Contents & General Session

GENERAL INFORMATION

REGISTRATION
Our registration desk is happy to answer any questions you may have during the conference. The ASABE registration desk is located on the lobby level of the Sheraton Kansas City Hotel at Crown Plaza. Registration hours are:

- Saturday, July 20: 1:00PM - 6:00PM
- Sunday, July 21: 7:00AM - 6:00PM
- Monday, July 22: 6:00AM - 6:00PM
- Tuesday, July 23: 6:00AM - 6:00PM
- Wednesday, July 24: 6:00AM - 3:00PM

LOCATION
Sheraton Kansas City Hotel at Crown Center
2345 McGee Street
Kansas City, Missouri 64108

Westin Kansas City at Crown Center
1 East Pershing Road
Kansas City, Missouri 64108

NAME BADGES
Please wear your name badge at all times. This is how we know you are a conference attendee and it will allow you access into meetings, the exhibit hall and meal functions.

ELECTRONIC DEVICES
As a courtesy to your colleagues, please turn off or silence all electronic devices during sessions, workshops and plenary addresses. There will be no photographs, video taping or recording of presentations without advance approval from ASABE.

2013 GENERAL SESSION

Monday, July 22
Location: Century Ballroom-Westin

Recognition – 8:00AM
Keynote Speaker – 8:45AM

“Sustainability ... & our efforts at PepsiCo Foods Canada”

Helmi Ansari
Director Sustainability and Org. Capability
PepsiCo Foods Canada

Currently Helmi is the Director of Sustainability and Organizational Capability with PepsiCo Foods Canada where he is responsible for leading the company’s agenda on environmental sustainability and organizational capability for operations.

Helmi has broad experience in manufacturing supply chains having worked in over a dozen food and pharmaceutical manufacturing plants in the USA and Canada with leading companies such as PepsiCo and H.J. Heinz.

Helmi is a consumer packaged goods industry professional with expertise in operations management, sustainable corporate and supply chain transformation, and organizational capability. He also has a degree in Mechanical Engineering from the University of Arkansas, and an MBA from the University of Western Ontario. Helmi was recognized for his efforts in the Sustainability field by being named to Canada’s Clean 50 list in 2012.

Helmi and his wife have 3 daughters, and they are settled in Cambridge Ontario.
President Tony Kajewski  
Manager  
John Deere

“Our world will face shortages in food, fuel, and water in the future. ASABE is in a unique position because our members provide system solutions to address all of these shortages. As ASABE president, I will encourage and promote ASABE’s leadership role in outreach to develop and promote these solutions.”

In over 31 years of employment with John Deere, Kajewski has held positions in quality engineering, manufacturing engineering, marketing, customer service, design, and program management. He is currently the continuous improvement engineering manager for large tractors and is located in Waterloo, Iowa. His design experience includes development of the 9000 Series wheel and track tractors as well as cabs for tractors and sprayers.

An ASABE member since 1977, Kajewski has contributed to the development of ASABE standards in the power and machinery area. He has been a member of PM23/4/3 for over 20 years. He has chaired eight projects for lighting and marking standards that focus on safety for operators and motorists. Kajewski has been active in developing meetings for ASABE and served as Meetings Council chair. He has chaired the Power and Machinery Division and has served on the Board of Trustees, the Foundation, and more than ten committees, including PM01, PM02, PM03, Standards Council, PM05, M102, M113, and M131. He has also been very active in the Iowa Section and has held several offices, including chair.

Kajewski has received three Presidential Citations and a Standards award. He was the Iowa Section’s Engineer of the Year and in 2006 was named an ASABE Fellow. He is the immediate past treasurer of the ASABE Foundation.

President-Elect Lalit R. Verma  
Professor and Head  
University of Arkansas

Verma is professor and head of the biological and agricultural engineering (BAE) department at the University of Arkansas, in Fayetteville, Arkansas, since July 2000. He served as the Interim Dean of the Bumpers College and Associate Vice-President for Academic Programs of the UA Division of Agriculture during 2008-2010. He is also the Program Director of the M.S. degree program in Biomedical Engineering in the College of Engineering. Prior to this he was the Professor and Head of BAE Department at Louisiana State University, Baton Rouge, LA. He was responsible for program planning, development, implementation and administration of Biological Engineering education, research and extension programs in the Biological and Agricultural Engineering Department. He was also responsible for personnel management, budget planning and management, fund-raising, and program planning in two colleges, with faculty and staff at two separate locations, and reports to three Deans/Associate Vice-Presidents. He is a Fellow of ASABE, American Institute for Medical and Biological Engineering (AIMBE), and the Institute of Biological Engineering (IBE). He is a Charter Member and Past- President of the Institute of Biological Engineering (IBE), Member of the Accreditation Board for Engineering and Technology (ABET) Board of Directors representing ASABE, serving on ABET Board Finance Committee; and Member of American Society for Engineering Education (ASEE). His area of research interest is Food and Bioprocess Engineering and Biological Engineering Education.

