartman, Stephen J. Del Grosso and Robert P. Anex
- 79-4 1:45 PM **Achieving Multiple Sustainable Intensification Goals through Alternate Wetting and Drying in Rice Systems.** Bruce Linquist*, Gabriel LaHue and Daniela Carrijo
- 79-5 2:00 PM **Nitrous Oxide Emissions from Irrigated and Non-Irrigated Continuous Wheat Under Three Different N-Fertilizer Regimes in Saskatchewan, Canada.** Richard E. Farrell*, Joel Ens, Reynald L Lemke and Warren Douglas Helgason
- 79-6 2:15 PM **Does Increasing Soil Carbon Increase Soil Nitrous Oxide Emissions from a Cropping Soil in a Semiarid Region?** Louise Barton*, Frances Hoyle and Daniel Murphy
- 2:30 PM **Break**

AFTERNOON

- 79-7 2:45 PM **Managing Agricultural Greenhouse Gases Network (MAGGnet): Exploring Greenhouse Gas Mitigation Potential of Cropland Management Practices.** Mark A. Liebig*, Alan J. Franzluebbers, Jens Leifeld, Pier Paolo Roggero, Rene Dechow, Kristiina Regina, Yasuhito Shirato, Ayaka W. Kishimoto-Mo and Gervasio Pineiro
- 79-8 3:00 PM **Mitigating Ammonia Volatilisation from Agricultural Systems—a Global Synthesis.** Baobao Pan*, Shu Kee Lam and Deli Chen
- 79-9 3:15 PM **A Global Meta-Analysis on the Impact of Management Practices on Net Global Warming Potential and Greenhouse Gas Intensity.** Upen-dra M. Sainju*
- 3:30 PM **Adjourn**

SESSION NO. 80—12:55 PM—3:30 PM

MCC, Auditorium 2, Level 1

Graduate Student Oral Competition: Golf Course Management and Cultural Practices

C05 Turfgrass Science

Presider: James McCurdy

- 12:55 PM **Introductory Remarks**
- 80-1 1:00 PM **Establishment Strategies for Creeping Bentgrass Putting Greens.** Eric C Chestnut*, John N. Rogers III, Thomas Okada Green and James R Crum
- 80-2 1:15 PM **Cultural Practices to Maintain Soil Physical Properties for Ultradwarf Bermudagrass Cultivar.** Jordan Craft*, Christian M. Baldwin, James D. McCurdy, Barry R. Stewart, Maria Tomaso-Peterson and Eugene K Blythe
- 80-3 1:30 PM **Effects of Selected Wetting Agents on Removing Organic Coating from Water Repellent USGA Sand.** Enzhan Song*, Keith W. Goyne and Xi Xiong
- 80-4 1:45 PM **Clay Accumulation at Textural Boundaries in Sand Putting Greens.** Glen R. Obear* and William Kreuser
- 80-5 2:00 PM **Sand Size Affects Topdressing Removed By Mowing on Putting Green Turf.** Ruying Wang*, James W. Hempfling, Bruce B. Clarke and James A. Murphy
- 2:15 PM **Break**
- 80-6 2:25 PM **The Effects of Nitrogen and Methiozolin on Annual Bluegrass Control and Creeping Bentgrass Recovery on Golf Greens.** Chen Fang* and John Street
- 80-7 2:40 PM **Effect of Indaziflam Applications on Hybrid Bermudagrass Growth.** Ling Ou*, Matthew D Jeffries and Travis W Gannon
- 80-8 2:55 PM **Growing Degree Day Models of Plant Growth Regulator Efficacy on Creeping Bentgrass Putting Greens.** Ramzi White* and Joseph Ronald Young
- 80-9 3:10 PM **Influence of Nitrogen Source and Rate on Fairway Buffalograss Divot Recovery.** Evan Alderman*, Jared A Hoyle, Steven J. Keeley and Jack D. Fry
- 3:25 PM **Concluding Remarks**
- 3:30 PM **Adjourn**

SESSION NO. 81—12:55 PM—3:45 PM

MCC, 102 D, Level 1

General Bioenergy Systems: I

ASA Section: Agronomic Production Systems

- 12:55 PM **Introductory Remarks**
- 81-1 1:00 PM **Effect of Winter Canola Planting Date and Variety on Yield and Meal Quality for Biodiesel Production.** Jason P. de Koff*
- 81-2 1:15 PM **Evaluation of Winter Oilseed Crops in Corn-Soybean Rotations in the Western Corn Belt.** Aaron J. Sindelar* and Marty R. Schmer
- 81-3 1:30 PM **Response of Nitrogen Fertilizer Rates on Agronomic and Environmental Performance of Ethiopian Mustard (*Brassica carinata*) in South Dakota.** Sandeep Kumar*, Thandiwe M. Nleya, Kathleen Grady, Brianna Wegner, Rajesh Chintala, Christopher Graham and William Gibbons
- 81-4 1:45 PM **Nitrogen Fertilization Response of Dedicated Bioenergy Sorghums in North Carolina.** Adam Heitman*, Miguel S. Castillo, Zan Wang, T. J. Smyth, Carl R. Crozier, Ronnie Heiniger and Ronald Gehl
- 81-5 2:00 PM **Quality Vs Quantity in Napiergrass Harvest Alternatives.** William F. Anderson*, Bruce S Dien, Patricia J O'Bryan, Michael A Cotta, Timothy Strickland and Marshall Lamb
- 2:15 PM **Break**
- 81-6 2:30 PM **Genotype x Environment Interactions in First-Rotation Yields of Improved Shrub Willow Cultivars in North America.** Eric S. Fabio*, Timothy A. Volk, Raymond O. Miller, Michelle J. Serapi-glia, Hugh G. Gauch, Gregg A. Johnson, Ken C.J. van Rees, Michel Labrecque, Beyhan Y. Amichev, Ryan D. Hangs, Julia A. Kuzovkina, Robert G. Ewy, Gary J. Kling and Larry B. Smart
- 81-7 2:45 PM **Impact of Anthracnose Infection on Biomass Composition and Yield of Switchgrass Cultivars.** Lindsey Hoffman*, Eric N Weibel and Stacy A Bonos
- 81-8 3:00 PM **Energybeet Production on Organic Soil in Florida: Impacts of Planting, Harvesting, and Pest Management Practices.** Maninder Pal Singh* and Gregg Nuessly
- 81-9 3:15 PM **Establishment of Perennial Groundcovers for Corn-Based Bioenergy Production Systems.** Cynthia Bartel*, Andrew W. Lenssen, Kenneth J. Moore, Sotiris V Archontoulis and David A. Laird
- 81-10 3:30 PM **Allometric Models for Predicting Aboveground Biomass, Carbon and Nitrogen Stocks in Potential Biofuel Crops in Hawaii.** Adel H Youkhana*, Susan crow, Richard Ogoshi, James R. Kiniry, Manyowa Meki, Daniel Richardson and Mae Nakahata
- 3:45 PM **Adjourn**

SESSION NO. 82—12:55 PM—3:45 PM

MCC, L100 GH, Lower Level

Agricultural Remote Sensing: I

ASA Section: Climatology & Modeling

Presider: E. Raymond Hunt

- 12:55 PM **Introductory Remarks**
- 82-1 1:00 PM **Understanding Spatial Variability of Corn Yield Using Remotely Sensed Imagery.** Bruno Basso*, Benjamin Dumont, Greg Putman, Jinshui Zhang, Jose E. Cora and Joe T. Ritchie

- 82-2 1:15 PM **Tea Bud Plucking Evaluation Using Small Format Aerial Photograph from Unmanned Aerial Vehicle (UAV).** Dhimas Wiratmoko*, Joko Santoso, Muhammad Arif Yusuf and Witjaksana Darmosarkoro
- 82-3 1:30 PM **Rapid Detection of Colorado Potato Beetle Damage Using Small Unmanned Aircraft.** E. Raymond Hunt* Jr., Silvia I. Rondon, Philip B Hamm, Alan E. Bruce and Robert W. Turner
- 82-4 1:45 PM **Using Field-Based Aerial Imaging Platform to Improve Selection Efficiency in Breeding for Drought Tolerance in Maize.** Mainassara Abdou ZAMAN-ALLAH*, Jill Cairns, Jose Luis Araus, Amsal Tarekegne, Cosmos Magorokosho, Biswanath Das, Mike Olsen and Prasanna B.M.
- 82-5 2:00 PM **Automatic Scouting of Agricultural Fields with High Resolution Satellite Imagery.** John Shriver*
- 2:15 PM **Break**
- 82-6 2:30 PM **Daily NDVI-Derived Phenology Metrics Improve in-Season Predictions of Biomass, Grain, Protein, and Nitrogen Accumulation in Spring Wheat.** Troy Magney*
- 82-7 2:45 PM **Remote Sensing Approach to Compare Maize Canopy Optical Properties Across Years By Accounting for Temperature Effects on Phenology.** Ana Wagner*, Diego N. L. Pequeno, Caroline G. Staub, Daniel D. Barreto, Clyde W. Fraisse, Noemi Guindin and Carol Crawford
- 82-8 3:00 PM **Monitoring Soybean Condition and Predicting Yield Using MODIS Vegetation Index 250-m during Critical Stages: A Case of Study in Iowa and Minnesota.** Noemi Guindin* and Matthew C. Hansen
- 82-9 3:15 PM **Assessing Agricultural Climate Resilience: Creating a Decision Support System at the National Agricultural Statistics Service.** Noemi Guindin-Garcia*, Carol Crawford, Clyde W. Fraisse and Ana Wagner
- 82-10 3:30 PM **A Regional Crops Forecasting Model Integrating Satellite Remote Sensing with Localized Epic Model.** Mohammed Sikder*, Ruixin Yang, Zhenwei Yang, Srirama Krishna Reddy and Jackie C. Rudd
- 3:45 PM **Adjourn.**

SESSION NO. 83—12:55 PM—4:00 PM

MCC, 103 BC, Main Level

Graduate Student Oral Competition: Turfgrass Cultural Practices, Ecology and Environment

C05 Turfgrass Science

Presider: Benjamin Wherley

- 12:55 PM **Introductory Remarks**
- 83-1 1:00 PM **Evaluation of Hybrid Turf for Water Conservation.** Jonathan Montgomery* and James Baird
- 83-2 1:15 PM **The Effect of Acute Drought on Fine Fescue Mixtures Maintained As a Golf Course Fairway.** Maggie Reiter*, Brian Horgan and Eric Watkins
- 83-3 1:30 PM **Germination and Establishment of Cool-Season Turfgrasses As Influenced By Irrigation Frequency.** Daniel Sandor*, Douglas E. Karcher and Michael D. Richardson
- 83-4 1:45 PM **Prevention of Winter Desiccation on Fairway Turf in Nebraska.** Darrell Michael*

- 83-5 2:00 PM **Evaluation of Turfgrass Crown Membrane Health in Response to Ice Stress and Management Practices of Creeping Bentgrass and Annual Bluegrass Putting Green Species.** Kevin Laskowski*, Emily B Merewitz and Kevin W. Frank
- 83-6 2:15 PM **Seeding Date and Seed Treatment Affects Success of Dormant-Seeded Buffalograss.** Luqi Li*, Matt Sousek and Zachary J. Reicher
- 2:30 PM **Break**
- 83-7 2:40 PM **Establishment of Kentucky Bluegrass Inoculated By a Novel Nitrogen-Fixing Bacterial Endophyte.** Ryan Sebring*, Maxim J. Schlossberg, Peter J.A. Kleinman, R. Howard Skinner and Ray B. Bryant
- 83-8 2:55 PM **Nitrous Oxide Emissions and Carbon Sequestration in Turfgrass: Effects of Irrigation and N Fertilization.** Ross Braun* and Dale J. Bremer
- 83-9 3:10 PM **Seasonal Runoff and Nutrient Transport from St. Augustinegrass Turf.** Charles Henry Fontanier*, Jacqueline Aitkenhead-Peterson, Benjamin Wherley and Richard H. White
- 83-10 3:25 PM **Evaluating the Effects of Removing Coarse and Medium Sand from Topdressing on Velvet Bentgrass Turf.** James W. Hempfling* and James A. Murphy
- 83-11 3:40 PM **Fluctuations over Time in Dislodgeable 2,4-D Residues from Hybrid Bermudagrass Athletic Fields.** Matthew D Jeffries*, Travis W Gannon, James T Brosnan, Khalied A Ahmed and Gregory K Breeden
- 3:55 PM **Concluding Remarks**
- 4:00 PM **Adjourn**

SESSION NO. 84—12:55 PM—4:15 PM

MCC, L100 A, Lower Level

Symposium—Insect Ecology in Organic Crop Management Systems

ASA Section: Agronomic Production Systems

- 12:55 PM **Introductory Remarks**
- 84-1 1:00 PM **Ecological Management for Ecosystem Services: What Can be Learned from Failure of Neonicotinoids.** Juha Helenius* and Charles A. Francis
- 84-2 1:25 PM **Evaluating and Augmenting Pollinator Communities in Diversified Organic Farming Systems.** David Crowder*
- 84-3 1:50 PM **Is Mineral Balance Beneficial? Gypsum Fertilization Affects European Corn Borer Development and Insect Damage to Corn.** Ebony Murrell* and Eileen M Cullen
- 84-4 2:10 PM **The Role of Plant Breeding in Insect Management in Organic Systems.** William F. Tracy*
- 84-5 2:30 PM **Arthropods in Organic Reduced Tillage Systems.** Mary Barbercheck*, Ariel Rivers, Randa Jabbour, Tara Pisani-Gareau and Christina Mullen
- 2:55 PM **Break**
- 84-6 3:10 PM **Biological Control Buffet in America's Salad Bowl.** Eric B. Brennan*
- 84-7 3:30 PM **Conserving Insect Function In Organic Systems: Predation and Pest Management.** Jonathan Lundgren*
- 84-8 3:55 PM **A Multi-Pronged Approach to Organic Soybean Pest Management.** Kathleen Delate*
- 4:15 PM **Adjourn**

SESSION NO. 85—12:55 PM—4:15 PM

MCC, 103 DE, Level 1

Graduate Student Oral Competition: Turfgrass Breeding and Genetics, Stress Tolerance

C05 Turfgrass Science

President: Ambika Chandra

- 12:55 PM **Introductory Remarks**
- 85-1 1:00 PM **Genetic Variation of Kikuyugrass in California, Hawaii, and Australia.** Tyler Joseph Mock*, James H. Baird and Peter Martin
- 85-2 1:15 PM **Genetic Diversity of Tall Fescue (*Lolium arundinaceum* (Scrib.) Darbysh.) Cultivars Using Microsatellite (SSR) Markers.** Vincenzo Averello*, Christine Kubik, Jennifer Vaiciunas, William A. Meyer, Stacy A Bonos and Joshua Honig
- 85-3 1:30 PM **Improving Selection Accuracy with Post-Hoc Blocking in Turfgrass Breeding.** Lin Xing*, Kevin E. Kenworthy, J. Bryan Unruh and Patricio Munoz
- 85-4 1:45 PM **Proteomic Profiling for Proteins Associated with Heat Tolerance in Fine Fescue.** Jinyu Wang*, David Jespersen and Bingru Huang
- 85-5 2:00 PM **Chlorophyll Synthesis and Degradation Associated with Heat-Induced Leaf Senescence.** David Jespersen* and Bingru Huang
- 85-6 2:15 PM **Genetic Components Associated with Cold Tolerance and Turf Quality-Related Traits in St. Augustinegrass.** Jennifer Ann Kimball*, Susana R. Milla-Lewis, Maria Carolina Zuleta, Steven Edward Mulkey, Consuelo Arellano, Tan D. Tuong and David P. Livingston
- 85-7 2:30 PM **Finding Benefit in Endophytes to Mitigate the Effects of Freezing Stress in Perennial Ryegrass.** Garrett Carl Heineck*, Eric Watkins, Angela Orshinsky and Nancy Jo Ehlke
- 2:45 PM **Break**
- 85-8 2:55 PM **Effect of Polyamines on Salinity Stress Tolerance in Creeping Bentgrass.** Yingmei Ma* and Emily B Merewitz
- 85-9 3:10 PM **Performance of Fine Fescues Under Two Forms of Traffic.** Hui Chen*, James A. Murphy and Bradley S. Park
- 85-10 3:25 PM **The Physiological Response of Rough Bluegrass (*Poa trivialis* L.) to Red and Blue Light.** Dominic Petrella*, David S. Gardner, Joshua Blakeslee, James Metzger and T. Karl Danneberger
- 85-11 3:40 PM **Sod Tensile Strength and Handling Quality of Entries in the 2013 NTEP Bermudagrass Trial at Stillwater, OK.** Lakshmy Gopinath*, Dennis L. Martin, Justin Quetone Moss and Yanqi Wu
- 85-12 3:55 PM **Sod Tensile Strength: How Strong Is Your Bermuda?** Chrissie Segars*, Justin Quetone Moss, Dennis L. Martin, Yanqi Wu and Niels maness
- 4:10 PM **Concluding Remarks**
- 4:15 PM **Adjourn**

SESSION NO. 86—12:55 PM—4:15 PM

MCC, M100 C, Mezzanine Level

Environmental Impacts of Land Application of Waste

SSSA Division: Soils & Environmental Quality

President: Emily Woodward

- 12:55 PM **Introductory Remarks**

- 86-1 1:00 PM **Exploring the Soil Myrosinase-Glucosinolate System in Plant Protection.** George F. Antonious*
- 86-2 1:15 PM **Denitrification Rates Under Typical Dairy Rotations in Atlantic Canada.** Keith D. Fuller*, David L. Burton, Mark Grimmett, Jeff Franklin, Craig F. Drury, Bernie Zebarth, Vernon Rodd and Eddie St. George
- 86-3 1:30 PM **Estimation of Nutrient Leaching Applying Liquid Manure in Bio-Circulation Experimental Forest Using Root Zone Water Quality Model.** Eunmi Hong*, Jin-Yong Choi and Yakov A. Pachepsky
- 86-4 1:45 PM **Recycling Post-Consumer NPK from Wastewater Treatment Plants Back to Agriculture.** Phillip Barak*, Christy Davidson, Tyler Anderson, Laura Schulz and Menachem Tabanpour
- 86-5 2:00 PM **Modeling the Influence of Septic Systems on Fecal Bacteria Load in an Urbanizing Watershed in Georgia.** Robert Sowah*, Mussie Y. Habteselassie and David E. Radcliffe
- 86-6 2:15 PM **Soil Electrical Conductivity (Salinity) Changes Due to Subsurface Drip Irrigation in Turfgrass Field Using Municipal Treated Wastewater.** Seyed Mohammad Mousavi, Sayyed-Hassan Tabatabaei, Seyed Majid Mirlatifi and Mohammad Pessarakli*
- 86-7 2:30 PM **Organic Colloid and the Migration of Radioactive Cesium in Polluted Soil in Fukushima, Japan.** Thuyet Dang*, Takahiro Tatsuno, Hiromi Imoto, Shoichiro Hamamoto and Taku Nishimura
- 2:45 PM **Break**
- 86-8 3:00 PM **Quantifying the Cumulative Effects of Multiple Disturbance Regimes (including shale-gas development) on Northern Appalachian Forests.** Patrick J. Drohan* and Susan Stout
- 86-9 3:30 PM **Trace Element Release from Coal Fly Ash: Quantitative Geochemical Modeling Using Leaching Tests.** Fanny Coutelot* and Olivier Atteia
- 86-10 3:45 PM **Soil Reclamation of Copper Tailing with Organic Waste Stimulate Long Term Vegetation Recover in Central Chile.** Eduardo C. Arellano*, Bruna Garreton, Rosanna Ginocchio and Rosa Madrid
- 86-11 4:00 PM **Beneficial Use of Sediments in Soil Blends to Cap and Remediate Contaminated Urban Soils.** John F Obrycki* and Nicholas T. Basta

SESSION NO. 87—12:55 PM—4:30 PM

Hilton, Symphony Ballroom I, 2nd Floor

Symposium—Cover Crop Breeding Efforts

ASA Section: Land Management & Conservation

President: Steven Mirsky

- 12:55 PM **Introductory Remarks**
- 87-1 1:00 PM **Breeding Cover Crops Setting the Stage for Discussion.** Edzard van Santen*
- 87-2 1:30 PM **The Role of the Seed Industry.** Peter Ballerstedt*
- 87-3 2:00 PM **Prospective for Breeding Cover Crop Cultivars.** Malay C. Saha*, Twain J. Butler, Maria J. Monteros, Michael A. Trammell and Patricio Munoz
- 2:30 PM **Break**
- 87-4 2:45 PM **Developing Improved Legume Cover Crops.** Gerald R. Smith, Vanessa A. Corriher-Olsen*, Heathcliffe Riday and Rebecca McGee

CLIMATOLOGY & MODELING—SESSION NO. 88

- 87-5 3:15 PM **Traits That Matter: Meeting Farmers Needs through Improved Cover Crop Performance.** Steven Mirsky*
- 87-6 3:45 PM **Resources for Cover Crop Research.** Robert L. Myers*
- 4:15 PM **Discussion**
- 4:30 PM **Adjourn**

SESSION NO. 88—1:00 PM—1:55 PM

MCC, M100 E, Mezzanine Level

Management, Analysis, and Interpretation of High-Frequency Sensor Data

ASA Section: Climatology & Modeling

Presider: Tyson Raper

- 1:00 PM **Introductory Remarks**
- 88-1 1:05 PM **Processing High-frequency Soil Moisture Sensor Data to Characterize Drought Stress Experienced In Large Cotton Variety Trials.** Tyson Brant Raper*, Derrick M. Oosterhuis, Edward M. Barnes, Darrin Dodds, Guy David Collins, Jared Whitaker, Michael A. Jones and Charles Monks
- 88-2 1:20 PM **Acquisition and Management of Continuous Data Streams for Crop Water Management.** Susan A. O'Shaughnessy, Manuel A. Andrade*, Paul D. Colaizzi and Steven R. Evett
- 88-3 1:35 PM **A Multi-Sensor Measuring System for Plant Phenotyping.** Ruixiu Sui*
- 1:50 PM **Concluding Remarks**
- 1:55 PM **Adjourn**
- 1:55 PM **Community Business Meeting**

SESSION NO. 89—1:00 PM—1:55 PM

MCC, 101 I, Level 1

Ron Phillips Plant Genetics Lectureship

C09 Biomedical, Health-Beneficial & Nutritionally Enhanced Plants

Presider: Jason Gillman

- 1:00 PM **Introductory Remarks**
- 89-1 1:05 PM **Genes, Jeans and Genomes: Exploring the Mysteries of Polyploidy In Cotton.** Jonathan Wendel*
- 1:55 PM **Adjourn**

SESSION NO. 47 continued—1:00 PM—2:45 PM

MCC, 101 B, Level 1

Soil Biology & Biochemistry: I

SSSA Division: Soil Biology & Biochemistry

Presider: Sheeja George, Lisa Fultz

Speaker details can be found in 8:00 AM session no. 47.

SESSION NO. 90—1:00 PM—3:00 PM

Hilton, Minneapolis Ballroom E, Third Floor

Crops Judging Contest Showcase

Students of Agronomy, Soils and Environmental Sciences (SASES)

Presider: Nathan Kosbau

SESSION NO. 55 continued—1:00 AM—3:00 PM

MCC, M100 IJ, Mezzanine Level

Crop Ecology, Management & Quality: I

C03 Crop Ecology, Management & Quality

Presider: Jeffrey Coulter

Speaker details can be found in 8:55 AM session no. 55

SESSION NO. 91—1:00 PM—3:10 PM

MCC, M100 A, Mezzanine Level

Symposium—Application of Data Meta-Analysis for Smallholder Conditions.

ASA Section: Global Agronomy

Presider: Armando Tasistro Souto

- 1:00 PM **Introductory Remarks**
- 91-1 1:05 PM **Application of Data Meta-Analysis for Smallholder Conditions.** Marc Corbeels*
- 91-2 1:30 PM **Scientific Evidence and the Smallholder Farmer: Conservation Agriculture Research, Inference Space and Quality of Science.** Sylvie M. Brouder*
- 91-3 1:55 PM **Assessing the Case for Climate Smart Agriculture: A Systematic Review.** Patrick Bell*, Todd S. Rosenstock, Christine Lamanna, Katherine L. Tully, Caitlin Corner-Dolloff, Miguel Lazaro, Sabrina Chesterman and Evan H. Girvetz
- 91-4 2:20 PM **Crop Nutrient Response Functions for Africa: The Database and Extrapolation for Fertilizer Use Optimization.** Charles S. Wortmann*
- 91-5 2:45 PM **A Meta-Analysis of Integrated Soil Fertility Management Effects on Maize Productivity in Sub-Saharan Africa.** Pauline Chivenge*, Bernard Vanlauwe and Johan Six
- 3:10 PM **Community Business Meeting**
- 3:10 PM **Adjourn**

SESSION NO. 92—1:00 PM—3:20 PM

MCC, 101 C, Level 1

Symposium—Rigor and Relevance in Semiarid Dryland Cropping Systems

ASA Section: Agronomic Production Systems

- 1:00 PM **Introductory Remarks**
- 92-1 1:05 PM **Crop Yield Benefits of No-till in Semi-Arid Dryland Cropping Systems of the Northern and Central Great Plains.** Merle F. Vigil*, David C. Nielsen, Perry R. Miller, Gary A. Peterson, Alan J. Schlegel and Brian G. McConkey
- 92-2 1:35 PM **The Next Frontier in Cropping Systems Research Analysis: Moving Beyond ANOVA.** Meagan Schipanski*
- 2:05 PM **Break**
- 92-3 2:20 PM **Scaling on-Farm Experiments to Achieve Rapid Localized Climate Adaptation.** Patrick Lawrence*
- 92-4 2:50 PM **Innovations in Dryland Systems: Conservation Agriculture for Sustainable Intensification.** Bram Govaerts*, Virginia Nichols, Ariel Rivers and Nele Verhulst
- 3:20 PM **Adjourn to Community Business Meeting.**

SESSION NO. 48 continued—1:00 PM–3:20 PM

MCC, L100 D, Lower Level

Ph.D. Graduate Student Oral Competition

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

Presider: Trenton Roberts, Brenda Tubana

Speaker details can be found in 8:00 AM session no. 48.

SESSION NO. 93—1:00 PM–3:35 PM

MCC, 102 F, Level 1

Digital Soil Mapping for Precision Agriculture: I

ASA Section: Agronomic Production Systems

Presider: David Myers

- 1:00 PM **Introductory Remarks**
- 93-1 1:05 PM **The Critical Role of Digital Soil Maps in Agronomic Decision Support Services.** David Brenton Myers*, Chris Bobryk, Bob Gunzenhauser, Newell R Kitchen, John Shanahan, Paul R. Carter, Kenneth A Sudduth and Don Avey
- 93-2 1:20 PM **Digital Soil Mapping to Create Functional Soil Maps.** Phillip R. Owens* and Jenette Ashtekar
- 93-3 1:35 PM **Using a Visnir Penetrometer to Map Field-Scale Clay Content, Bulk Density and Restrictive Layers for the Palouse Region, Washington, USA.** Matteo Poggio*, David J. Brown, Caley Gasch, Erin Brooks, Matt Yourek and Ross S. Bricklemeyer
- 93-4 1:50 PM **High-Resolution Field-Scale Mapping of Plant-Available Water Using Penetrometer-Mounted Visnir Spectroscopy.** Jason P. Ackerson*, Cristine L. S. Morgan and Yufeng Ge
- 93-5 2:05 PM **Spatial and Temporal Variability of Soil Water Content in Leveled Fields.** Louis Longchamps* and Raj Khosla
- 2:20 PM **Break**
- 93-6 2:35 PM **Using Soil Electrical Conductivity Mapping for Precision Irrigation in the Columbia Basin.** Zirui Liu*, Jason Kelley and Chad Higgins
- 93-7 2:50 PM **Soil Salinity Mapping Using Landsat 8 Images in Northern Great Plains Sodium Affected Soil.** Tulsi Prasad Kharel*
- 93-8 3:05 PM **Comparison of Zone Delineation Methods for Precision Management in the Palouse Region.** Caley Gasch* and David J. Brown
- 93-9 3:20 PM **Validating a High-Resolution Digital Soil Map for Precision Agriculture Across Multiple Fields.** Christopher W Bobryk*, David Brenton Myers, Newell R. Kitchen, John Shanahan, Kenneth A Sudduth and Scott T Drummond
- 3:35 PM **Adjourn**

SESSION NO. 94—1:00 PM–3:35 PM

MCC, M101 C, Mezzanine Level

Fate and Transport of Agrochemicals, Microbes, and Nutrients in Biochar-Amended Soils: I

ASA Section: Environmental Quality

Section or Division Cosponsor: Soil Chemistry

Presider: Carl Bolster, Jason Streubel

- 1:00 PM **Introductory Remarks**

- 94-1 1:05 PM **Microbial Community Structure and Predicted Bacterial Metabolism Function in Biochar Pellets Aged in Soil after 34 Months.** Daquan Sun*
- 94-2 1:20 PM **Microbial Community Characterization of Biochar Amended Soils during Successive Plantings.** Christina Khodadad*, Oscar Monje, Lashelle E. Spencer, John A. Catechis and David J. Smith
- 94-3 1:35 PM **Variations in the Soil Microbial Community Structure, Abundance and Function Amended with Biochar in Legume-Cereal Cropping Pattern.** Muhammad Azeem*, David Crowley, Rifat Hayat, Qaiser Hussain, Mukhtar Ahmed and Daquan Sun
- 94-4 1:50 PM **Long-Term Influences of Biochar, Manure, or Sawdust Additions on Nutrient Leaching in Calcareous Soil.** Rodrick D. Lentz* and James A. Ippolito
- 2:05 PM **Break**
- 94-5 2:20 PM **Phosphorous Leaching and Depth Stratification in the Biochar Amended Field Soils.** Chumki Banik, Natalia Rogovska*, Shuang Huang Huang and David A. Laird
- 94-6 2:35 PM **The Adsorption of Zn(II) By Acidic Soils Following Incorporation of Biochars from Swine Manure and Rice Straw.** Jianming Xu* and Zhongmin Dai
- 94-7 2:50 PM **Transport of Pathogenic and Non-Pathogenic E. coli in Biochar-Amended Soil.** Waled Suliman*, Ann-Marie Fortuna, James B. Harsh, Manuel Garcia-Preze Sr. and Nehal Abu-Lail
- 94-8 3:05 PM **Significantly Enhanced Adsorption of Herbicides on Biochar after Tailoring By Post-Pyrolysis Air Oxidation.** Feng Xiao* and Joseph J. Pignatello
- 94-9 3:20 PM **Steric and Electronic Effects in the Interactions of Triazine Herbicides with Biochar.** Joseph J. Pignatello* and Feng (Frank) Xiao
- 3:35 PM **Adjourn**

SESSION NO. 95—1:00 PM–3:45 PM

MCC, M100 F, Mezzanine Level

Evapotranspiration Measurement and Modeling: I (includes student oral competition)

ASA Section: Climatology & Modeling

Presider: Xiaomao Lin

- 1:00 PM **Introductory Remarks**
- 95-1 1:05 PM **Crop Water Production Functions for Grain Sorghum and Winter Wheat.** Joseph Moberly*, Robert M. Aiken, Xiaomao Lin, Loyd R. Stone, Alan J. Schlegel, Louis Louis Baumhardt, Robert C. Schwartz and Dan O'Brien
- 95-2 1:20 PM **Irrigation Scheduling As Affected By Field Capacity and Wilting Point Water Content from Different Data Sources.** Gary Feng*, Ruixiu Sui, Ying Ouyang, John J. Read, Ardeshir Adeli, Dennis Reginelli and Johnie N. Jenkins
- 95-3 1:35 PM **Comparison of Mid-Century Temperature-Indexed and Change-Factor-Derived Potential Evapotranspiration in the Delaware River Basin.** Tanja N. Williamson* and P.C.D Milly
- 95-4 1:50 PM **Importance of Soil Claypans on Latent Energy Patterns.** Jonathan Gross*, Cristine L. S. Morgan, Yohannes Tadesse Yimam and Bright Dornblaser

ENVIRONMENTAL QUALITY — SESSION NO. 96

- 95-5 2:05 PM **Sensitivity Analysis of Reference ET to Sensor Accuracy.** Kendall DeJonge*, Mehdi Ahmadi, James C. Ascough II and Kristoph-Deitrich Kinzli
- 2:20 PM **Break**
- 95-6 2:30 PM **Impact of High Vapor Pressure Deficits on Canopy Temperature and Evapotranspiration in Irrigated and Rainfed Maize.** Susan J. Riha*, Jeff Melkonian and Stephen B Shaw
- 95-7 2:45 PM **Lysimetric Measurements of Evapotranspiration for Drip-Irrigated Crops.** Touyee Thao*, Florence Cassel Sharma, Shawn Ashkan, Dave Goorahoo and Josue Samano Monroy
- 95-8 3:00 PM **Field Scale Adaptation of the CROPGRO Model for Spring Safflower.** Sukhbir Singh*, Kenneth J. Boote, Sangamesh Angadi, Kulbhushan K. Grover, Sultan Begna and Dick L. Auld
- 95-9 3:15 PM **Modeling Uncertainty of Evapotranspiration Measurements from Multiple Eddy Covariance Towers over a Crop Canopy.** Seth Kutikoff*, Xiaomao Lin, Robert M. Aiken, Steven R. Evett, Prasanna H. Gowda, Paul D. Colaizzi and David K. Brauer
- 95-10 3:30 PM **A Coupled Model of Soil-Plant-Atmosphere Based on the Stomatal Optimization for C4 Crops.** Atefeh Hosseini*, Sebastian Gayler, Thilo Streck and Gabriel Katul
- 3:45 PM **Adjourn**

SESSION NO. 96—1:00 PM—3:45 PM

MCC, M100 D, Mezzanine Level

Emissions from Livestock Production: I

ASA Section: Environmental Quality

Presider: Robert Dungan

- 1:00 PM **Introductory Remarks**
- 96-1 1:05 PM **Greenhouse Gas Emissions from a Beef Cattle Feedlot.** Mei Bai*, Thomas Flesch, Sean McGinn and Deli Chen
- 96-2 1:20 PM **Applying the Eddy Covariance Technique to Measure Methane Emissions from a Beef Cattle Feedlot in Kansas.** Eduardo Santos* and Prajaya Prajapati
- 96-3 1:35 PM **Predicting Greenhouse Gas Emissions from Beef Cattle Feedyard Manure.** Heidi M. Waldrip*, Kenneth Casey, Richard W. Todd and N. Andy Cole
- 96-4 1:50 PM **Pasture-Scale Measurement of Methane Emissions of Grazing Cattle.** Richard W. Todd*, N. Andy Cole, Corey A. Moffet, Kenneth Turner, James Neel and Jean L. Steiner
- 96-5 2:05 PM **Ammonia Emission during Irrigation of Dairy Manure.** William Jokela, Jess Sherman*, Mark Borchardt and Jason Cavadini
- 2:20 PM **Break**
- 96-6 2:30 PM **Perspectives on Ammonia Abatement in Canada.** Shabtai Bittman*, Stephen C. Sheppard and Derek Hunt
- 96-7 2:45 PM **A New Cost-Effective Method to Mitigate Ammonia Loss from Intensive Cattle Feedlot: Application of Lignite.** Deli Chen*, Owen Denmead, Jianlei Sun and Mei Bai
- 96-8 3:00 PM **Effects of Low-Disturbance Manure Application Methods on N₂O and NH₃ Emissions in a Silage Corn -Rye Cover Crop System.** William Jokela*, Jess Sherman, Jason Cavadini and Michael G. Bertram

- 96-9 3:15 PM **Manure and Inorganic N Effects on Soil Greenhouse Gas Emissions Under Irrigated Corn Silage.** Ardell D. Halvorson*, Stephen J. Del Grosso and Catherine E. Stewart
- 96-10 3:30 PM **Life Cycle Environmental Impacts of Alternative Beef Production Systems in the Northeastern U.S.** Nicole Tichenor*, Christian J. Peters, Gregory Norris, Greg Thoma and Timothy S. Griffin
- 3:45 PM **Adjourn**

SESSION NO. 97—1:00 PM—3:55 PM

MCC, M100 GH, Mezzanine Level

Symposium—Efficient Resource Utilization for Improving Crop Productivity and Environmental Stewardship

C02 Crop Physiology and Metabolism

Section or Division Cosponsor: C03 Crop Ecology, Management & Quality, C05 Turfgrass Science

Presider: Jim Gaffney

- 1:00 PM **Introductory Remarks**
- 97-1 1:05 PM **Nutrient Expert, an Environmental Friendly Fertilizer Recommendation Tool, Improves Crop Productivity and Nutrient Efficiency.** Ping He*
- 97-2 1:25 PM **Resource Management and Conservation - Real World Experience from an Iowa Corn/Soybean Farmer.** Mark Kenney*
- 97-3 1:45 PM **Plant Biodiversity, Nutrient Use Efficiency and Productivity.** David Tilman*
- 97-4 2:05 PM **An Industry Perspective on Serving Global Customers and the Environment.** Jim Gaffney*
- 2:25 PM **Break**
- 97-5 2:40 PM **Efficient Use of Nitrogen.** Peter C. Scharff*
- 97-6 3:00 PM **Advances in Managing Limited Irrigation Water.** Dana Osborne Porter*
- 97-7 3:20 PM **Root Growth Under Water Deficits: Model Systems to the Field.** Robert E. Sharp*
- 3:40 PM **Discussion**
- 3:55 PM **Adjourn**

SESSION NO. 98—1:00 PM—4:00 PM

Hilton, Marquette Ballroom VII-VIII, 2nd Floor

Symposium—Public Private Partnerships to Improve Soil Health and Agronomic Resiliency

Special Sessions

- 1:00 PM **Introductory Remarks**
- 98-1 1:05 PM **Aligning Supply Chain Efforts and Removing Barriers to Improving Soil Health.** Moira McDonald*
- 98-2 1:30 PM **Practical Agronomic Considerations to Improve Soil Health and Crop Yields.** Steve Berger*
- 98-3 1:55 PM **Soil Biology As Part of Soil Health: Where Art Thou?** Charles W. Rice*
- 2:20 PM **Break**
- 98-4 2:45 PM **Conservation Management Practices Benefit Physiological and Environment Responses of Agroecosystems.** Jerry L. Hatfield* and Thomas J. Sauer
- 98-5 3:10 PM **Private Sector Initiatives to Improve Conservation Efforts - Soil Health and Water Quality.** Larry Clemens*

- 98-6 3:35 PM **Partnerships for Enhancing the Health of Our Nation's Soils.** C. Wayne Honeycutt*
- 4:00 PM **Adjourn**

SESSION NO. 39—1:00 PM—4:00 PM

MCC, 103 F, Level 1

**Forest, Range & Wildland Soils: I
(includes student competition)**

SSSA Division: Forest, Range & Wildland Soils

President: Farrah Fatemi

Speaker details can be found in 7:55 AM session no. 39.

SESSION NO. 59 continued—1:00 PM—4:00 PM

MCC, L100 C, Lower Level

Soil Fertility & Plant Nutrition: I

SSSA Division: Soil Fertility & Plant Nutrition

Speaker details can be found in 9:30 AM session no. 59.

SESSION NO. 99—1:00 PM—4:00 PM

Hilton, Marquette Ballroom I, 2nd Floor

Symposium—Carbon Storage and Dynamics in Urban Soils

SSSA Division: Urban and Anthropogenic Soils

President: Susan Day

- 1:00 PM **Introductory Remarks**
- 99-1 1:05 PM **Potential and Challenges of Carbon Sequestration in Urban Soils.** Rattan Lal*
- 99-2 1:30 PM **Toward Measuring and Modeling Regional Variation in Urban Soil CO₂ Emissions.** Darel Jenerette* and Steven Crum
- 99-3 1:55 PM **Soil Organic Carbon Storage in the Chicagoland Ecosystem.** Bryant Scharenbroch*, Margaret Bialecki, Robert Fahey and Michelle Catania
- 2:20 PM **Break**
- 99-4 2:35 PM **Soil Carbon Content and $\delta^{13}\text{C}$ in Residential Lawns Across Seven Major U.S. Cities.** Tara L.E. Trammell*, Diane E. Pataki, Peter Groffman, Neil Bettez and Jennifer L. Morse
- 99-5 3:00 PM **Promoting Soil Ecosystem Services in Cities: The Role of Green Infrastructure in Reconnecting Urban Ecohydrology.** Mitchell Pavao-Zuckerman*
- 99-6 3:25 PM **A Local, Regional and Global Perspective of C Storage in Urban Soils.** Richard V. Pouyat*, Ian Yesilonis, Yujuan Chen and Susan D. Day
- 3:50 PM **Discussion**
- 4:00 PM **Adjourn**

SESSION NO. 100—1:00 PM—4:05 PM

MCC, 102 BC, Main Level

Symposium—Long-Term Terrestrial Observatories: Outdoor Laboratories for Soil-Plant-Atmosphere Interactions: I

SSSA Division: Soil Physics and Hydrology

Section or Division Cosponsor: Soil Chemistry, Pedology, Soil Biology & Biochemistry, Soil Mineralogy, Wetland Soils, Soil & Water Management & Conservation

President: Heye Bogen, Thomas Puetz, Hangsheng Lin, Jon Chorover

- 1:00 PM **Introductory Remarks**

- 100-1 1:05 PM **The National Ecological Observatory Network: A Tool to Understand Soil-Plant-Atmosphere Interactions.** Michael SanClements* and Edward Ayres
- 100-2 1:25 PM **Tereno a Network of Terrestrial Observatories for Environmental Research.** Harry Vereecken*, Heye Bogen, Steffen Zacharias, Knut Kaiser, Hans Papen, Eckart Priesack and Irena Hanjsek
- 100-3 1:45 PM **Hobe-the Danish Hydrological Observatory.** Karsten Jensen*
- 100-4 2:05 PM **Gasping for Air: How Redox Varies in the Critical Zone and Drives Biogeochemical Cycling.** Whendee Silver* and Leilei Ruan
- 2:25 PM **Break**
- 100-5 2:35 PM **Towards a Fundamental Understanding of the Interplay and the Interdependence of Biogeochemistry and Biodiversity in the Subsurface of the Earths Critical Zone.** Kai U. Totsche*, Kirsten Ksel and Sue Trumbore
- 100-6 2:50 PM **Long Term Research at Reynolds Creek, Idaho, Lessons Learned.** Mark S Seyfried* and Kathleen A Lohse
- 100-7 3:05 PM **The Unlikely Origins and Impact of the Oklahoma Mesonet Long-Term Terrestrial Observatory.** Tyson E. Ochsner* and Christopher A. Fiebrich
- 100-8 3:20 PM **Nineteen Year Water Balance at an Engineered Surface Barrier.** Fred Zhang*
- 100-9 3:35 PM **The Control of the Lower Boundary in Weighable Lysimeters Under Different Climatic Conditions.** Sascha Reth*, Ulrich Weller, Katja Weber and Oscar Perez Priego
- 100-10 3:50 PM **Experimental Evidence of Drought Induced Alternative Stable Soil Moisture States.** David A. Robinson*, Scott B. Jones, Inma Robinson, Sabine Reinsch, Maria T. Domuez, Andrew R. Smith, Miles Marshall and Bridget A. Emmett
- 4:05 PM **Adjourn**

SESSION NO. 68 continued—1:00 PM—4:15 PM

MCC, L100 E, Lower Level

Pedology: I (includes student competition)

SSSA Division: Pedology

President: Eric Brevik, Bradley Miller, Monday Mbila

Speaker details can be found in 10:25 AM session no. 68.

SESSION NO. 101—1:00 PM—4:20 PM

MCC, L100 F, Lower Level

Symposium—Building Agroecosystem Resilience for an Uncertain Future

Special Sessions

Section or Division Cosponsor: C03 Crop Ecology, Management & Quality, Environmental Quality, C08 Plant Genetic Resources, Pedology, Climatology & Modeling

- 1:00 PM **Introductory Remarks**
- 101-1 1:05 PM **Moving Agriculture Toward Sustainability in the 21st Century.** John Reganold* and David Crowder
- 101-2 1:35 PM **Agroecosystem Resilience: Utilizing Models to Characterize Uncertainty.** Jerry L. Hatfield* and Charles Walthall
- 101-3 2:05 PM **Management of Arthropod-Mediated Ecosystem Services to Deliver Agroecosystem Resilience.** Sarina Macfadyen*, Saul Cunningham, Nancy Schellhorn, Linda Broadhurst and Anna Renwick

- 2:35 PM Break
- 101-4 2:50 PM **Building Soil Resiliency for an Uncertain Future.** David R. Huggins*
- 101-5 3:20 PM **Resilience Revisited What Next for Australian Mixed Cropping Systems?** John Kirkegaard*, James R. Hunt, Julianne M. Lilley, Susan J. Sprague, Lindsay W. Bell, Clive A. Kirkby, Mark Peoples, Andrew Fletcher, Therese McBeath and Rick Llewellyn
- 101-6 3:50 PM **The Human Dimensions of Agro-Ecosystem Resilience in an Uncertain World: Livelihood Decisions, Uncertainty, and Translational Approaches.** Corinne Valdivia*
- 4:20 PM Adjourn

SESSION NO. 102—1:00 PM—4:30 PM

MCC, L100 IJ, Lower Level

Symposium—Adapting Agricultural Practices to Extreme Weather Events

ASA Section: Climatology & Modeling

Presider: Oscar Monje, George Paul

- 1:00 PM **Introductory Remarks**
- 102-1 1:05 PM **Introduction - Adapting Agricultural Practices to Extreme Weather Events.** Oscar Monje*
- 102-2 1:20 PM **Global Warming Contributions to Twenty-First Century Drought Trends.** Benjamin I Cook*
- 102-3 1:45 PM **Assessing Options to Reduce the Impacts of Extreme Heat in Agriculture.** David Lobell*
- 102-4 2:10 PM **Climate Change Affects Phenology and Alters Ecological Relationships.** Richard Primack*
- 2:35 PM Break
- 102-5 2:50 PM **Physiological Mechanisms Affecting Seed-Set, Seed Growth, and Yield of Grain Crops to Elevated Extreme Temperatures.** Kenneth J. Boote*, Leon H. Allen Jr., P.V. Vara Prasad, Jeffrey T. Baker and Bernard A. Hauser
- 102-6 3:15 PM **The Future Impacts of Climate Change on the North American Flora.** Charles Willis*
- 102-7 3:40 PM **Response and Adaptation of Crops and Weeds to Climate Change.** Lewis Ziska*
- 102-8 4:05 PM **Coping with Extreme Weather Events: Strategies for Agriculture.** Jerry L. Hatfield*
- 4:30 PM Adjourn

SESSION NO. 103—1:00 PM—4:30 PM

MCC, 101 FG, Level 1

Symposium—International Year of Soils: Soil Biology and Biochemistry Research Across the Globe: I

SSSA Division: Soil Biology & Biochemistry

Section or Division Cosponsor: Global Agronomy, Pedology, Soils & Environmental Quality

Presider: Veronica Acosta-Martinez, Jennifer Moore-Kucera

- 1:00 PM **Introductory Remarks**
- 103-1 1:05 PM **Managing C: Accomplishments and Policies over a Century.** Charles W. Rice*
- 103-2 1:30 PM **Updates on the European Soil Biodiversity Project Ecofinders.** Joerg Roembke*, Bryan Griffiths and Philippe Lemanceau
- 103-3 1:55 PM **Soil Science Around the Globe Issues, Intervention, and Opportunities.** David C. Weindorf*

- 103-4 2:20 PM **Recent Advance in Understanding the Role of Edaphic Factors in Regulating Soil N Cycling in New Zealand: Policy Drivers and Practical Solutions.** Michael H. Beare* and Timothy Clough

2:50 PM Break

- 103-5 3:00 PM **The Rothamsted Long Term Experiments: Still Providing New Understanding of Organic Matter and Soil Quality after 170 Years.** David S. Powlson* and Andy J. Macdonald
- 103-6 3:20 PM **Combining Soil Rhizosphere Microbiology and Hydrology with African Culture and Agriculture: 15 Years Research Characterizing Native Shrub-Intercrop Systems in Senegal.** Richard Dick*, Ibrahima Dhidhiou, Ekwe Dossa, Fred Kizito, Spencer Debenport, Matthew Bright, Nathaniel Alexander Bogie, Chelsea DeLay, Lydie Lardy, Komi Assigbetse, Yacine Ndour, Modou Sene, Amianta Bdadiane, Brian Mcspadden-Gardener and Teamrat Ghezzehei
- 103-7 3:40 PM **Lessons for Managing Soil Fertility from Long-Term Trials at the International Center for Tropical Agriculture (CIAT) in Western Kenya.** Rolf Sommer*, Job Kihara, John Mukalama, Birthe Paul and Saidou Koala
- 103-8 4:00 PM **The Microbial Landscape in Soils - Biogeography of Soil Microorganisms in the German Biodiversity Exploratories.** Ellen Kandeler*
- 4:20 PM **Concluding Remarks**
- 4:30 PM Adjourn

SESSION NO. 49 continued—1:00 PM—4:35 PM

MCC, L100 B, Lower Level

M.S. Graduate Student Oral Competition

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

Presider: Don Flaten, Amy Shober, Jason Mowrer, Aaron Sindelar

Speaker details can be found in 8:00 AM session no. 49.