Professor and head of the department of biological and agricultural engineering at the University of Arkansas, Verma has provided leadership in the development and promotion of biological engineering as a science-based discipline. He coordinated the transformation of programs at two public land-grant universities into vibrant and growing biological engineering programs by providing leadership in the development of skill competencies and accreditation criteria. Verma is also internationally recognized for his research in rice and forage post-harvest engineering and technology. He has served as principal or co-principal investigator on various sponsored research projects, and his publications, including refereed articles, proceedings papers, and book chapters, are numerous.
SUNDAY, JULY 21

PROFESSIONAL ENGINEERING EXAM QUESTION WRITING SESSION
Sunday, July 21 – 8:00AM-4:00PM
Location: Van Horn C - Sheraton
Licensed Professional Engineers are welcome to participate in a day-long effort to write and evaluate agricultural engineering Professional Examination test questions. Persons attending must be a licensed professional engineer and provide their PE number to participate. Preregistration is required.

MONDAY, JULY 22

WHAT YOU DIDN’T KNOW ABOUT ASABE AND PROFESSIONAL LICENSURE
Monday, July 22 – 7:00AM-8:00AM
Location: Fremont - Sheraton
How do I get the most out of my time at the meeting, my membership in ASABE and my career as an engineer? The YPC and Professional Engineering Institute (PEI) will answer these questions and more. Come to learn more about the benefits of professional licensure within our society as well as learn about different topics about how the society functions internally. Topics to be addressed include Professional Licensure, YPC’s history since its inception 10 years ago, Communities of ASABE, as well as a preview of events to come so you can make the most of the meeting. Refreshments will be provided. All members, especially first-time meeting attendees and preprofessionals are encouraged to attend. Information from past year’s sessions will be available.

Session #105
SOIL AND WATER DISTINGUISHED LECTURE – PERSPECTIVES ON FUTURE MANAGEMENT OF YOUR NATURAL RESOURCES
Monday, July 22 – 9:30AM-12:00PM
Location: Chicago A - Sheraton
Moderator: Dave Bjorneberg, USDA-ARS, Kimberly, ID
In 2008, the Soil and Water (SW) Division of ASABE implemented a distinguished lecture series to provide perspectives and innovations in soil and water engineering. This year’s distinguished lecture session is titled “Bridging the Gap: Perspectives on Future Management of our Natural Resources”. The session is organized around the central theme of “Managing Soil and Water Resources in the Face of a Changing Climate” and features leading researchers, educators, and mentors in the field of soil and water conservation engineering, ecology and hydrology. The lectures include retrospective analyses of engineering’s role in natural resource management, discussions of innovations in soil and water conservation engineering, land management and challenges facing natural resource professions. The session highlights four of the six ASABE Soil and Water Division groups in presentation of topics related to wetland hydrology, mitigation of sediments and nutrients to river and stream systems, resource management and BMPs. Special focus will be placed on the role of soil and water engineering as adaptation and mitigation strategies are developed to respond to a changing climate.

The session features 3 Distinguished Lectures:
“Wetland Hydrology: Issues related to characterizing and determining wetland hydrologic status”
Dr. Wayne Skaggs, WNR and Distinguished University Professor, Biological and Agricultural Engineering, North Carolina State University, Raleigh, NC.

“Managing to reduce sediment and nutrient movement to river and stream systems in the Upper Mississippi River Basin”
Dr. Matthew Helmers, Assistant Professor, Iowa State University, Ames, IA.

“Water demand, climate, and land use change impacts on water availability and the role of decision support tools in future resource management”
Dr. Steve McNulty, Supervisory Ecologist, USDA Forest Service, Eastern Forest Environmental Threat Assessment Center, Raleigh, NC.