SESSION NO. 104—1:00 PM—4:35 PM

MCC, M101 A, Mezzanine Level

Management Impacts on Soil Properties and Soil C and N Dynamics: I

SSSA Division: Soil & Water Management & Conservation

Presider: Maysoon Mikha

- 1:00 PM **Introductory Remarks**
- 104-1 1:05 PM **Soil Aggregation and Organic Carbon Dynamics in Long-Term Tillage and Manure Amendment.** Maysoon M. Mikha*, Gary W Hergert, Joseph G. Benjamin and Jalal D Jabro
- 104-2 1:20 PM **Soil Organic Carbon Sequestration As Influenced By Tillage, Organic Manuring and Cropping Systems in an Ultisol, Southeastern Nigeria.** Charles Arizechukwu Igwe* and Akudo Onunwa
- 104-3 1:35 PM **Management Intensification Impacts on Soil Organic Carbon Aggregate Distribution in Sub-tropical Grazing Land Ecosystems.** Maria Lucia A. Silveira*, Sutie Xu, Guilherme Buonadio, Lynn E. Sollenberger, Kanika S. Inglett and Stefan Gerber
- 104-4 1:50 PM **Soil Carbon in the Sandy Soils of Wisconsin.** Jenifer Yost*, William L. Bland and Alfred E. Hartemink

- 104-5 2:05 PM **Tillage Effects on Long-Term Changes in Soil Organic Carbon and Nitrogen in the Texas High Plains.** Robert C. Schwartz*, Louis Louis Baumhardt, Bridget R. Scanlon, Jourdan M. Bell, Ronald G Davis, Ordie R. Jones, Nazirbay Ibragimov and Robert C Reedy
- 104-6 2:20 PM **Soil Organic C Changes in Response to 10-Yr of Increasing Cropping System Intensity in Montana.** Richard E. Engel*, Perry R. Miller, Roseann Wallander, Brian G. McConkey and Ryan Fedema
- 2:35 PM **Break**
- 104-7 2:50 PM **Stagnation of Soil Organic Carbon Equilibrium in the United States Midwest and Transcendence By Biosolids.** Guanglong Tian* and Chih-Yu Chiu
- 104-8 3:05 PM **Effect of Land Use and Management on Soil Intra-Aggregate Properties Determined from ct Images.** Michelle Quigley*, Alexandra Kravchenko and Mark Rivers
- 104-9 3:20 PM **Plant Residue Retention Releases Dissolve Organic Carbon from Paddy Soils Priming CH₄ Production.** Rongzhong Ye* and William R. Horwath
- 104-10 3:35 PM **Effect of Soil Moisture and Temperature on Soil Carbon Flux from a Conventional Cotton Cropping System.** Nithya Rajan*, Sumit Sharma, Kenneth D. Casey and Stephan Maas
- 104-11 3:50 PM **Contribution of Pulse Crop Residues to N₂O and CO₂ Emissions in a Subsequent Wheat Crop: A 13C/15N Study.** Liting Liu*, Reynald Lemke, J. Diane Knight and Richard E. Farrell
- 104-12 4:05 PM **Comparison of Biological Nitrogen Fixation and Greenhouse Gas Emissions during Production of Pea, Lentil, Chickpea, and Fababean.** Liting Liu*, J. Diane Knight, Reynald Lemke and Richard E. Farrell
- 104-13 4:20 PM **Fertiliser Formulation Effects on Gross Nitrogen Transformations in Permanent Grassland Soil.** Mary Harty*, Karen McGeough, Rachael Carolan, Karl G Richards, Patrick J Forrestal, Christoph Mueller, Chris Elliott, Ronnie Laughlin and Catherine Watson
- 4:35 PM **Adjourn**

SESSION NO. 105—1:00 PM—4:55 PM

MCC, 101 A, Level 1

Symposium — Advances in Understanding Impacts of Organic Matter Removal on Soils and Forest Productivity: I

SSSA Division: Forest, Range & Wildland Soils

- 1:00 PM **Introductory Remarks**
- 105-1 1:05 PM **Organic Matter Removal from Forest Soils: Lessons from the Long-Term Soil Productivity Study.** Andy Scott*, Mary Beth Adams, Shannon Berch, Matt D. Busse, Rob Fleming, Robert B. Harrison, Scott M. Holub, John M. Kabrick, David M. Morris, Deborah S. Page-Dumroese, Brian Palik and Jianwei Zhang
- 105-2 1:25 PM **Soil Organic Matter Stabilization/Destabilization: Input Removal Exposes the Controls.** Susan E. Crow*, Kate Lajtha and Marc Kramer
- 105-3 1:45 PM **Soil C and N Storage and Microbial Biomass Responses to Forest Management in Southern Pine Forests.** Thomas W. Boutton*, Julie A. Foote, Ryan M. Mushinski and D. Andrew Scott

2:05 PM **Break**

- 105-4 2:20 PM **Soil Physical, Biological, Ecological, and Chemical Effects of Litter Manipulation.** Emma Sayer*
- 105-5 2:40 PM **Tree Growth, Soil Quality and Biodiversity Response to Forest Biomass Removal in the Inland Northwest.** Mark D. Coleman*, Terry Shaw, Mark J. Kimsey, Martin F. Jurgensen, Steve Cook, Deborah S. Page-Dumroese, Dan Lindner, Alan Talhelm, Jessica Sarauer and Lauren Sherman
- 105-6 3:00 PM **Belowground Wood Decomposition Rates on LTSP Plots Along a Climatic Gradient from British Columbia to the Central California Sierras.** Deborah S. Page-Dumroese*, Martin F. Jurgensen, Matt D. Busse, Thomas A. Terry, James Archuleta and Mike Curran
- 3:20 PM **Break**
- 105-7 3:35 PM **Quantifying Genotype x Silviculture Interaction on Productivity and Carbon Allocation By Manipulating Soil Organic Matter, N Supply and Demand.** Chris Maier*, Phillip Dougherty, Kurt Johnsen and Michael Tyree
- 105-8 3:55 PM **Response of Forest Productivity to Organic-Matter Removal Depends on Soil Properties at Six Long-Term Soil Productivity (LTSP) in British Columbia, Canada.** Anya Reid*
- 105-9 4:15 PM **Organic Matter Retention after Harvesting Coast Douglas-fir: Altered Microclimate, Vegetation Structure, and Soil Nutrient Pools Interact to Regulate Forest Productivity.** Timothy B. Harrington*, Robert A. Slesak, Scott M. Holub, Stephen H. Schoenholtz and David H. Peter
- 105-10 4:35 PM **Aspen-Dominated Forest Response to Harvest Residue Removal and Compaction Varies with Site Conditions.** Miranda Curzon*, Anthony D'Amato and Brian Palik
- 4:55 PM **Adjourn**

SESSION NO. 106—1:00 PM—5:05 PM

MCC, 101 DE, Level 1

Symposium — AgMIP and Partners

Special Sessions

Presider: Senthold Asseng

- 106-1 1:00 PM **AgMIP and Partners: Advancing the Science of Modeling.** Jerry L. Hatfield*
- 106-2 1:10 PM **AgMIP Crop Teams Intercomparison and Improvement of Crop Models for Response to Climatic Factors.** Kenneth J. Boote*, Senthold Asseng, Jean-Louis Durand and Tao Li
- 106-3 1:35 PM **AgMIP Soil: Modeling the Impact of Soil Processes and Crop Rotations Effects on Yield.** Bruno Basso* and Benjamin Dumont
- 106-4 2:00 PM **Using a Large Ensemble of Crop Models to Simulate the Climate Sensitivity of Wheat Yields Across a European Transect.** Reimund P. Roetter*, Nina K Pirttioja, Stefan K Fronzek, Timothy R Carter, Marco Bindi, Roberto Ferrise, Taru I Palosuo, Fulu Tao, Holger Hoffmann, Frank Ewert, Margarita Ruiz-Ramos, Alfredo Rodriguez, Maria Ines Minguez Tudela, Miroslav Trnka, Petr Hlavinka, Marco Acutis, Senthold Asseng, Piotr Baranow, Bruno Basso, Per Bodin, Samuel Buis, Davide Cammarano, Paola Deligios, Marie-France Destain, Benjamin Dumont, Louis Francois, Ingrid Jacquemin, Chris Kollas, Kurt C. Kersebaum, Jaromir Kryszczak, Ignacio J Lorite,

- Julien Minet, Manuel Montesino, Marco Moriondo, Christoph Mller, Claas Nendel, Isik Ozturk, Alessia Peregio, Sanna Mattia, Mikhail Semenov, Czesary Slawinski, Pierre Stratonovitch, Iwan Supit, Alex Ruane, Francoise Ruget, Katharina Waha, Enli Wang, Lianhai Wu and Zhigan Zhao
- 106-5 2:25 PM **Climate Scenarios and Analyses for AgMIP Assessments.** Sonali Prabhat McDermid*, Alex C Ruane and Cynthia Rosenzweig
- 2:50 PM **Break**
- 106-6 3:00 PM **Scaling up Crop Models for Large Area Application.** Frank Ewert*
- 106-7 3:25 PM **Assessing Climate Change Effects on Pacific Northwest Wheat Production Systems.** Sanford Eigenbrode*, John Abazoglou, Paul E Gessler, Erich Seamon, Claudio O. Stockle, David R. Huggins and Byju Govindan
- 106-8 3:50 PM **Crop Regional Assessments.** Gerrit Hoogenboom*, Carolyn Z. Mutter, Kenneth J. Boote, Cheryl H Porter, Roberto O Valdivia, Alex Ruane, Ashfaq Ahmad and Muhammad Ashfaq
- 106-9 4:15 PM **Geoglam: An International Program for Coordination of Earth Observations for Global Agricultural Monitoring.** Christopher Justice*, Inbal Becker-Reshef, Alyssa Whitcraft, Varaprasad Bandaru, Michael Humber and Brian Barker
- 106-10 4:40 PM **The AgMIP Gridded Crop Modeling Initiative (AgGRID): Projects and Partners.** Joshua Elliott* and Christoph Mller
- 5:05 PM **Adjourn**

SESSION NO. 107—1:05 PM—4:00 PM

Hilton, Marquette Ballroom II, 2nd Floor

Symposium — Wetland Response to Climate Change

SSSA Division: Wetland Soils

Presider: Bruce Vasilas

- 1:05 PM **Introductory Remarks**
- 107-1 1:10 PM **Sink, Swim, or Get out of the Way: The Fate of Mangrove Forests.** Joseph M Smoak*, Joshua L Breithaupt, Thomas Smith, Ryan P Moyer and Christian J Sanders
- 107-2 1:30 PM **Rising Sea-Level Effects on Plant-Nutrient Interactions at the Boundary of Migrating Tidal Marsh and Farmland.** Katherine Tully*, Keryn Gedan and Thomas Jordan
- 107-3 1:50 PM **Forecasting Effects of Sea LEVEL RISE on Coastal Wetland Structure and Function.** Todd Z. Osborne*, Lisa G. Chambers and Lorae Simpson
- 107-4 2:10 PM **Using Wetlandscape to Simulate Prairie Wetland Responses to Climate Change.** Brett Werner*, Carter Johnson and Glenn Guntenspergen
- 2:30 PM **Break**
- 107-5 2:45 PM **Peatcosm: Experimental Insights into Climate Change Effects on Peatland Carbon Cycling and Trace Gas Flux.** Erik Lilleskov*, Evan Kane, Rod Chimner, Randall K. Kolka, Jay Lennon, Lynette Potvin, Todd A Ontl, Karl Romanowicz, L. Jamie Lamit and Aleta Daniels
- 107-6 3:05 PM **Initial Responses of Methane Cycling to Deep Peat Heating in a Bog Ecosystem.** Jason K. Keller*, Scott D. Bridgman, Jeff Chanton, Paul J. Hanson, Anya Hoppole, Joel E. Kostka, Cassandra

- A. Medvedeff, Laurel Pfeifer-Meister, Rachel Wilson, Karis McFarlane, Thomas P Guilderson and Gavin McNicol
- 107-7 3:25 PM **Integrating Climate Change into Wetland Restoration and Protection Management Strategies.** Jeanne Christie*
- 3:45 PM **Discussion**
- 4:00 PM **Adjourn**

SESSION NO. 108—1:15 PM—2:55 PM

Hilton, Marquette Ballroom III, 2nd Floor

Seed Physiology, Production & Technology: I

C04 Seed Physiology, Production & Technology

Presider: Marc Cohn

- 1:15 PM **Introductory Remarks**
- 108-1 1:25 PM **Some Anti-Oxidant Properties of Phenolic Compounds Extracts of Ackee Fruit (*Blighia sapida*) Seeds and Arils at Three Ripening Stages.** Alex Sybron*
- 108-2 1:40 PM **Glucosinolate Content Change during Seed Development and Maturation of Meadowfoam.** Jun Zhang*
- 108-3 1:55 PM **Changes in Gibberellic Acid and Abscisic Acid Contents of Red Clover during Seed Development and Maturation.** Duangporn Angsumalee* and Sabry G. Elias
- 108-4 2:10 PM **Progress on Screening the USDA Cultivated Peanut Germplasm Collection for Variability in Seed Weight, Seed-Coat Color, Oil Content and Fatty Acid Composition.** Ming Li Wang*, Brandon Tonnis, David Pinnow, Noelle A. Barkley and Gary A. Pederson
- 108-5 2:25 PM **Drying Seeds High in Polyunsaturated Fatty Acids Can Lead to Erroneous Results When Drying to Constant Weight.** Maythem Mohsen Al-Amery*
- 108-6 2:40 PM **Volatile Emission from Lettuce Seeds Stored for 25 Years.** Christina Walters*, Jennifer Crane, Lisa M Hill, Sara Mira and Xia Xin
- 2:55 PM **Adjourn**
- 2:55 PM **Division Business Meeting**

SESSION NO. 109—1:55 PM—2:45 PM

MCC, M100 E, Mezzanine Level

Business Meeting—Sensor-Based Water Management Community

ASA Section: Climatology & Modeling

Presider: Paul Colaizzi

SESSION NO. 110—2:00 PM—3:05 PM

MCC, M100 B, Mezzanine Level

Microbial Mediated Processes for Contaminants and Minerals: I

SSSA Division: Soil Chemistry

Section or Division Cosponsor: Soil Biology & Biochemistry

Presider: Shiping Deng

- 2:00 PM **Introductory Remarks**

- 110-1 2:05 PM **Reactivity of Biogenic Manganese Oxides Associated with an Environmental Remediation System at a Superfund Site.** Owen W. Duckworth*, Megan Y. Andrews, Terrence G. Gardner, Edwin Mitchell, Matthew L. Polizotto, Nelson A Rivera, Cara M. Santelli and Leslie A Sombers
- 110-2 2:20 PM **Elucidating the Structure and Reactivity of Bacteriogenic Iron Oxides to Better Understand Contaminant Cycling.** Andrew Hays Whitaker*, Megan Y. Andrews, Tyler Sowers and Owen Duckworth
- 110-3 2:35 PM **Fungal and Abiotic Controls on Selenium Redox and Implications for Remediation of Contaminated Soils.** Carla Rosenfeld*, Cara M. Santelli and Bruce R. James
- 110-4 2:50 PM **Fungi-Induced Mn(II) Oxidation and Remediation.** Cara Santelli*, Dominique L. Chaput, William D Burgos, Colleen M Hansel, Owen W. Duckworth and Terrence G. Gardner
- 3:05 PM **Adjourn**

SESSION NO. 111—2:00 PM—4:00 PM

Hilton, Marquette Ballroom IV-V, 2nd Floor

Teaching and Extension

ACS530 Early Career Members

Presider: Aaron Daigh

SESSION NO. 112—2:00 PM—4:00 PM

MCC, Exhibit Hall BC, Level 1

Robert F Barnes Graduate Student Poster Contest, MS Students

C06 Forage and Grazinglands

Presider: Twain Butler

- 112-1 1109 **Productive and Economic Analysis of Corn and Alfalfa Intercropping.** Johanna Lukaschewsky*, Alfredo Aponte, Burton L. Johnson, Joel Ransom, David Ripplinger, Osvaldo Teuber and Marisol T. Berti
- 112-2 1110 **Evaluation of Cool Season Annual Cover Crops As Alternative Forage.** Dusint Smith*, BaeHun Lee and Kun Jun Han
- 112-3 1111 **Influence of Cowpea and Nitrogen Rate in a Cropping System with Forage Rye.** Melanie L. Aiosa*, Gerald R. Smith, Vanessa Corriher-Olson, Clark B Neely and Francis M. Rouquette Jr.
- 112-4 1112 **Using Cover Crops in Wheat-Corn Rotations to Provide Forage While Improving Soil Health.** Kimberly Cassida*, Kimberly Cassida, Sieglinde S. Snapp, Vicki L. Morrone and Karen A. Renner
- 112-5 1113 **Impact of Deficit Irrigation on the Productivity and Quality of Forage Corn and Sorghum.** Gerardo van den Hoek*, Jeffrey Mitchell, Daniel H. Putnam, Jeffery A. Dahlberg and Daniel Munk
- 112-6 1114 **Forage Nutritive Value, Yield and Preference of Alfalfa and Clover Under Horse Grazing.** Devan N. Catalano*, Craig C. Sheaffer, Amanda M. Grev, Michelle L. Schultz and Krishona L. Martinson
- 112-7 1115 **Forage Nutritive Value, Yield, and Preference of Warm Season Grasses Grazed By Horses.** Michelle L. Schultz*, Craig C. Sheaffer, Devan N. Catalano, Amanda M. Grev and Krishona L. Martinson
- 112-8 1116 **Effects of K and N Fertilization on Bermudagrass Forage Accumulation, Root and Rhizome Mass, and Tissue K Concentration.** James K.

- Yarborough*, Joao M.B. Vendramini, Maria Lucia A. Silveira, Lynn E. Sollenberger, Ramon G. Leon, Frank Kuwahara, Joao M.D. Dalmazo Sanchez, Ulysses Cecato and Bernardo Melo Montes Nogueira Borges
- 112-9 1117 **Bermudagrass Breeding: What's Next?** Alexandra M Rucker*, Patricio Munoz, Jose Carlos Batista Dubeux Jr., Joao Vendramini, William F. Anderson, Malay C. Saha and Brian M. Schwartz
- 112-10 1118 **Grazing Cattle Diet Composition Effect on Dung Decomposition and Soil Nutrient Movement.** Bradley D. Schick*
- 112-11 1119 **Evaluation of Different Cover Crops in Interseeded Corn.** Katherine Caswell*, William Curran, Steven Mirsky, Gregory W. Roth, Matthew Ryan and John M Wallace

SESSION NO. 113—2:10 PM—4:15 PM

MCC, 101 I, Level 1

Symposium—Conserving and Using Crop Wild Relatives: Partnering for Success

C08 Plant Genetic Resources

Presider: Stephanie Greene

- 2:10 PM **Introductory Remarks**
- 113-1 2:15 PM **Partnerships at the Heart of a Global Initiative to Collect, Conserve and Utilize Crop Wild Relatives.** Hannes Dempewolf, Ruth Eastwood, Peter Wenzl*, Luigi Guarino and Jonas Mueller
- 113-2 2:45 PM **Collaboration Between the US Forest Service and the USDA Agricultural Research Service on the Complementary Conservation of Crop Wild Relatives in the United States.** Karen A. Williams*, Larry Stritch, Juan E. Zalapa, Kim E. Hummer and Lorraine Rodriguez-Bonilla
- 113-3 3:15 PM **Partnering on Crop Wild Relative Research at Three Scales: Commonalities for Success.** Colin K. Khoury*, Stephanie Greene and Nora P. Castañeda-Álvarez
- 113-4 3:45 PM **Prospecting for Gene Function in Complex Natural Environments and Their Derived Agricultural Systems.** R. Varma Pennmetsa, Alex Greenspan, Peter Chang, Noellia Carrasquilla-Garcia, Bullo E Mamo, Lisa Vance, Susan Moenga, Betsy Alford, Kassaye Negash, Donna Lindsay, Zehara Damtew, Lijalem Korbu Balcha, Vincent Vadez, Mahmut Gayberi, Huseyin Ozcelik, Fassil Assefa, Kassahun Tesfaye, Abdulkadir Aydogan, Bekir Bukun, Bunyamin Tar'an, Masresha Fetene, Sergey Nuzhdin, Jens Berger, Asnake Fikre, Abdullah kahraman, Eric von Wettberg and Doug Cook*
- 4:15 PM **Adjourn**

SESSION NO. 114—2:10 PM—4:20 PM

MCC, 101 H, Level 1

Symposium—QTL That Matter

C07 Genomics, Molecular Genetics & Biotechnology

Section or Division Cosponsor: C07 Genomics, Molecular Genetics & Biotechnology, C08 Plant Genetic Resources, C01 Crop Breeding & Genetics

Presider: David Lightfoot

- 2:10 PM **Introductory Remarks**

AFTERNOON

SOIL MINERALOGY — SESSION NO. 115

- 114-1 2:15 PM **Validation of Sequences Linked to Aflatoxin Accumulation Reduction in Maize.** Marilyn L. Warburton*, W. Paul Williams, Gary L. Windham, Felix Oluwaseun Ogunola, Leigh Hawkins, Seth C. Murray, Shawn M. Kaeppler, Natalia De Leon, Pat Dowd, Z. Chen, George Mahuku and Santiago Mideros
- 114-2 2:40 PM **Exploiting Barley Germplasm Resources for QTL Detection.** Gary J. Muehlbauer*
- 114-3 3:05 PM **Sugary Enhancer 1 in Maize: A Presence-Absence Allelic Variant Important in Endosperm Carbohydrate Metabolism.** Xia Zhang*, Karl Haro Von Mogel, Candice Hirsch, William F. Tracy and Shawn M. Kaeppler
- 114-4 3:30 PM **Genome-Wide Association Analysis Revealed Genetic Architecture of Cyst Nematode Resistance in a Diverse Panel of Soybean Germplasm Accessions.** Tri D. Vuong*, Humira sonah, Clinton Meinhardt, Rupesh Deshmukh, Suhas Kadam, Randall Nelson, James G. Shannon and Henry Nguyen
- 114-5 3:55 PM **Genomic Consequences of Selection and Genome-Wide Association Mapping in Soybean.** Dechun Wang*, Zixiang Wen, John Boyse, Qijian Song and Perry B. Cregan
- 4:20 PM **Adjourn**

SESSION NO. 115—2:40 PM—4:00 PM

MCC, 103 A, Level 1

Soil Mineralogy: I (Includes Student Competition)

SSSA Division: Soil Mineralogy

President: Daniel Hirmas

- 2:40 PM **Introductory Remarks**
- 115-1 2:45 PM **Transformation of Hydroxycarbonate Green Rust (GR1(CO32-)) into Ferric (oxyhydr)Oxides: The Role of Silicate.** Xionghan Feng*, Xiaoming Wang, Mengqiang Zhu, Luuk Koopal, Wenfeng Tan and Fan Liu
- 115-2 3:00 PM **Using Modified Smectites to Minimize Protein's Interference from Corn Fermentation Solution on Aflatoxin B1 Adsorption.** Sabrina Alam* and Youjun Deng
- 115-3 3:15 PM **Lead Sorption and Desorption in Oxisols from Paraná-Brazil.** Antonio C. S. Costa*, Frederico Prestes Gomes, Dimas A.M. Zaia, Ivan Granemann Souza Junior and João Paulo Trevisan Bau
- 115-4 3:30 PM **Chemical and Mineralogical Attributes of an Eutroferic Red Latosol and Their Interactions with Lead Sorption.** Rodolfo Prestes Figueiredo, Ivan Granemann Souza Junior, João Paulo Trevisan Bau, Dimas A.M. Zaia and Antonio C. S. Costa*
- 3:45 PM **Discussion**
- 4:00 PM **Adjourn**

SESSION NO. 116—3:00 PM—3:30 PM

Hilton, Marquette Ballroom III, 2nd Floor

Div. C04 Business Meeting—Seed Physiology, Production & Technology

C04 Seed Physiology, Production & Technology

President: Marc Cohn

SESSION NO. 117—3:00 PM—3:45 PM

MCC, 102 A, Level 1

Business Meeting—Applied Soybean Research Community

ASA Section: Agronomic Production Systems

President: Nathan Mueller

SESSION NO. 118—3:00 PM—4:30 PM

MCC, M100 E, Mezzanine Level

Symposium—Research Data Stewardship: What Are the Costs/Limitations Associated with Data Sharing?

ASA Section: Climatology & Modeling

President: Tyson Raper

- 3:00 PM **Introductory Remarks**
- 118-1 3:05 PM **Tereno: A Network of Terrestrial Environmental Observatories and Data Platforms.** Harry Vereecken*, Ralf Kunkel, Thomas Puetz and Heye Bogena
- 118-2 3:35 PM **Better Fertilizer Decisions for Crops: Developments of a National Web-Based Database to Support Soil Test Calibration.** Robert M. Norton*, Graeme Watmuff, Chris Dyson, Mark Conyers, Mike Bell, Nigel Wilhelm, Richard Bell, Chris Dowling, Charles Walker and Ken Peverill
- 4:05 PM **Discussion**
- 4:25 PM **Concluding Remarks**
- 4:30 PM **Adjourn**

SESSION NO. 119—3:00 PM—5:00 PM

MCC, Exhibit Hall BC, Level 1

Undergraduate Research Symposium Contest - Poster

Students of Agronomy, Soils and Environmental Sciences (SASES)

- 119-1 100 **Effect of Acid Rain on Nitrate and Nitrite Concentrations in Soil and Water Samples.** John M Wise and Brandon S Rodgers*
- 119-2 101 **Comparison of Ammonia Volatilization for Urea-Based Fertilizers in Acidic, Neutral, and Basic Soils.** Brad Davis* and Jared D. Williams
- 119-3 102 **Nitrogen and Irrigation Water Interactions in Drought-Stressed Kentucky Bluegrass.** Kerri Russell*, Bryan G. Hopkins and Neil Hansen
- 119-4 103 **Surface Soil Enzyme Activity Along the East-West Transects of (BESST-REU Geomorphology Tour) North Carolina.** Kai Purnell*, Dessy Owiti and Terrence G. Gardner
- 119-5 104 **Characterizing and Mapping the Field Scale Spatial Variability of Surface Horizon Soil Properties and Water Content with Noninvasive EM38.** Ryan Schroeder*, Robert Austin, Adam Howard and Joshua Heitman
- 119-6 105 **Nutrient Use Efficiencies in Soybean: A Review.** Ignacio A. Ciampitti, Guillermo R. Balboa and Gabriela Inveninato Carmona*
- 119-7 106 **High Throughput Characterization of Wheat Photosynthetic Efficiency, Biomass, and Yield.** Casey Reagan*, Andrew Wiersma and Eric Olson
- 119-8 107 **6-Month Corn Breeding Co-Op.** Hannah Donoho*

- 119-9 108 **The Effect of Mineral Nutrients Calcium and Magnesium on Production and Bioactivity of Condensed Tannins in Illinois Bundleflower.** Natalie Wehner* and Harley D. Naumann
- 119-10 109 **Isolation and DNA Extraction of Phytophthora from Four Wildland Soil Types in Northern California, Humboldt County.** Angelina Lasko*, Christopher Lee, David S. Baston and Susan B. Edinger-Marshall
- 119-11 110 **Facilitative and Competitive Nutrient Interactions with Changing Crop Spacing and Density in a Broccoli and Fava Intercropping System.** Juliana Wu*, Celine Pallud and Sat Darshan D. Singh
- 119-12 111 **Ilevo Seed Treatment on Soybean.** Sarah Reising*
- 119-13 112 **Improving the Food Quality of Sorghum: Utilizing Starch Analysis to Identify Phenotypes in Sorghum Mutants.** Valerie Cross*
- 119-14 113 **Exploring Environmental and Genetic Impacts on Lignin Content in Sorghum Bicolor.** Elizabeth Widder*, Patrick Schnable and Sarah Hill-Skinner
- 119-15 114 **Influence of Nitrogen Input on Active Soil Carbon in a Long-Term Crop Rotation Experiment.** Danielle Tadych*, Yucheng Feng, Jenna Platt and Reji P Matthew
- 119-16 115 **Weed Management with Engenia in Bollgard II Xtendflex Cotton.** Emily Keeling*, Austin T Koonce and J. Wayne Keeling
- 119-17 116 **A Preliminary Study of Cold Tolerance in Maize Landraces.** Lucas Roberts*
- 119-18 117 **Effect of Alternative Herbicides on Suppression of Kura Clover.** Elayna Shapiro* and Peyton Ginakes
- 119-19 118 **Sugary enhancer1 and Endosperm Carbohydrate Composition in Near-Isogenic Germplasm; Genetic and Physiological Effects.** Lauren Baker*, William F. Tracy and Matthew Murray
- 119-20 119 **The Efficacy of Soil Sampling Methods for Kentucky Soils.** Chelsea Holleman* and Lin Handayani
- 119-21 120 **Alfalfa Seed Treatment.** Jacob Bevan*
- 119-22 121 **Carbon and Nitrogen Survey in Three Wisconsin Watersheds.** Erica Olson*, Megan Chawner, Amber Radatz, Matthew D. Ruark, Francisco J. Arriaga, Todd Prill and Kevan Klingberg
- 119-23 122 **Examining Total Nitrogen Levels Found in Common Shiner Waste Water and Comparing the Effects of Tomato Seedling Growth Under Fish Waste Water Versus Commercial Fertilizer.** Erik Halverson* and Robert C. Michitsch
- 119-24 123 **Causes of Dissolved Phosphorus Loss on Discovery Farms in Wisconsin and Minnesota.** Samuel Hess*, Amber Radatz, Kevan Klingberg and Tim Radatz
- 119-25 124 **Effects of Compostable Food Service Packaging on Second Generation Growth of Wisconsin Fast Plants.** Kelly Adlington* and Robert C. Michitsch
- 119-26 125 **Evaluation of Plant Health Effects and Tolerance of Field Corn to Penthiopyrad (DuPont--Vertisan®) Fungicide Applied Postemergence.** Cole Stalter*, Larry H. Hageman, Scott E. Swanson and Marsha J Martin
- 119-27 126 **Soybean Tolerance to Sulfentrazone and Metribuzin.** Kathryn Graf*
- 119-28 127 **Quantifying the Effects of Frac Sand Waste Fines on Subsurface Water Quality.** Emily Sorenson*, Holly A.S. Dolliver and Paul Kivlin
- 119-29 200 **Response of Russet Burbank Potatoes to Manganese Fertilizer on Silt-Loam, Calcareous Soils.** Ian Patrick Scadden*, Jared D. Williams and Bryan G. Hopkins
- 119-30 201 **Effects of Freshwater Crayfish Aquaponics System on Growth and Yield of Leafy Vegetables.** Amber Monroe*, Martin Day, Matthew Pfister and Subhrajit Saha
- 119-31 202 **Alfalfa Response to Early Season Priaxor and Headline Fungicide Application.** Kaisa Werner* and Nels E. Hansen
- 119-32 203 **Impact of Crop Competition on Fitness of Glyphosate-Resistant Kochia (Kochia scoparia L. Schrad).** Jessica A. Bramhall*, Aruna Varanasi and Mithila Jugulam
- 119-33 204 **Exploring Inbred Line Grouping Using Cluster Analysis.** Haleigh Summers*
- 119-34 205 **Evaluation of Density Tests to Aid Breeding for High Test Weights.** Hannah Reed*
- 119-35 206 **Effect of Nitrogen- Vs Phosphorus-Based Manure and Compost Management on Soil Quality.** Andrew Lefever*, Amir Sadeghpour and Quirine M. Ketterings
- 119-36 207 **Brittany Utsch Abstract- Oil Adjuvant.** Brittany Utsch*
- 119-37 208 **Nitrogen Gas Loss from Polymer Coated and Polymer Sulfur Coated Urea.** Jeffrey Svedin*, Bryan G. Hopkins and Curtis Ransom
- 119-38 209 **Harvxtra, Roundup Ready Reduced Lignin Alfalfa Yield and Forage Quality Trial in Southeast Idaho.** Bradley Crookston*, Ross Spackman and Peter M. Reisen
- 119-39 210 **Simulating Nitrogen Losses from Minnesota Discovery Farms with Adapt-N.** Brian J. Bohman* and Joseph O. Storlien
- 119-40 211 **Impacts and Benefits of Polyacrylamide (PAM) on Irrigation Management, Soil Conservation, and Water Quality in Mid-South Cotton Production.** Brittany Barnes*
- 119-41 212 **Potato Yield and Quality for a Citrate Soluble Phosphorus Fertilizer Product.** Miranda Ruth*
- 119-42 213 **Comparison of Ammonium Phosphate Fertilizer on Seed Safety of Common Agronomic Crops.** Natalie Johnson*, Jared D. Williams and Brad Davis
- 119-43 214 **Comparison of Asn-26 and Urea Fertilizers in Potato Production in Southeast Idaho.** Natalie Johnson, Jared D. Williams, Bryan G. Hopkins and Ryan L. Cooper*
- 119-44 215 **Evaluation of Fungicide Blends for Control of White Mold, Early Blight, and Black Dot in Potato (Solanum tuberosum).** Zachary Harman* and Nels E. Hansen
- 119-45 216 **Mid-Season Determination of Quality Parameters in Silage Corn Using the Greenseeker Sensor.** William Steffel* and Natasha Macnack
- 119-46 217 **Bulk Density and Cropping Systems.** Catlin Pauley* and Brian Mabry

SESSION NO. 120—3:20 PM—4:20 PM

MCC, 101 C, Level 1

Business Meeting—Semi-Arid Dryland Cropping Systems Community

ASA Section: Agronomic Production Systems

Presider: Perry Miller

SESSION NO. 121—3:25 PM—4:00 PM

MCC, M100 A, Mezzanine Level

Business Meeting—Field Diagnosis for Smallholder Agriculture Community

ASA Section: Global Agronomy

Presider: Armando Tasistro Souto

SESSION NO. 122—3:40 PM—4:30 PM

MCC, M101 B, Mezzanine Level

Business Meeting—Managing Denitrification in Agronomic Systems Community

Sponsored by Agri Drain Corp. & Ecosystems Exchange Services

ASA Section: Environmental Quality

Presider: Jeppe Kjaersgaard

SESSION NO. 123—3:45 PM—4:00 PM

MCC, L100 GH, Lower Level

Business Meeting—Airborne and Satellite Remote Sensing Community

ASA Section: Climatology & Modeling

Presider: E. Raymond Hunt

SESSION NO. 124—4:00 PM—5:00 PM

Hilton, Marquette Ballroom I, 2nd Floor

SSSA Business Meeting—Urban and Anthropogenic Soils

SSSA Division: Urban and Anthropogenic Soils

Presider: Bryant Scharenbroch

SESSION NO. 125—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Applied Soybean Research: II

ASA Section: Agronomic Production Systems

Presider: Nathan Mueller

- 125-1 218 **Yield Response to Planting Date Among Soybean Maturity Groups for Irrigated Production in the Midsouth.** Montserrat Salmeron Cortasa*, Edward E. Gbur, Fred M. Bourland, Normie W. Buehring, Larry Earnest, Felix B. Fritschi, Bobby R. Golden, Daniel Hathcoat, Josh Lofton, Angela McClure, Travis D. Miller, Clark B. Neely, Grover Shannon, Theophilus K. Udeigwe, David Verbree, Earl D. Vories, William J. Wiebold and Larry C. Purcell
- 125-2 219 **Integrated Evaluation of Multiple Inputs to Increase Soybean Yield in Nebraska (Part II): Evaluation of Crop Canopy Sensors As a Tool for Soybean Research and Production.** Joshua Miller*, Charles A. Shapiro, Loren Giesler, James S. Schepers, Keith L. Glewen, Nicholas Arneson and Steve Spicka
- 125-3 220 **Integrated Evaluation of Multiple Inputs to Increase Soybean Yield in Nebraska (Part I): Evaluating Common Management Practices of Soybean Production.** Nicholas Arneson*, Loren Giesler, Charles A. Shapiro, Keith L. Glewen, Joshua Miller and Steve Spicka
- 125-4 221 **The Soybean Cyst Nematode in Relation to Soil Fertility Characteristics in Illinois Farm Fields.** Carmen M. Ugarte*, Emerson D. Nafziger and Maria B. Villamil

- 125-5 222 **Preliminary Nematode Survey from Soybean-Corn Rotations in the Mid South U.S.** Bobby R. Golden*, Stephen Kakaire, Thomas Allen, Melanie D. Fuhrman, Trent Irby, Josh Lofton, Clark B. Neely, William Jeremy Ross, Ronnie W. Schnell, William Stevens, Daniel Hathcoat and Matthew Rhine
- 125-6 223 **Performance the Expanded Polystyrene and Metallized Packaging at Seed Storage Soy.** Juliano Francisco Marques, Rute Faria*, Ademilson Coneglian and Amanda Rithieli
- 125-7 224 **Plot Planter for Soybean Management Research.** John Gaska* and Shawn P. Conley
- 125-8 225 **Tillage Effect on Population Densities of Heterodera Glycines in the United States: A Review.** Oscar Perez-Hernandez* and Emmanuel Byamukama
- 125-9 226 **Physiological Quality of Soybean Seeds with Technologies RR1 e Intacta RR2 PRO Storage Conditions.** Tulio F. Rezende, Rute Faria* and Ademilson Coneglian
- 125-10 227 **Multispectral Canopy Reflectance Measurements and Digital Imaging to Determine Soybean Maturity.** Brandon Davis*
- 125-11 300 **Soybean Yield in Rotation with Corn and Cotton Is Boosted By Poultry Litter Fertilization.** Haile Tewolde*, Normie W. Buehring, Mark Harrison and Andy R. Taylor
- 125-12 301 **Heat Stress during Soybean Seed Development Results in Different Metabolite Profiles in Heat Sensitive and Tolerant Genotypes.** Kranthi Chebrolu*, Felix B. Fritschi, Songqing Ye, Hari B. Krishnan, Jeffery D. Ray, James R. Smith and Jason D. Gillman
- 125-13 302 **Soybean Grain Yield Responses to Soil Fertility Management in Northern Ghana.** Asamoah Larbi*, Saaka Buah, Nicholas Denwar and Irmgard Hoeschle-Zeledon
- 125-14 303 **Basic Temperature-Based Solar Radiation Models to Simulate Soybean Yield Potential.** Claudio Ricardo da Silva*, Valdiney Jose da Silva and Larissa Barbosa de Sousa
- 125-15 304 **Effect of Planting Date and Row Spacing on Performance of Soybeans in Eastern South Dakota.** Matthew Schutte*, Thandiwe M. Nleya and David E. Clay
- 125-16 305 **Increasing Field Emergence in Low Phytic Acid Soybeans with Seed Treatments.** Benjamin Averitt*
- 125-17 306 **Soybean Planting Date By Maturity Group: Kansas Summary.** Ignacio Antonio Ciampitti, Douglas Edward Shoup, Gary Cramer, Eric A. Adee, Gretchen F. Sassenrath and Osler Ortez*
- 125-18 307 **The Importance of Bacterial Resource-Hoarding for the Soybean-Rhizobia Symbiosis.** Katherine Muller* and Robert F. Denison

SESSION NO. 126—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Bioenergy Systems Graduate Student Poster Competition (Voluntary for Graduate Students)

ASA Section: Agronomic Production Systems

- 126-1 308 **Simulating Impacts of Bioenergy Sorghum Residue Return on Soil Organic Carbon and Greenhouse Gas Emissions Using the Daycent**

- Model.** Yong Wang*, Fugen Dou, Joseph O. Storlien, Jason Wight, Keith Paustian, Stephen J. Del Grosso and Frank M. Hons
- 126-2 309 **Nitrogen and Harvest Impact on Biomass Yield of Established Switchgrass.** Chamara Weerasekara*, Newell R Kitchen, Shibu Jose and Sougata Bardhan
- 126-3 310 **Effects of Different Planting Schemes on Yield, Quality Parameters, Lignocellulosic Composition and Nutrient Uptake of Different Cane Varieties.** Marilyn Sebial Dalen*, Samuel Kwakye, Saoli Chanda, Jeffrey Hoy and Brenda Tubana
- 126-4 311 **An Integrated Approach to Energy Beet Production in California.** Florence Cassel Sharma, Touyee Thao*, Dave Goorahoo, Josue Samano Monroy and David Zoldoske
- 126-5 312 **On-Farm Evaluation of Sorghum As a Dedicated Bioenergy Crop on Swine-Effluent Spray Fields.** Adam Heitman*, Miguel S. Castillo, Zan Wang, T. J. Smyth, Carl R. Crozier, Ronnie Heiniger and Ronald Gehl
- 126-6 313 **Impact of Bioenergy Grass Production on North Carolina Piedmont Soil Properties.** Zan Wang*, T. J. Smyth, Joshua Heitman, Carl R. Crozier, Aziz Amoozegar, Ronald Gehl and Alan J. Franzluebbers
- 126-7 314 **Root Biomass and Microbial Response to Irrigation Deficit Treatments in the Rhizosphere of Biofuel Feedstock Cultivation in Hawaii.** Daniel Richardson*, Susan E. Crow, Adel H Youkhana, Jennifer Moore-Kucera, Richard Ogoshi, Manyowa Meki, James R. Kiniry and Mae Nakahata
- 126-8 315 **Camelina Response to Harvest Times and Sources of Seed Yield Loss.** Henry Y Sintim*, Valtcho D Zheljazkov, Augustine K Obour and Axel Garcia y Garcia
- 126-9 316 **Variety Trial and Pyrolysis Potential on Kenaf Grown in Iowa.** Marie Bourguignon*, Robert C. Brown and Kenneth J. Moore
- 126-10 317 **Effects of Biochar and Nutrient Management on Growth, Yield and Bioenergy Production of Sunflower (*Helianthus annuus*).** Matthew Pfister* and Subhrajit Saha
- 126-11 318 **Characterization of Field Pennycress (*Thlaspi arvense* L.) Germplasm.** Kayla Altendorf*, James A. Anderson, David Marks, Kevin Betts and Donald L. Wyse

SESSION NO. 127—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Agricultural Remote Sensing: II

ASA Section: Climatology & Modeling

Presider: John Sulik

- 127-1 319 **A Site-Specific Strawberry Disease Monitoring Using Wireless Sensor Network.** Thiago Borba Onofre*, Vinicius Andrei Cerbaro, Natalia Peres, Lincoln Zotarelli and Clyde W. Fraisse
- 127-2 320 **Efficient Spectra Collection with Tractor Mounted Spectrometer.** Steve K. Vosberg* and Shawn P. Conley
- 127-3 321 **Early Observations of Using UAS Images to Evaluate Durum and Spring Wheat Responses to N Fertilization in the Northern Great Plains.** Joao Flores*, Szilvia Zilahi-Sebess, Jasper M Teboh and Michael Ostlie

- 127-4 322 **Hyperspectral Canopy Reflectance As a Predictor for Root Concentrations of Nitrogen and Carbon in Native and Non-Native Grass Species.** Trey Scott, Brekke Peterson* and Patrick Starks
- 127-5 323 **Optical and Thermal IR Sensing of Crop Condition Using Multiple View Angles.** Robert F. Denison*, Gregg A. Johnson and Forrest Izuno
- 127-6 324 **Assessing Filtering and Smoothing of Active Sensor Data for the Management of N Applications in Corn.** Andrew L. Russ*, Craig S. T. Daughtry, Timothy Gish and John J. Meisinger
- 127-7 325 **A Semi-Automated Approach for Mapping Brascica Oilseeds.** John J. Sulik* and Daniel S. Long

SESSION NO. 128—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Evapotranspiration Measurement and Modeling: II (includes student poster comp)

ASA Section: Climatology & Modeling

Presider: Kendall DeJonge

- 128-1 326 **Determining Local Crop Coefficients for Efficient Irrigation Scheduling in Montana.** Kent A. McVay*, Jessica A Torrior and Paul C Stoy
- 128-2 327 **Evaluation of Different Methodologies to Estimate Reference Evapotranspiration from PRISM Dataset in the Southeastern USA.** Eduardo Gelcer*, Ana Wagner, Daniel D. Barreto, Marcus J. A. Lima and Clyde W. Fraisse
- 128-3 400 **Evapotranspiration and Carbon Dioxide Exchange Rates in a Corn-Soybean Rotation System and a Reconstructed Prairie Using a Portable Canopy Chamber.** Zhuangji Wang*, Chenyi Luo, Benjamin D. Carr, Thomas J. Sauer, Matthew J. Helmers and Robert Horton
- 128-4 401 **Satellite-Based ET Mapping in East Central Mississippi.** Huihui Zhang*
- 128-5 402 **Estimating Reference Crop Evapotranspiration in West Texas Under Limited Climate Data.** Ripendra Awal*, Ali Fares, Ram Ray and Alton B. Johnson
- 128-6 403 **Open Software Tools for Eddy Covariance Flux Partitioning.** Todd H. Skaggs* and Ray G. Anderson

SESSION NO. 129—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Soil-Plant-Water-Relations (includes graduate student competition)

ASA Section: Climatology & Modeling

- 129-1 404 **Quantifying the Influence of Physiological Processes on Crop Water Status and Consumption.** Alon Ben-Gal*, Amnon Bustan, Uri Yermiyahu, Ran Erel, Nurit Agam, Dilia Kool, Joost Iwema, Isaac Zipori, Eugene Presnov and Arnon Dag
- 129-2 405 **Physiological Failures in Zea Mays during Water-Stress: Opportunities for Improvement.** Sean M. Gleason, Dustin R. Wiggans*, Louise H. Comas, Kendall DeJonge, Jason S. Young and Huihui Zhang
- 129-3 406 **Seasonal Greenhouse Gas and Soil Nutrient Cycling in Semi-Arid Native and Non-Native Perennial Grass Pastures.** Brekke Peterson*, Jean L. Steiner and Miguel Arango

- 129-4 407 **The Effects of Fruits Load on Frond Elongation of Date Palms.** Jingbo Zhen*, Shaham Pevzner, Effi Tripler and Naftali Lazarovitch
- 129-5 408 **Simulation of Soil Respiration at Hourly Time Step.** Hamze Dokoohaki*, Fernando Miguez, Thomas J. Sauer and Mahdi Gheysari
- 129-6 409 **Cornsoywater: Web/Mobile App for Irrigation Decision Making for Corn and Soybean Fields.** James Chengchou Han*, Haishun Yang, Dharmic Payyala, Rakesh Adloori, James Specht, Martha Shulski, Kenneth Hubbard, William Sorensen, Stonie Cooper, Jennifer Rees, Greg Kruger, Gary Zoubek, Patricio Grassini, Derek Heeren, Suat Irmak and Kenneth Cassman
- 129-7 410 **A Method for Precision Closed-Loop Irrigation Using a Modified PID Control Algorithm.** Martin S Goodchild*, Karl D Khn, Malcolm D Jenkins, Kazimierz J Burek and Andrew J Dutton
- 129-8 411 **Soil Water Sensor-Based and Evapotranspiration-Based Irrigation Scheduling for Soybean Production on a Blackland Prairie Soil in Humid Climate.** Gary Feng*, John J. Read, Ying Ouyang, Ardeshir Adeli, Dennis Reginelli and Johnie N. Jenkins
- 129-9 412 **Evaluating Physiological Traits of Winter Wheat Genotypes Using Remote Sensing Techniques.** Sarah Opeyemi Ajayi*, Qingwu Xue, Nithya Rajan, Amir M.H. Ibrahim, Srirama Krishna Reddy, Jackie C. Rudd, Shuyu Liu, Ruixiu Sui and Kirk E Jessup
- 129-10 413 **Water and Nitrogen Use Efficiencies of Spring Wheat Cultivars.** Jessica A Torrion* and Robert N Stougaard
- 129-11 414 **Linking the Unified Plant Growth Model (UPGM) with the Agroecosystems-Watershed Model (AgES-W).** Gregory S. McMaster*, James C. Ascough II, Debbie Edmunds, Olaf David, Robert H. Erskine, Holm Kipka, Timothy R. Green, Nathan Lighthart, Robert Streetman, Larry Wagner, Fred Fox and John Tatarko

SESSION NO. 130—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Applied Agronomic Research and Extension: II

ASA Section: Education & Extension

- 130-1 415 **The Synergy of on-Farm-Tests and Small Plot Research in Managing Nitrogen for Wheat Yield and Protein.** John R. Heard*
- 130-2 416 **Factors Impacting Yield of Irrigated Grain Sorghum in Arkansas.** Jason Kelley*, Tyler Keene and Scott Hayes
- 130-3 417 **Evaluating Corn Performance Based on Injury Following a Major Hail Event.** Christopher A Proctor*, Roger Elmore, Nathan D. Mueller, John A Wilson, Gary Zoubek, Todd Whitney, Troy Ingram and Anthony McMechan
- 130-4 418 **Evaluation of Poultry Litter Storage Option for Protecting Kansas Water Quality.** Barrett Smith*, Peter J. Tomlinson and Herschel George
- 130-5 419 **Low Cost Sustainable Agriculture Kits (SAKs) As an Agronomic Strategy to Improve Farmer's Livelihoods in Nepal.** Tejendra Chapagain*, Roshan Pudasaini, Kamal Khadka, Kirit Patel, Ram B. Rana and Manish N. Raizada
- 130-6 420 **Deep, Residual Nitrogen Supports Grain Sorghum Yield.** Dennis L. Coker*, Mark L. McFarland, Tony L. Provin, Ronnie W. Schnell and Amir M.H. Ibrahim