Session #125
GLOBAL CHALLENGES FORUM
Monday, July 22 – 9:30AM-12:00PM
Location: Chicago C - Sheraton
Moderator: Robert A. Easter, Ph.D., President, University of Illinois
The Global Challenges Forum will be a moderated session, which will start with a summary of the grand challenges facing humanity as we struggle to provide enough food, feed, fiber, clean water and renewable fuels for a growing population, all while resources continue to be constrained. Representatives from international agricultural and biological technical societies will share their top two or three opportunities their organizations are facing. The session will be conducted in a format to encourage broad-based dialogue and all AIM attendees are welcome to attend.

Session #137
ASABE SEATBELT AND ROPS USAGE LOGO CONTEST – KICKOFF - Sponsoring Committee: ESH-01
Monday, July 22 – 11:30AM-1:30PM
Location: Century Ballroom – Westin (during the AEM Lunch)
Target Audience: ASABE members, Young Professionals, ASABE Student Members, Potential ASABE members.
Learning Objective: Understanding the importance of wearing the tractor seatbelt while operating.
Benefits: Encouraging attending to participate and contribute to the ASABE sponsored Seatbelt and TOPs usage Logo contest.
Invited Speakers: Dale Dobson, Kentucky State Dept of Agriculture
Alyssa Fodor
Session #149
ENERGY AND ENVIRONMENT – GLOBAL PERSPECTIVES - Sponsoring Committee: AABFEIO, T-11, INTL-601
Monday, July 22 – 2:30PM-5:00PM
Location: Chicago B - Sheraton
Target Audience: Researchers, graduate students, and industry professionals interested in energy related issues.
This invited technical session will feature speakers from North America and India who will provide some global perspectives on the energy-environment nexus.

Session #150
CHINA EXCHANGE IN FOOD, ENERGY AND ENVIRONMENT – Sponsoring Committee: Intl-601, AOCABFE
Monday, July 22 – 2:30PM-5:00PM
Location: Chicago C - Sheraton
Promoting and facilitating academic and research exchanges among scholars from China and other countries. Invited speakers will share their views and perspectives on international exchange in food, renewable and bio-energy, and climate change and environment protection.

2:30pm Overview of Administration policies, technologies development and applications in agricultural product traceability in China
Dr. Chuanheng Sun, China, China National Engineering Research Center for Information Technology in Agriculture (NERCITA)).

2:45pm Overview of the U.S. food processing research programs
Dr. Juming Tang, Washington State University

3:00pm Research advance in photosynthetic hydrogen production technology from biomass in China.
Dr. Quanguo Zhang, Henan Agricultural University

3:15pm Overview of the U.S. research and development programs in bioenergy and bioproducts
Dr. Yebo Li, The Ohio State University

3:30pm Wastewater treatment in rural China: from research to practice
Dr. Karen Mancel, The Ohio State University

3:45pm Sino-US collaborations in energy and the environment
Dr. Yuanhui Zhang, University of Illinois

4:00pm Partnership in academic mobility
Dr. K.C. Ting, University of Illinois

4:15pm Experiences in collaboration with Chinese industries
Dr. Ruihong Zhang, University of California at Davis

4:30pm Panel Q&A and free discussions

Session #151
FUEL SYSTEM ELECTROSTATIC DISCHARGE (ESD) MITIGATION FOR OFF-ROAD VEHICLES
Monday, July 22 – 1:00PM-2:00PM
Location: Benton A - Sheraton
This session is for all students, professors, and industry professionals who desire to learn more about electrostatic discharge (ESD) and fuel system design guidelines. The objective is to convey why ESD is becoming more common and provide information about today’s fuels and relate SAE J1645 to off-road vehicles. The information provided should help attendees to understand the factors that contribute to the phenomenon, identify the importance of ESD, and illustrate alternatives to mitigate static electricity in fuel systems.

Invited Speaker: Dr. X. Tao, Fuels and Lubricants Research Southwest Research Institute

Session #153
GREENHOUSE GASES – RAP SESSION
Monday, July 22 – 2:30PM-5:00PM
Location: Chicago A - Sheraton
Moderator: Russell McGee, Texas A&M University
A panel of air quality experts discuss the science and politics of greenhouse gas legislation. Question and answer format.