- 130-7 421 **Using Soil and Topographic Characteristics for Corn Seeding Rate Optimization in Iowa.** Mark A. Licht*, Andrew W. Lenssen and Roger Elmore
- 130-8 422 **Livestock Farm Phosphorus Import/Export Analysis, and Strategies for Phosphorus Management.** Leslie A. Everett* and Randy Pepin
- 130-9 423 **Ten-Year Comparisons of Irrigation Use from the Ogallala Aquifer in the Texas South Plains.** Charles P. West*, C. P. Brown, R. L. Kellison, D. M. Mitchell, P. N. Johnson and W. J. Pate
- 130-10 424 **Evaluating Multi-Species Cover Crops for Forage Production.** Cathryn Davis*, DeAnn R. Presley, Jaymelynn Farney and Gretchen F. Sassenrath
- 130-11 425 **Agronomic Responses of Corn Hybrids to Plant Density in Central Louisiana.** Daniel D. Fromme*, Josh Lofton and Naveen Adusumilli
- 130-12 426 **Corn Response to Accomplish LM in Northwestern Ohio.** Edwin M. Lentz*
- 130-13 427 **Four Years and Counting: An Update on Seasonal Soil Testing Variation.** J. Larry Oldham*, Karl Keith Crouse, Bisoonat Macoon, Mark W. Shankle, M. Wayne Ebelhar and Bobby R. Golden

SESSION NO. 131—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

General Extension Education: II

ASA Section: Education & Extension

- 131-1 500 **Impact of Choosing the Right Soil Test: Lessons Learned in Saline and Sodic Environments.** Robert P. Flynn*
- 131-2 501 **Sorghumyield App, a New Tool for Predicting Sorghum Yields: Validation and Calibration.** Ignacio Antonio Ciampitti, Ana Julia Azevedo, Guillermo R. Balboa and Nicolas Bossio*
- 131-3 502 **Inspiring the Next Generation of Agronomists through New Biofuel Educational Resources.** Martin Battaglia*, Hannah Scherer and John Herschel Fike
- 131-4 503 **Graduate Extension Scholars: Learning the Skills of Silvopastoralism.** Gabriel Pent*, Hannah Scherer and John Herschel Fike
- 131-5 504 **Comparison of Organic and Conventional Soybean Production in Arkansas.** Carly Bokker* and William Jeremy Ross
- 131-6 505 **Perspective of Agriculture and Natural Resource Extension Educators on Climate Change and Resource Needs for the North Central Region.** Peter J. Tomlinson*, Lesley Lubenow, Jerome Clark and Tyler Williams
- 131-7 506 **Welcome to the 4R Nutrient Management Casino!** John R. Heard*, Donald Flaten and Marla Riekman

SESSION NO. 132—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Agricultural Practices to Improve Nitrogen-Use Efficiency and Mitigate Greenhouse Gas Emission: I (includes student competition)

ASA Section: Environmental Quality

- 132-1 606 **Nitrous Oxide and Ammonia Emissions from N Fertilization of Maize in a Brazilian Midwest Oxisol.** Maria da Conceicao Santana Carvalho*, M@io Reis Martins, Beata Esmoke Madari, Claudia Pozzi Jantalia, Katharina Plasmann, Luis Omar Torres Dorante and Nelson Horowitz

- 132-2 607 **The Role of Reduced Tillage and Organic Agriculture in Soil Nitrous Oxide Emissions.** Sean Bloszies* and Shuijin Hu
- 132-3 608 **In-Season N Reduced Nitrous Oxide Emissions in Corn.** Peter C. Scharf*
- 132-4 609 **Low Potential for Nitrous Oxide Emission with Switchgrass Production.** Curtis J. Dell*
- 132-5 610 **Split Application of Urea Does Not Decrease and May Increase Nitrous Oxide Emissions in Rainfed Corn.** Rodney T. Venterea*, Jeffrey A. Coulter and Michael S. Dolan
- 132-6 611 **4R Nitrogen Management and Nitrous Oxide (N₂O) Emissions for Irrigated Potato Production in Manitoba.** Kevin Baron*, Sally Parsonage and Mario Tenuta
- 132-7 612 **The Role of Sub-Surface Drip Irrigation in Reducing Nitrous Oxide Emissions in the California Central Valley.** Ryan Byrnes*, Martin Burger and William R. Horwath
- 132-8 613 **Reduce N₂O Emission By a New Fertilizer System for Maize-Cabbage Double Cropping Using Plastic Mulch Film.** Ayaka W. Kishimoto-Mo*, Kumiko Baba-Mochizuki, Noriko Oura, Tomomi Kato and Katsuhiko Nagasaka
- 132-9 614 **What Are the Key Drivers of Nitrification Inhibitor Efficacy in Australian Agricultural Soils?** Helen Suter*, Rohan Davies, Charles Walker and Deli Chen
- 132-10 615 **Temporal Analysis of Nitrous Oxide Emissions from a Pennsylvania No-till Dairy Cropping System.** Maria Ponce de Leon*, Curtis J. Dell and Heather D. Karsten
- 132-11 616 **Ammonia Emissions from Stabilised Urea Fertiliser Formulations in Temperate Grassland.** Patrick J Forrester*, Mary Harty, Gary J Lanigan, Catherine Watson, Ronnie Laughlin, Gavin McNeill, Rachael Carolan and Karl G Richards
- 132-12 617 **Calcium Ammonium Nitrate, Urea or Stabilised Urea: The Impact on Yield and Apparent Fertiliser Recovery in Intensive Grassland.** Mary Harty*, Patrick J Forrester, Gary J Lanigan, Gavin McNeill, Rachael Carolan, Karen McGeough, Ronnie Laughlin, Deirdre Hennessy, Chris Elliott, Catherine Watson and Karl G Richards
- 132-13 618 **Nitrous Oxide Emissions in a Corn-Soybean Cropping System with and without Tile Drainage.** Apurba K Sutradhar*, Fabian G. Fernandez, Rod Venterea and Seth Naeve
- 132-14 619 **Nitrate Leaching in Brazilian Cropping Systems without Nitrogen Fertilization.** Gustavo Castoldi*, Mariangela Brito Freiberger, Laércio Augusto Pivetta, Tyson E. Ochsner and Ciro Antonio Rosolem
- 132-15 620 **Effect of Cover Crops and Nitrogen Application Timing on Nutrient Loading through Subsurface Drainage.** Richard T. Roth*, Michael D. Ruffatti, William T. Deppe and Shalamar D. Armstrong
- 132-16 621 **Effect of Nitrogen Source and Inhibitors on Spring Barley Grain Yield.** Leanne Roche*, Patrick J Forrester, Gary J Lanigan, Karl G Richards, Elizabeth J Shaw, Michael J Gooding, Richard A. Hackett and David P. Wall
- 132-17 622 **Effects of Controlled-Release Fertilizers on Nitrate Content and Yield of Japanese Mustard Spinach.** Ryusaku Matsuba* and Shinjiro Sato
- 132-18 623 **Quantification of Ecosystem Services from Temporal Intensification of Crop Production Across a Longitudinal Gradient.** Paul R. Adler*, Frederick M. McNeal, Gregory W. Roth, Steven Wallander, Stephen J. Del Grosso and William J Parton
- 132-19 624 **Overwinter and in-Season Nitrogen Mineralization for Sugarbeet from Solid or Composted Dairy Manure.** Gary A. Lehrsch*, Brad Brown, Rodrick D. Lentz, Jodi L. Johnson-Maynard and April B. Leytem
- 132-20 625 **Integrating Legume-Based Forages and Short-Season Grain Corn into Double-Cropping Systems.** Daniel Raskin*, M. Scott Wells, Julie Grossman and Craig C. Sheaffer
- 132-21 626 **Effects of Biochar Amendment on GHG Emissions from Tropical Agricultural Soils in Hawaii.** Jabez Meulemans*, Susan E. Crow, Lauren Deem, John Yanagida and Jonathan Deenik

SESSION NO. 133—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Agronomic, Environmental, and Industrial Uses of Biochar: I (includes graduate student comp)

ASA Section: Environmental Quality

President: Carl Bolster, Jason Streubel

- 133-1 514 **Determining C:N Ratios of the Labile Biochar Fraction.** Santanu Bakshi*, Chumki Banik and David A. Laird
- 133-2 515 **Corn and Soil Response to Biochar Application and Stover Harvest.** Natalia Rogovska*, Chumki Banik, David A. Laird, Mark D. Tomer and Douglas L. Karlen
- 133-3 516 **Modification of Proximate Analysis Method for Biochars.** Deborah Aller*, Santanu Bakshi and David A. Laird
- 133-4 517 **Designchar4food (d4f) Network: Enhancing Soil Carbon and Fertility While Reducing Greenhouse Gas Production through Biochar Application.** Jeffrey Novak*, Gilbert C. Sigua, James A. Ippolito, Kurt A. Spokas and Rodney Venterea
- 133-5 518 **Phosphorus Sorption Behavior in Biochar-Amended Soils.** Nilovna Chatterjee*, Biswanath Dari, Vimala D. Nair and Ramachandran P.K. Nair
- 133-6 519 **Biochar's Impact on Chemical and Microbial Processes Influencing Nitrogen Cycling in Agricultural Soils.** Matt Ramlow* and M. Francesca Cotrufo
- 133-7 520 **Soil Aggregate Formation and Stability Induced By Application of Biochar Derived from Anaerobic Digestion Effluent.** Yoshiyuki Hirata* and Shinjiro Sato
- 133-8 521 **Influence of Biochars on Nutrient Uptake and Yield of Corn and Soybean at Two Different Landscape Positions.** Rajesh Chintala*, Thomas Schumacher, Ron H. Gelderman, Saroop Sandhu, Sandeep Kumar, David E. Clay and Douglas D. Malo
- 133-9 522 **Impacts of Biochar on the Fate and Transport of the Soil Fumigant 1,3-Dichloropropene.** Daniel Ashworth* and Scott Yates
- 133-10 523 **Growth of Hard Red Spring Wheat in Crude Oil Contaminated Soils Treated By Thermal Desorption.** Thomas M. DeSutter, Peter O'Brien*,

- Kevin Horsager, Nathan E. Derby, Francis X.M. Casey and Abbey Foster Wick
- 133-11 524 **Effects of Peanut Shell and Mixed Wood Biochars on Soil N Supply Rates and Pearl Millet (*Pennisetum americanum*) Yield.** Andre Diatta*, John Herschel Fike, Wonae Fike, Gabriel Pent and Martin Battaglia
- 133-12 525 **Biochar and Manure Amendments Effect on Soil Extracellular Enzymatic Activity Under Limited Irrigation Agriculture.** Erika Foster*, M. Francesca Cotrufo and Neil C. Hansen
- 133-13 526 **Soil Chemical Changes of Coastal Plains Ultisols with Winter Wheat: Contrasting Effects of Sorghum Biochars and Sorghum Residues.** Gilbert C. Sigua*, Patrick G Hunt, Kenneth C. Stone and Jeffrey Novak
- 133-14 527 **A Rapid-Test for Biochar Effects on Seed Germination.** Mark G. Johnson*, Tamotsu Shiroyama, David Olszyk and Jeffrey Novak
- 133-15 600 **Temperature and Moisture of Biochar Amended Soils in Irrigated Maize.** Neil C. Hansen, Shane R Evans* and Allan A. Andales
- 133-16 601 **The Utility of Activated Charcoal for the Remediation of Herbicide Contaminated Soils.** Muthu V Bagavathiannan, Paul A. Baumann, Thomas Isakeit, Joe Masabni, Matt Matocha, Katherine Carson and Tony L. Provin*
- 133-17 602 **Sodic Soil Reclamation Potential of Gypsum and Biochar Additions: Influence on Chemical, Physical, and Biological Parameters.** Eric C. Schultz*, Amitava Chatterjee, Tom DeSutter and David Franzen

SESSION NO. 134—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Gypsum Uses in Agriculture: II

ASA Section: Environmental Quality

- 134-1 603 **Assessing Benefits and Risk of Using Flue Gas Desulfurized Gypsum (FGDG) As Soil Amendment in a Coastal Plain Soil.** Dinku Endale*, Timothy Strickland, David D. Bosch, Thomas L. Potter, Alisa Coffin and Harry H. Schomberg
- 134-2 604 **Using Gypsum to Reduce Tuber Rot and Increase Potato Yields on Sandy Loam Soils.** Mark S. Reiter* and Steven L. Rideout
- 134-3 605 **Potential Benefits Associated with the Use of FGD Gypsum in Arkansas.** Leo Espinoza*, Christopher Henry, Paul Francis and Mukhammadzakhrab Ismanov

SESSION NO. 135—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Influence of Soil & Crop Management on Soil Health & Environmental Quality: II

ASA Section: Environmental Quality

- 135-1 507 **Baseline Soil Quality within a Lower Mississippi River Alluvial Basin Agricultural Watershed.** Martin A. Locke*, John J. Ramirez-Avila, Diane E. Stott, Douglas L. Karlen and Wade Steinriede Jr.
- 135-2 508 **Impacts of Integrated Crop-Livestock System on Soil Health Parameters.** Colin Tobin*, Sandeep Kumar, Douglas D. Malo, Peter J. Sexton, Shoukat Ali and Elaine Grings

- 135-3 509 **The Impact of Crop Diversity on Soil Health and Crop Production.** Shannon L. Osborne*, R. Michael Lehman and Walter E. Riedell
- 135-4 510 **Effects of Pecan Waste Products on Soil pH and Soilborne Pathogens in the Arid Southwest.** Omololu J. Idowu* and Soum Sanogo
- 135-5 511 **Exploring the Potential for Grafted Tomatoes to Increase Yields, While Decreasing Soil Fumigant Use, in California.** Minghua Zhang, Michael L. Grieneisen*, Brenna Aegerter and C. Scott Stoddard
- 135-6 512 **Effect of Emerging Contaminants Gallium and Indium on the Growth of Rice Seedlings.** Dar-Yuan Lee*, Po-Hsuan Chien, Jeng-Yan Su and Pei-Yu Jiang
- 135-7 513 **Evaluation of Management Practices on the Efficacy of *Pasteuria Nishizawae* As a Biocontrol Agent of Soybean Cyst Nematode.** Marian Lund*

SESSION NO. 136—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Breeding and Managing Perennial Crops for Food, Fiber, and Fuel

ASA Section: Global Agronomy

- 136-1 627 **Optimal Nitrogen Fertilizer Rates to Maximize Seed Yields from the Perennial Grain Crop Intermediate Wheatgrass (*Thinopyrum intermedium* L.).** Charles Frahm*
- 136-2 700 **Genome and Transcriptome Sequencing of Intermediate Wheatgrass (*Thinopyrum intermedium*) Provides Resources for the Development of a New Perennial Grain Crop.** Kevin M Dorn*, Shuwen Wang, Donald L. Wyse, Jane Grimwood, Steve R. Larson, Jeremy Schmutz, Jesse Poland and Lee R. DeHaan
- 136-3 701 **Propagation of Hybrid Hazelnuts from Hardwood Stem Cuttings in Low-Cost Humidity Tents.** Lois Braun*
- 136-4 702 **Searching for the Genetic Basis of Cold Tolerance in Maize's Sister Genus *Tripsacum*.** Christine Gault*, Joshua Budka, Denise Costich, Eli Rodgers-Melnick, Nicholas Lepak and Edward Buckler
- 136-5 703 **Structural Characterization of Proteins in Wheat Doughs Enriched with Perennial Wheatgrass (*Thinopyrum intermedium*).** Alessandra Marti*, Baraem Ismail and Koushik Seetharaman
- 136-6 704 **Rheological Properties of Perennial Wheatgrass (*Thinopyrum intermedium*) and Its Blends with Wheat Flour.** Alessandra Marti*, Koushik Seetharaman and Tonya C. Schoenfluss
- 136-7 705 **Mapping Quantitative Trait Loci Controlling Seed and Grain Production Traits of Intermediate Wheatgrass (*Thinopyrum intermedium*).** Steve R. Larson*, Traci Kantarski, Jesse Poland, Xiaofei Zhang, Lee DeHaan, Kevin B. Jensen and James A. Anderson
- 136-8 706 **The Effects of Gasoline-Biodiesel Blended Fuels on Spray Characteristics and Engine Combustion.** Ocktaeck Lim* and Sakda Thongchai
- 136-9 707 **Examination of Maximilian Sunflower (*Helianthus maximiliani* Schrad.) Ideotypes with Restricted Branching.** Sean Robert Asselin*

- 136-10 708 **Effects of Soil Properties and Environmental Factors on Biomass Yield and Disease Incidence in Energy Cane.** Hardev Singh Sandhu*, Robert A. Gilbert, Jack Comstock and Vanessa Gordon
- 136-11 709 **A Comparative Aroma Analysis of Intermediate Wheatgrass and Whole Wheat Bread Crusts.** Kelsey Sneddon*
- 136-12 710 **Cytogenetic Characterization of Perennial Wheat Breeding Lines.** Julia L. Piaskowski*, Stephen S. Jones and Kevin M. Murphy

SESSION NO. 137—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Military Land Use and Management: II

ASA Section: Land Management & Conservation

- 137-1 711 **Evaluating the Direct Effects of Heavy Machinery on Gopher Tortoise Burrows.** R. Scott Taylor*, Lora Smith, Jennifer M Howze and Mathew Hinderliter
- 137-2 712 **Reducing Risk in Invasive Species Management.** Harold E. Balbach*, Lisa Rew and Robert M Lacey
- 137-3 713 **Development of a Tool for an Integrated Approach to Land Impacts from Military Training.** Matthew Hiett* and Natalie Myers

SESSION NO. 138—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Soil Health in Agroecosystems: I (includes graduate student competition)

ASA Section: Land Management & Conservation

- 138-1 714 **Mid-South Cover Crops Influences Soil Microbial Communities.** Ina Iris Sanchez*, Beatrix J. Haggard, Josh Lofton, Lisa M. Fultz, Autumn Acree, Cory L. Cole and David Blouin
- 138-2 715 **Evaluation of Cover Crops to Improve Soil Health.** Chandra Heglund* and Abbey Foster Wick
- 138-3 716 **Simplification of Cropping Landscape Does Not Drive Insecticide Use in the USA.** Minghua Zhang* and Wan-Ru Yang
- 138-4 717 **Soil Microbial Diversity and Nutrient Cycling in Dual Purpose Wheat Systems.** Partson Mubvumba*, Paul B. DeLaune, Charles Coufal and Phyllis Dyer
- 138-5 718 **Evaluation of Some Soil Health Parameters in Pasture-Based Beef Pastures in Southern Piedmont of Georgia.** Subash Dahal*, Dorcas H. Franklin, Taylor Hendricks, Miguel L. Cabrera, Dennis W. Hancock, Deepak Mishra, Laura Ney and Kishan Mahmud
- 138-6 719 **Comparing Continuous and Tactical Grazing Systems for Improved Soil Health and Cleaner Water in the Better Grazing Project.** Taylor Hendricks*, Dorcas H. Franklin, Subash Dahal, Miguel L. Cabrera, Dennis W. Hancock, Daniel Markewitz, Laura Ney and Kishan Mahmud
- 138-7 720 **Measuring Soil Quality Changes in Corn and Soybean Rotations.** Mollie J. Adams*, Gevan D. Behnke, Emerson D. Nafziger and Maria B. Villamil
- 138-8 721 **The Conservation Cropping Systems Initiative: A Model Approach for Conservation Technology Transfer.** W. Ashley Hammac*, Barry Fisher, Lisa Holscher, Jennifer Boyle Warner, Les Zimmerman and Eileen J. Kladviko

- 138-9 722 **Potentially Mineralizable Nitrogen As a Soil Health Indicator in a Long-Term Agro-Ecosystem Research Site.** Kristen Sloan Veum*, Robert J. Kremer, Kenneth A Sudduth and Newell R Kitchen
- 138-10 723 **Intercropping Legumes for Weed Management and Nitrogen Fixation in Organic Papaya in Costa Rica.** Robin Gomez*
- 138-11 724 **Effect of Prairie Conservation Strips on Soil Properties within a No-till Corn and Soy System.** Julia Mueller* and Matt Liebman
- 138-12 725 **Interseeding Cover Crops in Corn: Impacts on Corn Yield and Cover Crop Biomass Production in the Mid Atlantic.** Gregory W. Roth*, William Curran, Matthew Ryan and Steven Mirsky
- 138-13 726 **A Grassroots Approach to Integrating Soil Health Metrics into Farm Management Decisions: The Role of Conservation Districts.** Kendall Kahl*, Tabitha Brown, David R. Huggins and Ken Stinson
- 138-14 727 **Understanding Soil Health from a Management Perspective: From Concept to Field Operations.** Tabitha T. Brown*, Kendall Kahl and David R. Huggins
- 138-15 800 **Implementation of Cover Crops in Nebraska Corn and Soybean Cropping Systems.** Christopher Proctor*, Roger Elmore, Humberto Blanco, Richard B. Ferguson, Charles A. Francis, Derek Heeren, Charles A. Shapiro, Tim M. Shaver, Matt Stockton and Katja Koehler-Cole

SESSION NO. 139—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

C-2/C-4 Graduate Student Poster Competition (includes student competition)

C02 Crop Physiology and Metabolism

- 139-1 801 **Influence of Water Availability on Photosynthetic Characteristics of Diverse Soybean (*Glycine max*) Genotypes.** Brett Naylor* and Felix B. Fritschi
- 139-2 802 **Lipid Metabolism in Soybean Seeds during Drought Stress.** Andressa Nakagawa*, Nobuyuki Ario, Yuki Tomita, Seiya Tanaka, Naoki Murayama, Chiaki Mizuta, Yushi Ishibashi and Mari Iwaya-Inoue
- 139-3 803 **Physiological Tradeoffs of Stomatal Closure Under High Evaporative Gradients in Field Grown Soybean.** Viviana Medina* and Matthew E Gilbert
- 139-4 804 **Soybean Fruit Development and Establishment at the Node Level Under Combined Photoperiod and Radiation Environments.** Magali Nico*, Anita Ida Mantese, Daniel Julio Miralles and Adriana Graciela Kantolic
- 139-5 805 **Regulation of Pod Growth of Soybean By Light Signaling.** Nobuyuki Ario*, Andressa Nakagawa, Yuki Tomita, Seiya Tanaka, Chiaki Mizuta, Naoki Murayama, Yushi Ishibashi and Mari Iwaya-Inoue
- 139-6 806 **High Throughput Phenotypic Evaluation of Drought-Related Traits in Soybean.** Hua Bai*
- 139-7 807 **Relationship of Cytokinin to Green Stem Syndrome of Soybean.** Yuki Tomita*, Andressa Nakagawa, Nobuyuki Ario, Seiya Tanaka, Chiaki Mizuta, Naoki Murayama, Yushi Ishibashi and Mari Iwaya-Inoue

- 139-8 808 **Agronomic Management Changes Canopy Yield Component Distribution.** Katharine Parker*, Ross R. Bender and Frederick E. Below
- 139-9 809 **The Role of Wrky Transcription Factor on Rapid Stomatal Closure Induced by Drought Stress in Cowpea.** Misaki Tochiwara*, Shinya Murakami, Nene Miura, Yushi Ishibashi and Mari Iwaya-Inoue
- 139-10 810 **Genetic Variation for Chilling Stress Among Short-Season Maize Inbred Lines.** Wisam Obaidat*, Lewis Lukens and Hugh J. Earl
- 139-11 811 **Elevated Temperature Affects Grain Set and Reproductive Growth of Tropical Maize Hybrids.** Kayla Thomason*, John E. Erickson, Kenneth J. Boote, Karen Koch and Jiahn-Chou Guan
- 139-12 812 **Evaluating Diverse Corn Genotypes for Biomass Production in Iowa.** Pedro A. Infante Posada*, Kenneth J. Moore and Sotiris V Archontoulis
- 139-13 813 **Earshoot N Dynamics during the Critical Period for Maize.** Sarah M. Brooks*, James J. Camberato, John Shanahan and Tony J. Vyn
- 139-14 814 **Modeling Carbon Allocation of Young Maize Seedlings Under Sink Manipulation.** Kyungdahm Yun* and Soo-Hyung Kim
- 139-15 815 **Three-Way Cross Maize Hybrids Show Herbicide Resistance and Tolerance to Striga Hermonthica (Del.) Benth with Herbicide Seed Treatment Under Artificial Infestation.** Olanike Omolehin*, Abebe Menkir and Victor Olawale Adetimirin
- 139-16 816 **Water Use Efficiency in Sorghum-Pigeonpea Diversified Cropping Systems in Marginal Areas of Ghana and Mali.** Princess Adjei-Frimpong*
- 139-17 817 **Sorghum Stalk Rot Pathogens Affect Transcription of Key Genes Involved in Chlorophyll Metabolism of a Non-Staygreen, Disease Susceptible Genotype.** Ananda Yapa Bandara*, Dilooshi K Weerasooriya, Sanzhen Liu and Christopher R Little
- 139-18 818 **Spectral Vegetation Indices for Estimating Growth of Winter Wheat Genotypes.** Sarah Opeyemi Ajayi*, Qingwu Xue, Nithya Rajan, Amir M.H. Ibrahim, Srirama Krishna Reddy, Jackie C. Rudd, Shuyu Liu, Ruixiu Sui and Kirk E Jessup
- 139-19 819 **Infrared Thermal Imaging for Estimating Crop Canopy Temperature.** Mahendra Bhandari*, Shuyu Liu, Qingwu Xue, Jackie C. Rudd and Bobby A Stewart
- 139-20 820 **Evaluation of Milling and Baking Quality QTL in a AGS 2000 x NC-Neuse Soft Red Winter Wheat Population.** Steven Edward Mulkey*, Jeanette Lyerly, Stine Petersen, Peter Maloney, Gina L. Brown-Guedira and J. Paul Murphy
- 139-21 821 **Association Mapping in the Nsgc 6-Row Barley NAM Population.** Alexandra Ollhoff* and Kevin P. Smith
- 139-22 822 **Exploring the Possibility of Multi-Year Perennial Ryegrass Seed Production in Minnesota.** Garrett Carl Heineck*, Eric Watkins and Nancy Jo Ehlke
- 139-23 823 **Switchgrass Responses to Manganese Availability.** Ying Guo* and Felix B. Fritschi
- 139-24 824 **Concentrations of Non-Structural Carbohydrates in Tissues of Low, Medium, and High Vigor Cotton Seedlings.** Shengjun Liu*, Melissa Remley and Felix B. Fritschi
- 139-25 825 **Improving Cotton Water Use Efficiency Using Plant-Based Irrigation Scheduling.** Daryl Chastain*, John Snider, Guy D Collins, Jared Whitaker, Calvin Perry and Seth A Byrd
- 139-26 826 **Phenotyping Cotton in a Water Regression Analyses.** Luke Obenhaus* and Glen Lorin Ritchie
- 139-27 827 **Assessing the Utility of Primed Acclimation for Improving Water Use Efficiency in a Sensor-Based Irrigation Scheduling System.** Calvin Meeks*, John Snider, Wesley M Porter, George Vellidis and Gary Hawkins
- 139-28 900 **Modeling Crop Response to Climate Change: Empirical Processes to Capture Extreme Heat and CO₂ Enrichment Effects.** Jeffrey Kent*, Yao Zhang and Keith Paustian

SESSION NO. 140—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Division C-3 MS Graduate Student Poster Contest Guidelines for 2015

C03 Crop Ecology, Management & Quality

- 140-1 901 **Irrigated Corn Response to Nitrogen and Populations.** Julie Baniszewski*
- 140-2 902 **Farming Systems Approaches to Concomitantly Increase Corn Yield and NUE.** Ana Julia Azevedo* and Ignacio Antonio Ciampitti
- 140-3 903 **Foliar Micronutrients for Greater Corn Yield.** Brad Bernhard*, Ross R. Bender and Frederick E. Below
- 140-4 904 **Alleviating the Continuous Corn Yield Penalty with Crop Management.** Alison M. Vogel*, Laura F. Gentry and Frederick E. Below
- 140-5 905 **Drought Tolerant Corn Yield Response to Water Availability.** Trenton Newell*
- 140-6 906 **Wheat and Soybean Response to Controlled and Uncontrolled Field Traffic.** Tyler Kitchen Black*, David L. Holshouser, Wade E. Thomason and Marcus M. Alley
- 140-7 907 **Plant, Soil, and Weather Based Cues for Irrigation Timing in Soybean Production.** Justin Chlapecka*, Amanda Hayes Mann, Nelson Benson, Keith Morris, Michele Reba and Tina Gray Teague
- 140-8 908 **Changing the Source-Sink Ratio in Soybean Affects the Amount and Quality of Grain Protein.** Matthew Pfarr* and Seth Naeve
- 140-9 909 **Factors That Influence Soybean Protein and Oil Content.** Aaron Brooker* and Laura Lindsey
- 140-10 910 **Seeding Rate and Row Width Recommendations for Ohio Soybeans.** James Latham Farley*, Sam Custer and Eric Richer
- 140-11 911 **Effects of Selection for Drought Tolerance on Pearl Millet Seed Physical and Chemical Composition.** Marieme Drame*, Wade E. Thomason and Mame Codou Gueye
- 140-12 912 **Field Interactions Between Ozone and Naturally Occurring Fungal Disease in Maize Inbreds.** Ilse Barrios Perez*, Darin Eastburn and Patrick J. Brown
- 140-13 913 **The Effect of Residue Management, Row Spacing, and Seeding Rate on Winter Canola Establishment and Survival.** Baylee Showalter*
- 140-14 914 **Assessing Current Boron Recommendations for Peanut Production through Remote Sensing, Agronomic Factors, and Seed Germination.** Anna Benton*, Maria Balota, David S. McCall, Gregory E. Welbaum and Joseph Oakes

- 140-15 915 **Impact of Defoliation Timing on Peanuts.** Jeff Gore, Chad Abbott* and Jason M. Sarver
- 140-16 916 **Differential Responses of Advanced Potato Clones to Primed Acclimation for Drought Tolerance in a Peruvian Potato System: Yield and Physiological Effects of Irrigation Timing.** Kelly Racette*, George Hochmuth, Diane L. Rowland, Jerry M. Bennett and David Ramirez
- 140-17 917 **Barley: A New Perspective on an Old Crop in Texas.** Lauren Wolohojian*
- 140-18 918 **Effect of Delaying Initial Irrigation on Cotton Using the Mobile Crop Water Use Application.** Zachary K. Straatmann* and Gene Stevens

SESSION NO. 141—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Division C-3 PhD Graduate Student Poster Contest Guidelines for 2015

C03 Crop Ecology, Management & Quality

- 141-1 919 **Plant Population Influences on Post-Silking N Uptake Vary with Hybrid Eras and N Rates.** Keru Chen*, Tony J. Vyn, Matthijs Tollenaar, Saratha V. Kumudini, James J. Camberato and Mitchell R. Tuinstra
- 141-2 920 **Agronomic Responses of Corn Hybrids to Drought Stress and Nitrogen Supply.** Samadanga Ao*, Jeffrey A. Coulter, Michael P. Russelle, Tamas Varga and Gary W. Feyereisen
- 141-3 921 **Corn Yield Response Under Winter Cover Crops: An Updated Meta-Analysis.** Guillermo Marcillo* and Fernando Miguez
- 141-4 922 **Closing Yield Gaps in Corn and Soybean: Impact of Different Management Practices.** Guillermo R. Balboa*, Ignacio A. Ciampitti, William M. Stewart, Fernando O. Garcia, Eros Artur Bohac Francisco Sr. and Fernando Salvaggiotti
- 141-5 923 **Using Fluopyram Fungicide Seed Treatment for Control of *Fusarium virguliforme* and Increasing Soybean Yield.** David A. Marburger*, Steve K. Vosberg, Damon L. Smith and Shawn P. Conley
- 141-6 924 **Planting Date x Maturity Group Analysis for the Upper Midwest to Maximize Early Planted and Replanted Soybean Yield.** Adam P Gaspar*, Seth Naeve and Shawn P. Conley
- 141-7 925 **Managing Seed Return of Volunteer Canola in Soybean Production.** Charles M. Geddes* and Robert H. Gulden
- 141-8 926 **Effects of Rotation, Irrigation and Cultivar on Cotton Yield with Root-Knot Nematode.** Martha R. Zwonitzer* and J. Wayne Keeling
- 141-9 927 **Supplemental and Alternative Forage Options in Winter-Killed Alfalfa.** Reagan L. Noland*, M. Scott Wells, Krishona L. Martinson, Roger L. Becker and Craig C. Sheaffer
- 141-10 928 **Seasonal Water Withdrawal Patterns of Spring Safflower Under Growth Stage Based Irrigation Managements.** Sukhbir Singh*, Sangamesh Angadi, Kulbhushan K. Grover, Rolston St. Hilaire and Sultan Begna
- 141-11 929 **Performance of Camelina (*Camelina sativa* L. Crantz) Under Semiarid Conditions in Central Great Plains, USA.** Eric Obeng*, Augustine K Obour, Nathan O. Nelson and Ignacio A. Ciampitti
- 141-12 930 **Modeling Weedy Sorghum Population Dynamics in a Stochastic Herbicide-Tolerant Sorghum Cropping System.** Rodrigo Werle*, Brigitte Tenhumberg and John L. Lindquist

SESSION NO. 142—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Seed Physiology, Production & Technology: II

C04 Seed Physiology, Production & Technology

- 142-1 931 **Kentucky Bluegrass (*Poa pratensis* L.) Germplasm for Seed Production without Field Burning.** William J. Johnston*, Charles T. Golob and Richard C. Johnson
- 142-2 932 **Agronomic Performance, Seed Quality and Seed Composition Evaluation in Soybean Inbred Lines Exposed to Environmental Stimuli.** Grace Kaudzu*, A. Susana Goggi and Russell Mullen
- 142-3 933 **Enhancing Nitrogen Fertilizer Efficiency and Seed Yield in Perennial Ryegrass Crops with Urease Inhibitors.** Nicole P. Anderson*, Thomas G. Chastain and Carol J. Garbacik
- 142-4 934 **Transgene Movement in Commercial Alfalfa Seed Production: Implications for Seed Purity.** Sandya R Kesoju*, Stephanie L Greene, Ruth C Martin and Matthew H Kramer
- 142-5 935 **Accumulation of Oil and Protein Content in Developing Cottonseeds.** Neha Kothari, Drew Sturtevant, Jane K. Dever, Kent Chapman, Richard G. Percy and Lori Hinze*

SESSION NO. 143—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Graduate Student Poster Competition: Golf Course Management and Cultural Practices

C05 Turfgrass Science

- 143-1 1022 **Effects of Exogenous Application of Different Chemical Compounds for Improving Performance of Creeping Bentgrass Under Drought.** Naba Amgain*, Enzhan Song and Xi Xiong
- 143-2 1023 **Sandcapping, Subsoil, and Irrigation Effects on Bermudagrass Fairway Performance.** Don Dyer*, Benjamin Wherley, Kevin J. McInnes, W Casey Reynolds and James C. Thomas
- 143-3 1024 **Reducing Salinity Parameters with Cultivation Practices and Products on Golf Course Fairways.** Li Li* and Joseph Ronald Young
- 143-4 1025 **A Soil Surfactant Improves Creeping Bentgrass and Annual Bluegrass Performance Under Traffic Stress and Limited Irrigation.** Kevin Laskowski*, Emily B Merewitz and Kevin W. Frank
- 143-5 1026 **Effects of Organic Amendments and Cultural Practices on Soil Physical and Chemical Properties on Zoysiagrass (*Zoysia japonica*) Fairway.** Xiaowei Pan*, Xi Xiong, Robert J. Kremer, James T. English, Michael D. Richardson and Shiping Deng
- 143-6 1027 **Effect of Nitrogen Rate and Simulated Golf Cart Traffic on Buffalograss Rough Density.** Evan Alderman*, Jared A Hoyle, Steven J. Keeley and Jack D. Fry
- 143-7 1028 **The Influence of Iron Sulfate and Its Elemental Components on Dollar Spot Suppression.** David S. McCall, Erik H. Ervin, Nathaniel Reams, Shawn D. Askew and Camden D Shelton*
- 143-8 1029 **Chemical Prevention of Acidovorax Avenae Infection of Creeping Bentgrass (*Agrostis stolonifera*).** Arly M Drake* and David S. Gardner
- 143-9 1030 **Comparison of Cultivation Technologies for Use**

- on Creeping Bentgrass Putting Greens. Kyley H. Dickson*, John C. Sorochan, Gregg C. Munshaw, John Stier and James T Brosnan
- 143-10 1031 **Effects of Behind Center Distance on Creeping bentgrass (*Agrostis stolonifera* L.) Putting Greens.** Cory Yuriscic*, John C. Sorochan and Thomas A Nikolai
- 143-11 1032 **Evaluating Turfgrass Color through Digital Image Analysis Using Greenindex+ Turf Smartphone App.** Daniel P. O'Brien*, Douglas E. Karcher and Michael D. Richardson
- 143-12 1719 **Trends in Water Use and Conservation Practices on U.S. Golf Courses.** Wendy D. Gelernter*, Larry J. Stowell, Mark Johnson and Clark D. Brown

SESSION NO. 144—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Graduate Student Poster Competition: Turfgrass Breeding and Genetics, Stress Tolerance

C05 Turfgrass Science

- 144-1 936 **Turf Performance of Two Seed-Producing Experimental Cultivars in Comparison with Commercial Cultivars in Shade.** Kyungjoon Koh, Yanqi Wu*, Greg Bell and Justin Quetone Moss
- 144-2 937 **Shade Response of Bermudagrass Accessions Under Varying Management Practices.** Jeffrey C Dunne*, Consuelo Arellano, Grady L. Miller and Susana R. Milla-Lewis
- 144-3 938 **Zoysiagrass Cultivars Performance Under Shade.** Jeffrey Beasley* and Kayla Sanders
- 144-4 939 **Membrane Composition Associated with Differential Heat-Induced Leaf Senescence in Fine Fescue Cultivars Contrasting in Heat Tolerance.** Jinyu Wang* and Bingru Huang
- 144-5 1000 **Quantitative Trait Loci Associated with Delayed Heat-Induced Senescence in Creeping Bentgrass.** David Jespersen*, Joshua Honig, Stacy A Bonos, William A. Meyer and Bingru Huang
- 144-6 1001 **Quantitative Trait Loci (QTL) Analysis of Freezing Tolerance in Zoysiagrass.** Helen McCamy Pruitt*, Brian M. Schwartz, Aaron J. Patton, Consuelo Arellano and Susana R. Milla-Lewis
- 144-7 1002 **Changes in Leaf and Crown Hormones Triggered By Cold Acclimation and Deacclimation in Two Cool-Season Turfgrasses.** Rachael Bernstein*, Michelle DaCosta, Sanalkumar Krishnan, Emily B Merewitz and Jeffery Scott Ebdon
- 144-8 1003 **Use of Energy Dispersive Spectroscopy for Elucidating Salinity Tolerance Mechanisms in Warm-Season Turfgrass Species.** Manuel Chavarria*, Benjamin Wherley, Mike Pendleton, Ambika Chandra, Russel W. Jessup and Raul Cabrera
- 144-9 1004 **Kentucky Bluegrass Seedling Growth As Affected By Chloride and Sulfate Salts.** Liqi Yang* and Qi Zhang
- 144-10 1005 **Tolerance to Saline, Waterlogging, and Their Combined Stress in Kentucky Bluegrass Cultivars.** Kevin Rue* and Qi Zhang
- 144-11 1006 **Assessing the Species Composition of Tall Fescue and Kentucky Bluegrass Mixtures.** Bradley S. Park*, Hiranthi Samaranyake and James A. Murphy

- 144-12 1007 **A Method for the Assessment of Allelopathy and the Identification of Allelochemicals within Fine Fescue Germplasm.** Long Ma*, Eric Watkins and Adrian Hegeman
- 144-13 1008 **Evaluation of Nickel Toxicity in *Deschampsia Cespitosa*: Analysis of Morphological Changes and DNA Methylation**
. Sabrina Rainville*, Kabwe K. Nkongolo, Melanie Mehes-Smith, Paul Michael and Peter Beckett
- 144-14 1009 **Evaluating Experimental and Commercially Available Bermudagrass Varieties for Divot Recovery Rate.** Lakshmy Gopinath*, Dennis L. Martin, Justin Quetone Moss and Yanqi Wu
- 144-15 1010 **Performance of Fine Fescues Under Abrasive Wear during Three Seasons.** Hui Chen*, Bradley S. Park and James A. Murphy
- 144-16 1011 **Using Differentially Expressed Genes, NBS-LRR Genes, and Comparative Genetics to Identify Leaf-Spot Resistant Buffalograss.** Elizabeth Niebaum*, Keenan Amundsen and Bimal Sajeewa Amaradasa
- 144-17 1012 **Quantitative Trait Loci (QTL) for Seed Head Characteristics in Bermudagrass.** Jeffrey C Dunne*, Sameer Khanal, Brian M. Schwartz, Susana R. Milla-Lewis and Andrew Paterson

SESSION NO. 145—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Graduate Student Poster Competition: Turfgrass Cultural Practices, Ecology and Environment

C05 Turfgrass Science

- 145-1 1033 **Turfgrass Performance As Influenced By Irrigation Sensors.** Daniel Sandor*, Douglas E. Karcher and Michael D. Richardson
- 145-2 1034 **Soil Moisture Dynamics of St. Augustinegrass Under Varying Irrigation.** Charles Henry Fontanier*, Benjamin Wherley, Jacqueline Aitkenhead-Peterson and Richard H. White
- 145-3 1035 **Syringing Kentucky Bluegrass: Frequency Impacts Canopy Temperature and Growth.** Sarah Bartholomew*, Kerri Russell, Neil Hansen and Bryan G. Hopkins
- 145-4 1036 **Soil Moisture Effects on Wear Tolerance of Native Soil Bermudagrass Athletic Fields.** Kyley H. Dickson*, John C. Sorochan, John C. Stier, James T Brosnan and Jaehoon Lee
- 145-5 1037 **Influence of Cultivation and Mowing Height on Tall Fescue Conversion to Sharp's Improved li' Buffalograss.** Jacob Reeves*, Jared A Hoyle, Steven J. Keeley and Dale J. Bremer
- 145-6 1038 **Effects of Mowing Height on Shade Tolerance of Bermudagrass and Zoysiagrass Cultivars.** Zhaoxin Chen*, Benjamin Wherley, W Casey Reynolds, Russel W. Jessup and James C. Thomas
- 145-7 1039 **An Alternative Approach to Aerification for a Tifway Bermudagrass Athletic Field.** Jordan Craft*, Christian M. Baldwin, Barry R. Stewart, Maria Tomaso-Peterson, James D. McCurdy and Eugene K Blythe
- 145-8 1100 **Accelerating Re-Establishment of Putting Greens Following Winterkill.** Darrell Michael*
- 145-9 1101 **Evaluation of Fertilizer Products for Turf Quality and Drought Tolerance.** Marco Schiavon, Jonathan Montgomery* and James H. Baird

- 145-10 1102 Evaluation of Creeping Bentgrass (*Agrostis stolonifera* L.) Responses to an Amino Acid Co-Product. Isaac Mertz* and Nick E. Christians
- 145-11 1103 Changes in Creeping Bentgrass Salinity Tolerance after Seed Priming with Polyamines. Yingmei Ma* and Emily B Merewitz
- 145-12 1104 Phosphite in Soil and Ryegrass. Baoxin Chang* and Elizabeth A. Guertal
- 145-13 1105 Site Selection for Application of Compost to Golf Course Fairways Guided By Inherent Soil Properties. Nathan E. Stacey*, Joan Davenport, Douglas P. Collins, Gwen Stahnke and Andy I. Bary
- 145-14 1106 In Pursuit of the "Self Feeding Lawn": Exploring the Feasibility of Grass-Legume Species Mixtures for Lawns. Gabriel Macke* and Cale A. Bigelow
- 145-15 1107 How Fungicides Affect Turfgrass Phylloplane Microbes. Joseph Doherty*, Megan Botti-Marino, Dave Ritchie, James P. Kerns and Joseph Roberts
- 145-16 1108 Effects of Pre-Planting Disruption of Kentucky Bluegrass (*Poa pratensis*) Lawns on the Establishment of Three Flowering Forbs for Use in Pollinator Conservation Schemes. Ian Lane*, Eric Watkins and Marla Spivak

SESSION NO. 146—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Graduate Student Poster Competition: Turfgrass Weeds, Diseases, and Insect Pests

C05 Turfgrass Science

- 146-1 1013 Effect of Selected Post-Emergence Herbicides to Control Windmillgrass. Enzhan Song* and Xi Xiong
- 146-2 1014 Smooth Bromegrass Control in Cool-Season Turfgrass. Matt Sousek*
- 146-3 1015 Use of Digital Image Analysis for Counting Dandelion Blooms in Field Plots. Quincy Daker Law* and Aaron J. Patton
- 146-4 1016 Endophytes As Biological Control Agents of Dandelions (*Taraxacum officinale*) in Turfgrass Systems. Dylan P Harding*
- 146-5 1017 Influence of Water Hardness on 2,4-D Efficacy in Field and Greenhouse Weed Control Experiments. Geoffrey Schortgen*, Aaron J. Patton and Daniel V. Weisenberger
- 146-6 1018 Evaluation of Nitrogen Source on the in Vitro Growth and Morphology of *Rhizoctonia Solani* AG 2-2 LP. John F. Koehler* and Gerald L. Miller
- 146-7 1019 Identification of *Pythium* Spp. from Creeping Bentgrass Greens in the Midwest. Max Gilley* and Lee Miller
- 146-8 1020 Large Patch (*Rhizoctonia solani*) Control Affected By Fungicide and Target Site of Application. Jesse J Benelli* and Brandon J. Horvath
- 146-9 1021 An Evaluation of Host Adaptation and Detection Methods for *Sclerotinia homoeocarpa*, the pathogen causing Dollar Spot of Turfgrass. Brian Aynardi*, Dr. Wakar Uddin and Dr. Maria del Mar Jimenez-Gasco

SESSION NO. 147—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Pedology: II (includes student competition)

SSSA Division: Pedology

- 147-1 1120 Evaluation and Classification of Nationwide Arable Land Quality in China. Bangbang Zhang* and Xiangbin Kong
- 147-2 1121 Pedogenic Pathways in Volcanic Ash Mantles of the Northern Rocky Mountains. Paul A. McDaniel* and Anita Falen
- 147-3 1122 Pedogenesis of Outwash-Derived Soils on Terraces of the Des Moines River. Ethan M. Dahlhauser*, C. Lee Burras, Franciszek Hasiuk and Andrew Manu
- 147-4 1123 Surface Rock Controls on the Development of Desert Varnish in the Mojave Desert, California. Eric Zautner* and Daniel Hirmas
- 147-5 1124 Integrating Spatial Education Experiences in West Virginia: Interpreting Conventional Soil Maps for Teaching and Learning Soil Science. James A. Thompson* and Sharon W. Waltman
- 147-6 1125 Soil Morphology and Soil Carbon in a Constructed Sandy Freshwater Tidal Wetland. Emily Ott*, John M. Galbraith, Thioro Fall and Walter Lee Daniels
- 147-7 1126 Hydropedology of Problematic Interfluvial Soils in the Central Piedmont of Virginia. Erik Severson*
- 147-8 1127 Soil Survey: Estimating Soil Linear Extensibility Percent Using General Linear Model. Cathy A. Seybold*
- 147-9 1128 Reexamining the Current Soil Order Classification of Maine's Glaciomarine Sediments. Mike Badzmierowski* and Mark H. Stolt
- 147-10 1129 Spatial Corn Yield Variability in the Loess Hills of Western Iowa: A Critical Look. Thomas Lawler*, Andrew Manu and Matthew T. Streeter
- 147-11 1130 C, N and P Concentrations of Four Subaqueous Soil Series Under Barnegat Bay, NJ. Kristy Northrup, Russell Briggs*, Charles Daniel Schirmer, Susan Demas and Robert Tunstead
- 147-12 1131 Restoration Age and Quality Effects on Dynamic Soil Properties at Nachusa Grasslands in Franklin Grove, IL. Sarah E. Smith* and Michael E. Konen
- 147-13 1132 Surface Soil Aggregate Stability Under Forest and Grass Vegetation Across Landscape Positions. Anne F Radintz*, Brad D. Lee, Samuel J. Indorante and Samuel J. Indorante
- 147-14 1133 Chemical Properties and Ecology of Andic and Spodic Forest Soils in the Northern Rocky Mountains. Max Ross*, Paul A. McDaniel and Mark J. Kimsey
- 147-15 1134 Comparison of Munsell Soil Color Chart to Color Sensor for Soil Color Determination. Roxanne Stiglitz*, Elena Mikhailova, Christopher Post and Mark A. Schlautman

SESSION NO. 148—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Soil Survey Present and Future: II

SSSA Division: Pedology

Presider: Candiss Williams

- 148-1 1135 Quantification of Outcomes Generated Using Multi-Scale Geomorphic Classification Systems in Predictive and Update Modes of Digital Soil Mapping. Karen L. Vaughan*, Robert Vaughan, Jay Stratton Noller, Taylor Cullum and Mackenzie Taggart

- 148-2 1136 **Future Directions in Soil Survey: Ecological Sites and Dynamic Soil Properties to Assess and Predict Soil Condition and Change.** Skye A. Wills, Stephen Roecker*, Zamir Libohova and Candiss Williams
- 148-3 1137 **Investigating the Potential of National Cooperative Soil Survey Information for Advancing Soil Science.** Daniel Gimenez*, Daniel Hirmas and Aoesta Mohammed
- 148-4 1138 **Soil Survey Disaggregation in a Low-Relief Depressional Wetland Landscape.** Maggie A Goldman*, Brian A. Needelman, Martin C. Rabenhorst, Gregory W. McCarty, Megan Lang, James E. Brewer and Phillip King
- 148-5 1139 **A Comparison of Iowa's Original Corn Suitability Rating to the New Corn Suitability Rating 2.** Aaron M. Sassman, C. Lee Burras* and Gerald A. Miller
- 148-6 1200 **The SSSA Fundamental Changes to Soil Taxonomy Task Force.** Brian A. Needelman* and Mark H. Stolt
- 148-7 1201 **Update on Soil Survey Standards and Operating Procedures of the National Cooperative Soil Survey.** Kenneth F. Scheffe*, Curtis Monger and Shawn J. Mcvey
- 148-8 1202 **Does a Raster-Based Soil Survey for an Updated Product Make Sense for the Future of Soil Survey?** Maxine J. Levin* and David Hoover
- 148-9 1203 **The Boundary Waters Canoe Area Wilderness (BWCAW) Digital Soil Mapping Project.** Suzann Kienast-Brown*, Tom D'avello, Danielle Evans, Zamir Libohova, Robert Long, Jessica Philippe, Roger Risley, Larissa Schmitt, Amy Koch, Robert Vaughn and Joseph Brennan

SESSION NO. 149—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Developing Sustainable Bioenergy Cropping Systems: II

SSSA Division: Soil & Water Management & Conservation

- 149-1 1708 **Modeling Nitrous Oxide Emissions and Soil Carbon Changes in Bioenergy Cropping Systems Using DNDC.** Andrew R. McGowan*, Miguel Arango and Charles W. Rice
- 149-2 1709 **Simulated Rainfall Events Induce Real, but Minimal, Foliar Nutrient Leaching in Senescing Switchgrass Biomass.** Ruth Burke* and Emily A. Heaton
- 149-3 1710 **Oilseeds Modify Windblown Soil Characteristics in Dryland Cropping Systems.** Brenton S. Sharratt* and William F. Schillinger
- 149-4 1711 **Bioenergy Feedstock Production on Saline Soils Using Marginal Quality Water in Arid Climate.** Girisha Keshavamurthy Ganjegunte*, John A. Clark and Yanqi Wu
- 149-5 1712 **Life Cycle Environmental Impacts of Non-Celulosic Fermentable Sugars for the Production of Biofuels and Chemicals.** Edgardo Ortiz Reyes* and Robert P. Anex
- 149-6 1713 **Carbon Dynamics in Bioenergy Production Systems on Marginal Land.** Jose G. Guzman*, David A. Ussiri and Rattan Lal
- 149-7 1714 **Effect of Transgenic Switchgrass Plants Down-Regulating COMT on Soil Chemistry and Microbiology.** Jennifer M DeBruyn*, David Alex Bevard, Kelly L Cobaugh, David G J Mann, Holly L Baxter, Mitra Mazarek and Neal Stewart

- 149-8 1715 **Soil Organic Carbon Changes in Reclaimed Minesoils Planted with Miscanthus for Biofuel Production.** David A. Ussiri*, Jose G. Guzman and Rattan Lal
- 149-9 1716 **Miscanthus Fertilized with Poultry Litter: Productivity and Environmental Impacts in Northern Louisiana.** Lewis A. Gaston* and William L. Felicien
- 149-10 1717 **Harvest Timing and Inorganic-Nitrogen Alternatives Impact on Lignocellulosic Characteristics and Yield Under an Intensified Climate.** Kenneth P. Beamer*, Stuart A. Weiss, Amanda J. Ashworth, Fred L. Allen and Patrick D. Keyser
- 149-11 1718 **Water Requirements for Sustainable Bioenergy Feedstock Production in Sub-Tropical Regions of the United States.** John Jifon*

SESSION NO. 150—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Management Impacts on Soil Properties and Soil C and N Dynamics: II

SSSA Division: Soil & Water Management & Conservation

- 150-1 1630 **Land Use Change, Organic Matter Storage and Composition in an Arid Soil of Argentina.** Carolina Vazquez, Ana Iriarte, Carlos M. Romero*, Carolina Merlo, Enrique Ivan Lucini, Esteban Kowaljow and Jose Meriles
- 150-2 1631 **Soil Quality in a Semi-Arid Calcareous Soil: Long-Term Effect of Land Use and Cropping System.** Carlos M. Romero*, Chengci Chen, Richard E. Engel, Roseann Wallander, Cathy Zabinski and Emma Bode
- 150-3 1700 **Nitrous Oxide Emissions As Affected By Drainage Design and Management in Corn Based Cropping Systems.** Javed Iqbal*, Michael J. Castellano, Matthew J. Helmers, Timothy Parkin and Eileen J. Kladviko
- 150-4 1701 **Predicted Soil Management and Climate Change Effects on SOC in South Carolina.** Patrick R. Nash*, Hero T. Gollany, Jeffrey Novak, Philip J. Bauer, Patrick G. Hunt and Douglas L. Karlen
- 150-5 1702 **Soil Organic Carbon Influenced By Bioenergy Sorghum Cropping Systems.** Joseph O. Storlien*, Frank M. Hons, Hamid Shahandeh and Jason Wight
- 150-6 1703 **Impacts of Bio-Char and Cover Crops on Soil Carbon Sequestration and Related Soil Properties.** Leonard Kibet*, Humberto Blanco and Paul Jasa
- 150-7 1704 **Impacts of Crop Sequence and Minimum and No-till Cropping Systems on Soil Carbon Stocks in South-Central North Dakota, USA.** Jonathan J. Halvorson, Mark A. Liebig*, David W. Archer and Donald L. Tanaka
- 150-8 1705 **Evaluating the Impacts of Crop Residue Removal and Cover Crops on Soil Organic Carbon and Water Infiltration.** Kopila Subedi Chalise*, Brianna Wegner, Saroop Sandhu, Ekrem Ozlu, Sandeep Kumar and Shannon L. Osborne
- 150-9 1706 **The Effect of Carbon and Nitrogen Substrate Availability on Greenhouse Gas Emissions Following the Rewetting of Dried Soil.** Jonathan Vick*, Martin Burger and William R. Horwath
- 150-10 1707 **Influences of Land Conversion to Sweet Sorghum on Soil C Dynamics in the Lower Mississippi Alluvial Valley.** Michael A. Blazier*, Hal O. Liechty and Michelle Gonzales

SESSION NO. 151—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Soil Biology and Biochemistry-Graduate
Student Poster Competition*Sponsored by MO BIO Laboratories, Inc.*

SSSA Division: Soil Biology & Biochemistry

- 151-1 1204 **Phylogenetic Estimation of Ecologically Important Traits Illuminates Microbial Community Responses to Change in Natural and Agro-Ecosystems.** Kelly Gravuer*, Anu M. Eskelinen, Priyashiela Singh, Susan Harrison and Kate M. Scow
- 151-2 1205 **Use of Biological Indicators of Soil Health to Estimate Reactive Nitrogen Dynamics in Long Term Organic Vegetable and Pasture Systems.** Arnab Bhowmik*, Ann-Marie Fortuna*, Larry J. Cihacek, Andy I. Bary and Craig G. Cogger
- 151-3 1206 **Effect of Biochar and Vermicompost in the Suppression of Plant Parasitic Nematodes Affecting Beans (*Phaseolus vulgaris* L.) in Western Kenya.** Luiza Munyua*, Janice Thies, Rama Devi Narla, John W. Kimenju, Samuel Were, Duncan M. Kioko, Dries Roobroeck, Bernard Vanlauwe and James Agwa
- 151-4 1207 **Effect of Biochar and Vermicompost Soil Amendments on Fungal Root Rot Disease of Common Bean in Western Kenya.** Samuel Were*, Janice Thies, Rama Devi Narla, Eunice W Mutitu, James Muthomi, Luiza Munyua, Bernard Vanlauwe, Dries Roobroeck and James Agwa
- 151-5 1208 **Microbial Community Structures in the Rhizosphere of Different Corn Cultivars.** Noortje Notenbaert*, Jesus E Lopez Vargas and Charles W. Rice
- 151-6 1209 **Soil Amendment with Green Manures and Seed Meals Improve Soil Health and Enhance Soil Microbial Activity in Potato and Douglas-fir.** Bodh Paudel* and Lynne Carpenter-Boggs
- 151-7 1210 **Evaluating the Impact of Arsenic on Enzyme Activity in Soil.** Maya P. Scott, Osagie Idehen*, Raymon Shange and Ramble O. Ankumah
- 151-8 1211 **Pyrosequencing Analysis of Bacterial and Fungal Diversity in Reclaimed Lands in a Mining Region.** Ramya Narendrula* and Kabwe K. Nkongolo
- 151-9 1212 **The Impacts of Inherent Soil Properties, Environmental Conditions, and Restoration Time on Ecological Benefits during CRP Restoration.** Chenhui Li*, Jennifer Moore-Kucera, Lisa M. Fultz, Mamatha Kakarla, Veronica Acosta-Martinez, John C Zak, Juske Horita and David C. Weindorf
- 151-10 1213 **Effect of Soil Salinity on Labile Carbon Pools in a Naturally Saline, Sandy Loam Soil.** Kirsten Butcher*, Abbey Foster Wick, Thomas M. DeSutter, Amitava Chatterjee and Jason Harmon
- 151-11 1214 **Soil Microbial Activity with Depth in Claypan Soils of Southeast Kansas.** Che-Jen Hsiao*, Gretchen F. Sassenrath, Charles W. Rice, Lydia H. Zeglin, Ganga M. Hettiarachchi and DeAnn R. Presley
- 151-12 1215 **Residential Prairie Gardens and Turfgrass Lawns Support a Similar Earthworm Population.** Edward P. Boswell*, Marie R Johnston and Nicholas J. Balster
- 151-13 1216 **Quantifying Soil Uptake of Oxygen As a Predictor of Carbon Dioxide Emission.** RISELY Ferraz DE-ALMEIDA*, Newton La Scala Jr, Kurt A. Spokas, Alan Rodrigo Panosso, Maira Caroline Terçariol and Vivian Aparecida Brancaglioni
- 151-14 1217 **Comparison of Synthetic Versus Organic Herbicides/Insecticides on Arbuscular Mycorrhizal Fungi.** Ariel Freidenreich*, Pushpa Soti and Krishnaswamy N. Jayachandran
- 151-15 1218 **Investigation of Residual Glyphosate Accumulation in Glyphosate Tolerant Cropping Systems.** Nathan Lee*, Richard P. Dick, Javier Gonzales and Cliff L. Ramsier
- 151-16 1219 **Assessment of Microbial Community Structure and Function within Two Oligotrophic Peatlands.** Elise Morrison*, Andrew V. Ogram, Susan Newman, Benjamin L. Turner, K. Ramesh Reddy, Preethu Thomas, Tamer Kahveci, Zhili He and Jizhong Zhou
- 151-17 1220 **Characterizing Production of Nitrous Oxide in High Arctic Polar Desert.** Mitsuki Ota*
- 151-18 1221 **Soil Organic Carbon Fractions and Carbohydrate Hydrolase Activities in Forest Ecosystem Following Prescribed Burning and Thinning.** Dessy Owiti*, Irenus Tazisong, Terrence Gardner and Zachary Senwo
- 151-19 1222 **Methanotrophic Bacterial Diversity in Ohio Soils Using High-Throughput Sequencing.** Aditi Sengupta* and Warren Dick
- 151-20 1223 **Effects of Crop Management System on Arbuscular Mycorrhizal Fungi (AMF) Diversity, and Its Influence on Soybean Tolerance to Water Stress.** Lisseth Zubietta*, Lori A. Hoagland and Luz Marina Melgarejo
- 151-21 1224 **Dominant Bacterial Phyla in Soils Under 18-114 Years of Wheat Cultivation.** Xiufen Li*, Shiping Deng, William R. Raun, Ying Teng and Yan Wang
- 151-22 1225 **Effects of Dicyandiamide in a Soil Applied with Anaerobic Digestion Effluent.** Shuta Karino* and Shinjiro Sato
- 151-23 1226 **Genotype and Soil Management Practices Alter Abundance and Diversity of Culturable Carrot Endophytes.** Sahar Abdelrazek* and Lori A. Hoagland
- 151-24 1227 **Impact of Direct Seeding Mulch-Based Cropping Systems on Soil Health in the Guinea Savanna Zone of Ghana.** Edwin K. Akley*, Charles W. RICE, Benjamin D.K. Ahiabor, Wilson Dogbe and Michael Mawunya
- 151-25 1228 **Role of Locally Derived Effective Microorganisms in Off-Setting Ammonia Volatilization from Composted Organic Poultry Litter and Also from the Forage and Legume Production Systems.** Subash Dahal*, Laura Ney and Dorcas H. Franklin
- 151-26 1229 **Role of Locally Derived Effective Microorganisms in Ammonia Volatilization from Composted Organic Poultry Litter.** Kishan Mahmud*, Dorcas H. Franklin, Laura Ney, Dennis W. Hancock, Mussie Y. Habteselassie, Quint Newcomer and Miguel L. Cabrera
- 151-27 1230 **Effect of Green Manure Termination Method on Soil Abiotic Properties and Earthworm Numbers in an Organic Grain Rotation.** Carolyn Marshall* and Derek H. Lynch

- 151-28 1231 **Locally Effective Microorganisms: Increasing Nutrient Use Efficiency of Organic Amendments through Changes in Microbial Community Structure.** Laura Ney*, Dorcas H. Franklin, Kishan Mahmud, Dennis W. Hancock, Miguel L. Cabrera, Mussie Y. Habteselassie, Subash Dahal and Taylor Hendricks
- 151-29 1232 **Rhizosphere Priming of Cover Crop Decomposition.** Steven T. Rosenzweig*, Meagan Schipanski, Jason P. Kaye and David A. Mortensen
- 151-30 1233 **Rebuilding Soil Health with Forest Industry Residuals.** Xiaojun Zhao* and Lori A. Hoagland
- 151-31 1234 **Impact of Corn Stover Removal on Soil Microbial Community Composition in a Long Term, Irrigated, Continuous Corn Production System.** Salvador Ramirez* II, Virginia L. Jin, Elizabeth Sue Jeske, Humberto Blanco, Gary Hein and Rhae A. Drijber

SESSION NO. 152—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Chemical Processes Responsible for Carbon Fluxes: II

SSSA Division: Soil Chemistry

- 152-1 1235 **Solid State ¹³C NMR Spectroscopic Study of Soil Organic Matter in a Forest Ecosystem Subjected to Prescribed Burning and Thinning.** Thilini D. Ranatunga*, Zhongqi He, Kamala N Bhat and Junyan Zhong
- 152-2 1236 **Tidally Induced Spatial Heterogeneity of Greenhouse Gas Fluxes in an Estuary.** Frances Bothfeld*, Angelia L. Seyfferth, Rodrigo Vargas and Erika Loudermilk
- 152-3 1237 **The Impact of Litter Quality in Soil Organic Carbon Stabilization.** Silvia Cordova*

SESSION NO. 153—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Microbial Mediated Processes for Contaminants and Minerals: II

SSSA Division: Soil Chemistry

Section or Division Cosponsor: Soil Biology & Biochemistry

- 153-1 1238 **Assessing Biomineral Formation By Iron-Oxidizing Bacteria in a Circumneutral Creek.** Owen W. Duckworth, Nohemi Almaraz*, Andrew Hays Whitaker and Megan Y. Andrews
- 153-2 1239 **Recovery of Phosphorus from Low-Grade Ores and Waste Materials Via Bioleaching As a Function of Poorly Crystalline Fe/Al Mineral Content.** Kelly Dobson, Deirdre Mikkelsen, Ryosuke Fujinuma, Outi Priha, Tuija Sarlin, Peter Blomberg, Mona Arnold and Laura A. Wendling*

SESSION NO. 154—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Soil Education and Outreach: II

SSSA Division: Soil Education and Outreach

- 154-1 1300 **Enrollment Trends in American Soil Science Programs Since 2007.** Eric C. Brevik*, Sergio Manacpo Abit Jr., David J. Brown, Holly A.S. Dolliver, David G. Hopkins, David L. Lindbo, Andrew Manu, Monday Mbila, Sanjai J. Parikh, Darrell G. Schulze, Joey N. Shaw, Raymond Weil and David C. Weindorf

- 154-2 1301 **Using Soils Education and Outreach As a Viable Tool for STEM through All School Ages.** Ngowari Jaja*
- 154-3 1302 **Promoting Soil Science at West Virginia University and Beyond As Part of the International Year of Soils.** James A. Thompson*, Adrienne Nottingham and Emily Wells
- 154-4 1303 **Using Science Fairs to Enhance Soil and Water Science Communication in Rural South African Elementary Schools.** Danielle M. Andrews* and Neil E. Brown
- 154-5 1304 **Do Digital and 3-D Printed Specimens Increase Conceptualization of Soil Structure?** Daniel Hirmas*, Anna Johnson, James Miller, Terry Slocum, Stephen T. Hasiotis, Alan F. Halfen and William Johnson
- 154-6 1305 **Interactive Virtual Sorption Lab to Help Teach Soil Science.** April L. Ulery*, Kenneth Carroll, Barbara Chamberlin and Adam Dettmer
- 154-7 1306 **Salinity Management, Cover Crops and Tile Drainage: Research and Demonstration Site in Grand Forks County, North Dakota.** Michael Knudson*, Abbey Foster Wick, Thomas M. DeSutter and Chandra Heglund
- 154-8 1307 **Adaptation of Soil Judging to Venezuela.** Amanda Arroyo*, Elena Mikhailova and Christopher Post
- 154-9 1308 **Illinois on Ipad: Teaching Soil Science Via Isee - Integrating Spatial Educational Experiences.** Robert G. Darmody*, Jennifer Fraterrigo, Darrell G. Schulze and Ron Collman
- 154-10 1309 **Applying Lecture Tutorials in the Introductory Soil Science Classroom.** Judith K. Turk*
- 154-11 1310 **Student Interest is the Strongest Determinant of Success in Introductory College Courses Related to Environmental Science.** Nicholas J. Balster*
- 154-12 1311 **Best Research Experience for Undergraduates: Year 1.** Joshua L. Heitman* and Owen W. Duckworth
- 154-13 1312 **Soil Science & Conservation Workshop for Teachers.** Heidi M. Dittmer*, Thomas Paulsen and Richard M. Cruise

SESSION NO. 155—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

M.S. Graduate Student Poster Competition

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

- 155-1 1330 **Evaluation of Nitrogen-Loss Prevention Products in North Carolina.** Shelby Rajkovich*, Deanna L. Osmond, Randy Weisz, Carl R. Crozier and Wesley Childres
- 155-2 1331 **Pre-Plant and Split Nitrogen Applications: When and What Nitrogen Source?** Jared Spackman*, Fabian G. Fernandez, John A. Lamb and Gabriel Dias Paiao
- 155-3 1332 **Changes in Soil Inorganic Nitrogen, Leaf Tissue Nitrogen, Yield and Primary Components of Sugarcane in Response to Varying Source and Rate of Nitrogen Fertilizer.** Daniel Forestieri*, Brenda Tubana, Gustavo Alves Santos, Tapasya Babu, Marilyn Sebial Dalen, Wooiklee Paye and Brandon White
- 155-4 1333 **Commercial Biosynthesis Amino Acids Byproducts Are a Suitable Replacement for Synthetic N Fertilizers in Corn Production.** Juan Carlos Quezada Rivera*

- 155-5 1334 **The Impact of UAN Fertilizer Solution and Nitrification Inhibitor Management on Soil Nitrogen and Corn Growth.** Habibullah Kakar*, Kelly A. Nelson, Peter Motavalli and Chris Dudenhoefter
- 155-6 1335 **Alternative Fertilizer for Local Corn Farmers; The Use of Spent Biomass on an Emory Silt Loam.** Casey Sullivan, Rebecca Mattingly Harman*, Neal Samuel Eash, Forbes R. Walker, James Zahn and John Goddard
- 155-7 1336 **Comparison of Cogranulated Fertilizer to Blends with S and Zn in Corn Production.** Matthew K. Caldwell*, Bruce Burdick and Kelly A. Nelson
- 155-8 1337 **Cover Crop and Fertilizer Management to Improve Water Quality.** David Abel* and Nathan O. Nelson
- 155-9 1338 **Nitrogen Leaching Potential for Cauliflower (Brassica oleracea var. botrytis) Grown with UAN32 and Organic Fertilizers.** Josue Samano Monroy*, Dave Goorahoo, Florence Cassel and Touyee Thao
- 155-10 1339 **Enhancing Corn Yield in a Winter Cereal Rye Cover Crop System.** Swetabh Patel*, John E. Sawyer and John P. Lundvall
- 155-11 1400 **Quantifying Nitrogen Mineralization of Oat on Sandy Soil.** Kathryn Ivancic* and Matthew D. Ruark
- 155-12 1401 **Comparison of Ground Based Canopy Sensing Technologies for Corn Nitrogen Management in Minnesota.** Gabriel Dias Paiao*, Jared Spackman, Fabian G. Fernandez, Daniel E. Kaiser and John A. Lamb
- 155-13 1402 **Crop Sensors As in-Season Nitrogen Management Tool for Winter Wheat in Wisconsin.** Haily Henderson* and Carrie A.M. Laboski
- 155-14 1403 **Precision Nitrogen Management: Evaluating Management Zones and Optimizing Nitrogen Rates in Dryland Winter Wheat.** Stephen Taylor*, David R. Huggins, David J. Brown, Wayne H. Thompson and Aaron D. Esser
- 155-15 1404 **How Soil Nitrogen Tests Relate to Nitrogen Mineralization in First-Year Corn Following Alfalfa.** Zane T. Walker*, Matt A. Yost, Michael P. Russelle, Rodney Venterea, Jeffrey A. Coulter, Antonio P. Mallarino and Joseph G. Lauer
- 155-16 1405 **Evaluation of the Solvita Test As an Indicator of Mineralizable Nitrogen in Minnesota Soils.** Xinyi Tu*, Deborah L. Allan, Carl Rosen, Jeffrey A. Coulter and Daniel E. Kaiser
- 155-17 1406 **Nitrogen and Carbon Dynamics in Long Term No-till Management.** Casey Sullivan*, Neal Samuel Eash, Robert Freeland, Dayton Lambert and John Goddard
- 155-18 1407 **Effect of Tillage and Fertilization on Agronomic and Nutrient Uptake of Sweet Sorghum.** Jifeng Li*, Dustin L. Harrell, Manoch Kongchum and Nutifafa Adotey
- 155-19 1408 **Evaluating Topsoil Depth Effects on Phosphorus and Potassium Nutrient Dynamics of Grain and Switchgrass Cropping Systems.** Lance S. Conway*, Newell R Kitchen, Matt A. Yost, Kenneth A Sudduth and David Brent Myers
- 155-20 1409 **Determining Lime Requirements Using Buffer Tests in Eastern Washington and Northern Idaho.** Carol R. McFarland*, David R. Huggins, Richard T. Koenig, L. Carpenter-Boggs, Kurtis L. Schroeder, Paul G. Carter and Kendall Kahl
- 155-21 1410 **Influence of Soil Fertility on Soybean Cyst Nematode in Ohio.** Katharine Ankrom*, Laura Lindsey, Terry Niblack and Steven Kent Harrison
- 155-22 1411 **Effect of Micronutrient Fertilizer on Winter Wheat Yield.** Bruno Morandin Figueiredo*, Mariana Del Corso, Jeremiah L. Mullock and William R. Raun
- 155-23 1412 **Assessing the Use of Enhanced Efficiency Fertilizers on Sugarbeet Yield and Quality.** Christopher Bauer* and Kurt Steinke
- 155-24 1413 **Evaluation of Foliar UAN Rate and Application Timing on Wheat Grain Yield and Protein.** Mariana Del Corso*
- 155-25 1414 **Evaluation of Starter Fertilizers for Winter Wheat Production in Oklahoma.** Jonathan Williams*, Patrick Watkins, Linda Ervin, Luciano Cegobias and D. Brian Arnall
- 155-26 1415 **Impact of Lime Placement on Corn Grain Yield Response and Soil Properties.** Theodore Glenn Blumenschein*, Kelly A. Nelson and Peter P. Motavalli
- 155-27 1416 **Concentrating Fertilizer Under Clumps of Grain Sorghum to Increase Efficiency.** Pramod Pokhrel*, B. A. Stewart, Qingwu Xue, Sushil Thapa and Mahendra Bhandari
- 155-28 1417 **Influence of Plant Growth Regulators and Nitrogen Rate on Soft Red Winter Wheat Growth and Yield.** Mike Swoish* and Kurt Steinke
- 155-29 1418 **Potassium and Sulfur Availability and Lime Potential of Ash Co-Product of Corn Cellulosic Ethanol Processing.** Samuel Groenenboom* and Antonio P. Mallarino
- 155-30 1419 **The Effects of Forest Management Practices on the Community Structure of Chemolithotrophic Bacteria in the Bankhead National Forest.** Jonjala Jackson* and Elica M. Moss
- 155-31 1420 **Switchgrass-Pine Agroforestry Systems: Soil Carbon and Biomass Production.** Martin Day* and Subhrajit Saha
- 155-32 1421 **Residual Nitrogen Investigations for Strip-Tilled Flue-Cured Tobacco Production in Virginia.** Emily B. Brown*, T. David Reed, Christopher D. Teutsch and Benjamin F. Tracy
- 155-33 1422 **On-Farm Soil Quality Testing in Organic and Conventional Peach Orchard Systems.** Esther Thomsen*, Mae Culumber and Jennifer R Reeve
- 155-34 1423 **Corn Earleaf Tissue Analysis: Is It Useful in Arkansas?** Julia Allen*, Trenton L. Roberts, Chester Eugene Greub, Nathan A. Slaton, Kevin Lawson and Jason Kelley
- 155-35 1424 **Rice Yield and Plant Tissue Analysis to Nitrogen Additions.** Richard Turner*

SESSION NO. 156—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Ph.D. Graduate Student Poster Competition

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

- 156-1 1313 **Effect of Foliar Micronutrients (B, Mn, Fe, Zn), Applied at Different Rates and Timings, on Maize (Zea mays L.) Grain Yield, Grain Nutrient Density, and Micronutrient Uptake, Mobility, and Partitioning.** Zach P. Stewart*, Charles A. Shapiro, Charles S. Wortmann, Ellen T. Paparozzi, Tim M. Shaver and Vicki L. Schlegel

- 156-2 1314 **Microcosm Experiment to Evaluate Factors Influencing Ammonium Volatilization.** Nutifafa Adotey*, Dustin L. Harrell, Jifeng Li and Manoch Kongchum
- 156-3 1315 **A Bacterial Biosensor for Detecting Early-Season Nitrogen Health in Cereal Crops.** Travis Luc Goron*, Bill Deen, Greg A. Stewart and Manish Raizada
- 156-4 1316 **Changes in Soil Properties and Corn Plant Parameters Due to Early Season Soil Waterlogging.** Gurpreet Kaur*, Peter P. Motavalli, Kelly A. Nelson and Felix B. Fritschi
- 156-5 1317 **How Do Agronomic Management Practices Affect Soil Nitrogen Mineralization? a Meta-Analysis.** Navreet Kaur Mahal*, Fernando Miguez and Michael J Castellano
- 156-6 1318 **Gross Nitrogen Mineralization in Corn Is Influenced By Soil Organic Carbon and Nitrogen Management Strategy.** William R. Osterholz*, Michael J Castellano and Matt Liebman
- 156-7 1319 **The Effect of Composting Cover Crop Biomass with Rock Phosphates on Nitrogen and Phosphorus Availability Under Smallholder Maize Production in the Northern Zone of Tanzania.** Mawazo J. Shitindi*, Kokoase Kpomblekou-A, Ramble O. Ankumah, Johnson Semoka, Conrad Bonsi and Mateete Bekunda
- 156-8 1320 **Granulated Organomineral Fertilizer Based on Poultry Litter As Alternative of Phosphorus Fertilization in Maize.** Joaquim José Frazão*, Jose Lavres Jr., Vinicius Melo Benites, Takashi Muraoka, Joao Victor Schiavon Ribeiro and Vitor Mateus Pierobon
- 156-9 1321 **Evaluation of Soil Phosphorus Index for No-till Wheat Production in Oklahoma.** Patrick H. Watkins*, D. Brian Arnall, William R. Raun and Jason G. Warren
- 156-10 1322 **Is P in the Coarse Soil Fraction Related to Soil Organic P Mineralization Measured By Isotopic Dilution?** Nicolas Wyngaard*, Miguel L. Cabrera and Else K Bnemann
- 156-11 1323 **Post-Season Diagnosis of Potassium Deficiency in Soybean Using Seed Potassium Concentration.** Md. Rasel Parvej*, Nathan A. Slaton, Matthew S. Fryer, Trenton L. Roberts, Larry C. Purcell and Russell E. DeLong
- 156-12 1324 **Nitrogen Fertilizer Rate Effects on Soil Organic C in Iowa Continuous Corn and Corn-Soybean Systems.** Hanna Poffenbarger*, John E. Sawyer and Michael J Castellano
- 156-13 1325 **Physical Fractionation of Organic Matter and Management Impacts of Tropical Soils.** Moniki Campos Janegitz*, Ciro Antonio Rosolem, Gustavo Henrique de Menezes Bacco and Camila Grassmann
- 156-14 1326 **Effect of Dairy Manure Injection on Soil Carbon and Nitrogen Cycling.** William Smith*
- 156-15 1327 **Better Maize Response to Optimal Fertilizer Placement.** Tryston August Beyrer* and Frederick E. Below
- 156-16 1328 **Detecting Moisture Change in Fertilizer Microsites through Soil Color-Moisture Calibrations.** Isaac Madsen* and William L Pan
- 156-17 1329 **Analysis of Organically Farmed Soils Using Ion Exchange Membranes and Chemical Extractions.** Cornelius Adewale*, L. Carpenter-Boggs and David R. Huggins

SESSION NO. 157—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Phosphorus Science & Management Posters

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

- 157-1 1425 **Minnesota Long-Term Phosphorus Management Trials: The Build Period.** Karina P. Fabrizzi*, Albert L. Sims, Daniel E. Kaiser, Carl Rosen, Jeffrey S. Strock and Jeffrey A. Vetsch
- 157-2 1426 **Is Biosolids Incinerator Ash a Safe and Effective Phosphate Fertilizer?** James E. Crants*, Carl J. Rosen, Kathryn Blake and Matthew McNearney
- 157-3 1427 **Impact of Sampling Depth on Soil Phosphorus and Fertilizer Recommendation.** Gobena Hulukula* and Charles C. Mitchell
- 157-4 1428 **Mobilization Characteristics of Phosphate a.** Ji Hye Jeon*, Dong S. Lee, Kyo Suk Lee, Ji S. Shin, Jae B. Lee, Ri N. Joo, Myoung Y. Lee, Se W. Min and Doug Y. Chung
- 157-5 1429 **Mobilization Characteristics of Phosphate Adsorbed Onto the Sorption Sites of Soils By Oxalic Acid.** Dong S. Lee*, Kyo Suk Lee, Ji S. Shin, Jae B. Lee, Ri N. Joo, Myoung Y. Lee, Saet B. Park, Hee J. Chang, Won S. Choi, Se W. Min and Doug Y. Chung
- 157-6 1430 **Phosphorus Uptake By Potato (*Solanum tuberosum*) from Fertilizers Recovered from Anaerobic Digestion.** Harold P. Collins*, Emi Kimura, Chad Kruger and Craig Frear

SESSION NO. 158—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

The Science & Management of Secondary & Micronutrients Posters

SSSA Division: Soil Fertility & Plant Nutrition

Section or Division Cosponsor: Soil Fertility & Plant Nutrition, Nutrient Management & Soil & Plant Analysis

- 158-1 1431 **Magnesium Deficiency of Tomato in Calcareous Soil Under Solar Greenhouse.** Zhujun Chen*, Huimin Wang, Wenyan Zhao and Jianbin Zhou
- 158-2 1432 **Soybean Response to Broadcast Application of Boron, Chloride, Manganese and Zinc.** Apurba Sutradhar* and Daniel E. Kaiser
- 158-3 1433 **Rare Earth Elements Characterization in Phosphate Fertilizers Marketed in Brazil.** Guilherme Soares Dinali*, Camilla Batista de Oliveira, Cristiano Goncalves Moreira, Fo Henrique Alves Bispo, Carlos Alberto Perez, Teotonio Soares de Carvalho, Sio Junio Ramos, Jose Osvaldo Siqueira and Luiz Roberto Guimaraes Guilherme
- 158-4 1434 **Grain Yield, Soil-Test, and Tissue-Test Responses to Micronutrients Applied to the Soil in Corn-Soybean Rotations.** Pablo A. Barbieri*, Antonio P. Mallarino, Mazhar U. Haq, Ryan R. Oltmans and Josh Enderson
- 158-5 1435 **Use of an N-Rich Strip and Ground-Based Active Optical Sensors for Detection of Sulfur Deficiency in Corn.** David W. Franzen, Lakesh Sharma* and Honggang Bu
- 158-6 1436 **Impact of Boron Additions in Marginal Soils for Growth of Corn, Wheat, Soybean, and Switchgrass.** Sougata Bardhan*, Arun Chattopadhyay and Shibu Jose

- 158-7 1437 **Micronutrient Content of Irrigated Soybean Grown in the Midsouth.** H. Arnold Bruns*
- 158-8 1438 **Improving Crop Yield and Nutrient Uptake Efficiency with Premium Phosphate Fertilizers.** Kirandeep Mann*, Kyle W. Freeman, Matthew W. Clover and Curt Woolfolk
- 158-9 1439 **High Yield Corn Response to Micronutrient-Enhanced Potassium Fertilizer Under Intensive Management.** Matthew W. Clover*, Kirandeep Mann, Kyle W. Freeman, Curt Woolfolk and Ross Bender
- 158-10 1500 **Common Beans Enriched with Zn By Its Application Via Soil and Via Foliar.** Renildes L. F. Fontes*, Thais L L Cambraia, Leonardus Vergutz and Julio C L Neves

SESSION NO. 159—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Soil Mineralogy: II (Includes Student Comp)

SSSA Division: Soil Mineralogy

- 159-1 1501 **Sorption-Desorption of DOC By Sequentially Treated Soil Clay Fractions with Different Mineral Compositions.** Mandeep Singh*, Binoy Sarkar, Gordon Jock Churchman and Nanthi S. Bolan
- 159-2 1502 **Decomposition of Soil Organic Matter As Affected By Clay Types, Pedogenic Oxides and Plant Residue Addition Rates.** Mandeep Singh*, Binoy Sarkar, Gordon Jock Churchman and Nanthi S. Bolan
- 159-3 1503 **Influence of Acids on Morphology of the Surface of Soil Colloidal Particles and Chemical Properties.** Dong S. Lee*, Kyo S. Lee, Sung C. Kim, Young K. Hong, Ji S. Shin, Jae B. Lee, Ri N. Joo, Myoung Y. Lee, Se W. Min and Doug Y. Chung
- 159-4 1504 **Soil Mineral Diversity in the Sedimentary Basins of Southwestern Amazon, Brazil.** Youjun Deng*, Elaine Almeida Delarmelinda and Valdomiro Severino de Souza Jr.
- 159-5 1505 **Influence of Ryegrass on Physicochemical and Mineralogical Properties of a Fragipan Soil.** Christopher J. Matocha*, Anastasios D. Karathanasis, Lloyd Murdock and John H. Grove

SESSION NO. 160—4:00 PM—6:00 PM

MCC, Exhibit Hall BC, Level 1

Environmental Soil Physics and Hydrology Student Competition: Lightning Orals with Posters: II

SSSA Division: Soil Physics and Hydrology

Presider: Aaron Daigh, Ziru Liu, Matthew Patterson

- 160-1 1520 **Salinity Induced Alterations on Chile-Peppers at Various Growth Stages.** Gurjinder S Baath* and Manoj K. Shukla
- 160-2 1521 **Soil Water Characteristic Curves of Long-Term Cropping Systems in South Central Wisconsin.** Elizabeth McNamee* and William L. Bland
- 160-3 1522 **Effective Unsaturated Hydraulic Conductivity of Multilayer Soil Profiles.** Mohammad R Gohardoust*, Morteza Sadeghi, Mirkhalegh Ziatabar Ahmadi and Markus Tuller

- 160-4 1523 **Characterization of Soil Hydraulic Properties Heterogeneity in Sandy Soil By Tomodensitometric Analysis and Particle Size Distribution.** Yann Periard*, Silvio Jose Gumiere, Alain Rouseau, Jonathan A Lafond and Jean Caron
- 160-5 1524 **Estimating Soil Hydraulic Properties Using Pedotransfer Functions in Texas: The Role of Soil Organic Carbon.** Julieta Collazo*, Cristine L. S. Morgan, Haly L. Neely, Yohannes Tadesse Yimam and Andrea Szilagyi Kishne
- 160-6 1525 **Microgravity Effects on Water Movement in Capillary Tubings.** Yuichi Maruo*, Naoto Sato, Risa Nagura, Ryo Kamide and Kosuke Noborio
- 160-7 1526 **Dynamic Non-Equilibrium Water Flow in Sphagnum Moss and Peat.** Tobias KD Weber*, Efsthios Diamantopoulos, Wolfgang Durner and Jonathan S Price
- 160-8 1527 **Prediction of Particle Size Distribution with Visible Near-Infrared Spectroscopy.** Cecilie Hermansen*, Maria Knadel, Per Moldrup, Mogens H. Greve, Dan K. Marning and Lis W. de Jonge
- 160-9 1528 **Prediction of Vegetation Parameters Using Reflectance Measurements and Soil Moisture in Oklahoma Grassland.** Sonisa Sharma* and Tyson E. Ochsner
- 160-10 1529 **Dynamics of Wavelet-Decomposed Soil Water Content Signals in Relation to Soil Pore Characteristics.** Mingming Qin*, Daniel Gimenez and Miguel Cooper
- 160-11 1530 **Temperature Effect on Aggregate Stability of Volcanic Ash Soils.** Rando Sekiguchi*, Yuji Kohgo and Hirota Saito
- 160-12 1531 **Carbon Distribution within Intact Soil Macro-Aggregates.** Michelle Quigley*, Alexandra Kravchenko, Wakene Chewaka, Andrey K. Guber and Mark Rivers
- 160-13 1600 **Untangling the Influences of Shallow Groundwater and Soil Texture on Corn Yield Variability.** Samuel C. Zipper*, Mehmet Evren Soylu, Eric Booth and Steven Loheide
- 160-14 1601 **An Infiltration Index for Stormwater Runoff.** Amanda Mae Liesch*, Joshua Heitman, Aziz Amoozegar, David L. Lindbo and Rob Austin
- 160-15 1602 **Leaching and Bioavailability of Stormwater Contaminants in Compost-Amended Bioretention Systems.** Maninder Kaur Chahal* and Markus Flury
- 160-16 1603 **Modeling the Effect of Failing on-Site Wastewater Treatment Systems on Watershed Nitrate Yield with SWAT.** Nahal Hoghooghi*, David E. Radcliffe and Rajith Mukundan
- 160-17 1604 **Electromagnetic Induction As a Tool for Mapping Coarse Fragments in Texas.** Richard David Hatch* IV
- 160-18 1605 **Soil Quality, Moisture, and Temperature Evaluation Under Different Biodegradable Mulches.** Henry Y Sintim*, Sreejata Bandopadhyay, Shuresh Ghimire, Markus Flury, Andy I. Bary, Sean Schaeffer, Jennifer M DeBruyn, Carol Miles and Debra Inglis
- 160-19 1606 **Hidden Half Network Model: A Prototype for Simulating Soil Pore Space, Root Architecture, and Water Movement.** Yuan Wu* and Henry Lin
- 160-20 1607 **Soil Salinity and Sodicity Impacts on Unsaturated Hydrologic Properties.** Hans Klopp* and Aaron L. Daigh

- 160-21 1608 **Drivers of Spatiotemporal Variability in Evapotranspiration and Recharge from Irrigated Agroecosystems in the Wisconsin Central Sands.** Mallika Nocco*, Christopher Kucharik, George Kraft and Steven Loheide
- 160-22 1609 **Consequences of Textural Analysis Methods on Time Lag Estimates.** Sara E. Vero*, Owen Fenton, Paul Murphy, Sophie C. Sherriff and Daire O'Huallachain
- 160-23 1610 **SWAT Model Calibration, Validation and Parameter Sensitivity Analysis Using SWAT-CUP.** Sushant Mehan*, Sandeep Kumar and Ram Neupane

SESSION NO. 161—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

**Grand Challenges in Modeling Soil Processes/
Long-Term Observatories: II**

SSSA Division: Soil Physics and Hydrology

*Presider: Andrea Schnepf, Jiri Simunek, Dani Or, Heye Bogena,
Jon Chorover*

- 161-1 1506 **Establishing an International Soil Modelling Consortium.** Andrea Schnepf*, Jan Vanderborght and Harry Vereecken
- 161-2 1507 **A Drought Index Designed for Field-Scale Water Management.** Daejun Kim*, Soo-ock Kim, Jin-Hee Kim and Jin I. Yun
- 161-3 1508 **Radiation Measurement in Paddy Soil Layer That Was Buried Contaminated Topsoil in Fukushima.** Masaru Mizoguchi*
- 161-4 1509 **Evaluation of Atriplex Halimus Germination on Saline Soil Substrates Under Semi-Arid Environment Using a Combination of Germination, Climate and Hydrological Models.** Mandana Shaygan*, Thomas Baumgartl, Sven Arnold and Lucy Reading
- 161-5 1510 **Modeling Transient Soil Moisture Dichotomies Arising from Anthropogenic Land Cover Alterations.** Andres Patrignani* and Tyson E. Ochsner
- 161-6 1511 **Towards a High Resolution Soil Moisture Map of Oklahoma.** Jason Patton*, Tyson E. Ochsner, Andres Patrignani, Jingnuo Dong and Matthew Haffner
- 161-7 1512 **Precision Irrigation System Designs That Reduce Energy and Irrigation Water Use By Soil Water Retention Technology.** Alvin J.M. Smucker*, Andrey K. Guber, Kalyanmoy Deb and Mahdi Ibrahim Aoda
- 161-8 1513 **A Comparison of PRISM and Cfsr Precipitation Data Effects on Calibration and Uncertainty of SWAT Models.** David E. Radcliffe* and Rajith Mukundan
- 161-9 1514 **Evaluating Performance of Artificial Capillary Barriers to Improve Root Zone Conditions Using Hydrus.** Arunee Wongkaew*, Hirotaka Saito, Mitsuha Miyake, Mitsuhiro Inoue and Haruyuki Fujimaki
- 161-10 1515 **Importance of Characterization of Soil Properties and Spatial Distribution in Watershed Modeling.** Claudio O. Stockle*, Fidel Maureira, Nicole K Ward, Matt Yourek, Matteo Poggio and Erin Brooks
- 161-11 1516 **A Whole-Soil Modeling Approach for Field Capacity Assessment.** Quirijn de Jong van Lier* and Ole Wendroth
- 161-12 1517 **Determining Near-Surface Heat Flux Density Using Measured and Modeled Soil Thermal Conductivity.** Xiaoyang Peng, Yili Lu, Joshua Heitman, Robert Horton and Tusheng Ren*
- 161-13 1518 **Estimating Water Use in a Semi-Arid Montane Ecosystem Using a Soil Moisture Network and Numerical Modeling.** Scott B. Jones*, Ling Lu and Larry Hips
- 161-14 1519 **Hydrus Model of Lateral Movement of a Dye within the Capillary Fringe.** David E. Radcliffe and Hao Peng*

SESSION NO. 162—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Agrochemical Soil Interactions

SSSA Division: Soils & Environmental Quality

- 162-1 1613 **Alternatives to Reduce Soil Fumigant Use in Key California Crops: A Meta-Analytic Approach.** Minghua Zhang* and Michael L. Grieneisen
- 162-2 1614 **Seasonal Herbicide Monitoring in Soil, Runoff Waters and Sediments in an Olive Orchard.** Maria Jesus Calderon*, Elena De Luna, Jose Alfonso Gomez and MCarmen Hermosin
- 162-3 1615 **Isomer-Selective Behavior of Metalaxyl in Organically-Amended Soil.** Beatriz Gamiz, Joseph J. Pignatello, Rafael Celis, Lucia Cox* and Maria Carmen Hermosin

SESSION NO. 163—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

**Environmental Impacts of Land
Application of Waste - II**

SSSA Division: Soils & Environmental Quality

- 163-1 1616 **Identifying Peak Intervals of Denitrification in Land-Applied Wastewater Using Automated Sampling Chamber.** Clay VanderLeest*, Francisco J. Arriaga and Geoff Siemerling
- 163-2 1617 **Effects of Oil Field Brine Wastewater Spills on Soil Hydraulic Conductivity.** Nathan E. Derby*, Francis X.M. Casey and Thomas M. DeSutter
- 163-3 1618 **Effect of Crystallization Inhibitors on the Upward Migration and Harvesting of Salts on Oil-Production-Water Contaminated Soils.** Aaron Klaustermeier*, Aaron L. Daigh, Ryan Limb and Kevin Sedivec
- 163-4 1619 **Improved Interim and Final Reclamation Strategies for Appalachian Shale-Gas Infrastructure.** Patrick J. Drohan*, Kelly Sitch, Ben Gamble, Deric Case and Seth Cassell
- 163-5 1620 **Assessment of a Mixed Coal Combustion Byproduct As a Soil Liming Material.** Jason R. Burgess-Conforti*, David Miller, Kristofor R. Brye and Lisa Wood
- 163-6 1621 **Sugarcane Bagasse Ashes Characterization Aiming Application in Soils.** Jose E. Cora*
- 163-7 1622 **Phosphorus Availability in Sand and Silt Loam Soils from Six Wisconsin Biosolids.** Allee Klug*, Heather McLain and Angela M. Ebeling
- 163-8 1623 **Evaluating the Bioavailability of Trace Organic Contaminants from Commercial and Municipal Biosolids-Based Fertilizers.** Michael L. Mashtare* Jr., Jihyun R. Kim, Aaron Zull and Linda S. Lee

- 163-9 1624 **Nutrient Runoff Losses from Liquid Dairy Manure Applied with Low-Disturbance Methods.** William Jokela*, Jess Sherman and Jason Cavadini
- 163-10 1625 **Depth-Dependent Survival of Escherichia coli and Enterococci in Soil after Manure Application and Simulated Rainfall.** Matthew Stocker*, Robert L. Hill, Yakov A. Pachepsky and Daniel Shelton
- 163-11 1626 **Altering Soil Nutrient Concentrations in Animal Congregation Areas of an Abandoned Beef Cattle Backgrounding Feedlot through Soil Amendments.** Annesly Netthisinghe*, Rebecca Gilfillen, Paul Woosley, Karamat R Sistani and Kimberly L Cook
- 163-12 1627 **Assessing Soil Phosphorus Status in Poultry Production Areas of Mississippi.** John J. Ramirez-Avila*, Larry Oldham, Sandra L. Ortega-Achury, Karl Keith Crouse and William L. Kingery
- 163-13 1628 **Response of Agricultural Soil Greenhouse Gas Fluxes to Amendment with Residual Waste Materials: Effects of Temperature and Moisture.** Ashley Waggoner*, Rebecca Long and Jose Adolfo Amador
- 163-14 1629 **Short-Term Responses of Annual Ryegrass Cv. Brs Ponteio to Half-Strength Nutrient-Solution Added Mehlich-1-Extracted Sewage Sludge.** Leonidas P. Passos*, Andrea Mittelman, Jemima Goncalves Pinto da Fonseca, Julio Cesar Jose da Silva and Jobe Conde Evangelista Freitas

SESSION NO. 164—4:00 PM–6:00 PM

MCC, Exhibit Hall BC, Level 1

Tracking Legacy Phosphorus in Lakes and Rivers - II

SSSA Division: Soils & Environmental Quality

- 164-1 1611 **Equilibrium Phosphorus Concentrations and Phosphorus Forms of Sediments in Walnut Creek, Iowa.** Suroso Rahutomo*, John L. Kovar and Michael L. Thompson
- 164-2 1612 **Phosphorus Release from Lake Champlain Sediments Under Reducing and Oxidizing Conditions.** Eric O. Young*, Stephen Kramer and Laura B. Klaliber

SESSION NO. 165—5:45 PM–6:30 PM

Hilton, Minneapolis Ballroom D, Third Floor

Delegate Training for SASES Clubs

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 166—6:00 PM–7:00 PM

MCC, 102 D, Level 1

Business Meeting—Crop Management Professionals Community

ASA Section: Agronomic Production Systems

*Presider: Andrew Knepp***SESSION NO. 167—6:00 PM–7:00 PM**

MCC, 102 D, Level 1

Business Meeting—Integrated Pest Management Professionals Community

ASA Section: Agronomic Production Systems

*Presider: Amy Beth Asmus***SESSION NO. 168—6:00 PM–7:00 PM**

MCC, 102 D, Level 1

Business Meeting—Nutrient Management Professionals Community

ASA Section: Agronomic Production Systems

*Presider: Charles Duncan***SESSION NO. 169—6:00 PM–7:00 PM**

MCC, 102 D, Level 1

Business Meeting—Soil and Water Management Professionals Community

ASA Section: Agronomic Production Systems

*Presider: Howard Brown***SESSION NO. 170—6:00 PM–8:00 PM**

MCC, 101 A, Level 1

Business Meeting—Agroclimatology and Agronomic Modeling Community

ASA Section: Climatology & Modeling

*Presider: Senthold Asseng***SESSION NO. 171—6:00 PM–8:00 PM**

MCC, 101 A, Level 1

Business Meeting—Climatology & Modeling Section

ASA Section: Climatology & Modeling

*Presider: Senthold Asseng***SESSION NO. 172—6:30 PM–9:00 PM**

Hilton, Minneapolis Ballroom D, Third Floor

SASES Dinner, Awards, and Elections

Students of Agronomy, Soils and Environmental Sciences (SASES)

SESSION NO. 173—9:30 PM–11:55 PM

Hilton, Minneapolis Ballroom A, Third Floor

SASES Dance

Students of Agronomy, Soils and Environmental Sciences (SASES)

Tuesday, Nov. 17**SESSION NO. 174—6:30 AM–8:00 AM**

Loring Park, ,

5K Fun Run (registration required)*Sponsored by Apogee Instruments & Soil Measurement Systems, LLC*

Special Sessions