Panelists: Dr. Calvin Parnell, Regents Professor
Holder of the endowed Cotton Chair and
Director of the Center for Agricultural Air Quality
Engineering and Science (CAAAES)

Dr. Bryan Shaw, Chairman, Texas Commission on
Environmental Air Quality (TCEQ)

TUESDAY, JULY 23
BUSINESS AND MANAGEMENT 101
Tuesday, July 23 – 7:30AM-9:00AM
Location: Northrup - Sheraton
This session is a series of invited speakers focused on developing members’ business and management skills. Outstanding industry, academic and government employed ASABE members will share their experiences and knowledge to help develop the next generation of worldwide leaders in agricultural and biological engineering.
Meetings & Sessions

Session #226

BIOENERGY DAY
Tuesday, July 23
Location: Century Ballroom - Westin

8:00AM  Introduction and Overview of the Bioenergy Day
8:15AM  Keynote Speaker – Dr. Sonny Ramaswamy
         Director, USDA-NIFA
9:45AM  Panel 1  “Supply of High Tonnage Feedstock”
         Moderator: Sam Tagore, US DOE
2:00PM  Panel 2  “Critical Needs in Biorefining Research
         and Development”
         Moderator: Ray Huhnke, Oklahoma State Univ
4:00PM  Poster Session – New Frontiers in Bioenergy
         Location: Gillham Hall-Sheraton

Session #222

ENERGY EFFICIENCY IN FOOD AND AGRICULTURAL PROCESSING – Sponsoring Committee: FPE-703
Tuesday, July 23 – 9:30AM-12:00PM
Location: Chicago A - Sheraton

Target Audience: Agricultural and food process engineers, processing companies, education and research institutions, quality control and safety managers in agricultural or food processing and manufacturing operations.

Learning Objectives: Understand and disseminate new interventions for energy efficient agricultural or food processing operations.

Benefits: Technology transfer among researchers for improved and efficient agricultural or food processing operations.

Invited Speakers: Maria Billris
Gerard Corkery
Karunanithy Chinnadurai
Dennis Heldman
Simeon O Jefayinfa

Session #227

CAN ENGINEERS TEACH “SOFT SKILLS” TO ENGINEERING STUDENTS? – Sponsoring Committee: ED-203
Tuesday, July 23 – 9:30AM-12:00PM
Location: Chicago B - Sheraton

Target Audience: Teaching faculty and ABET committee members, interested industry members.

Learning Objectives: Address the learning challenges related to meeting the ABET soft skill outcomes.

Benefits: Obtain different viewpoints and methods for teaching soft skills.

Invited Speakers: Dr. Rodney Holcomb, Robert M. Kerr Rood & Agricultural Products Center, Stillwater, OK
Dr. Ron Morgan, Halliburton Energy Services, Duncan, OK
Dr. David Jones, University of Nebraska, Lincoln, NE

1/4 SCALE TRACTOR DESIGN COMPETITION
Tuesday, July 23 – 12:15PM-2:15PM
Location: Chouteau B - Sheraton

Top finishing teams in the Team Presentation category from this year’s competition will give their winning presentations during this session. This is an excellent opportunity for students to see what a top presentation looks like and use that knowledge to improve their own presentation in future years. There will be ample time for Q & A, so come ready to learn.

ASABE BUSINESS MEETING
Tuesday, July 23 – 12:30PM-1:15PM
Location: Century Ballroom - Westin

President Tony Kajewski and President-Elect Lalit Verma will preside over the society’s update and business meeting.

Session #239

IMPORTANCE OF SOIL MECHANICS IN CONSERVATION SYSTEMS – Sponsoring Committee: SW
Tuesday, July 23 – 2:30PM-5:00PM
Location: Chicago C - Sheraton

Soil mechanics plays a vital role in the success of conservation systems. The USDA-NRCS has had a long-standing role in using science-based technology to provide conservation planning and assistance to land owners and operators and others to benefit the soil, water, air, plants and animal for productive lands and healthy ecosystems. Within the USDA-NRCS, the National Design, Construction, and Soil Mechanics Center (NDCSMC) provides interdisciplinary technical support for design, construction, operation, and rehabilitation of complex engineering projects essential to resource conservation, environmental enhancement and agricultural. The NDCSMC-Soil Mechanics Laboratory (SML) provides state-of-the-art soil mechanics testing, analyses and recommendations adapted to the needs of customers to design and implement conservation practices and systems that conserve, improve, and sustain our natural resources and the environment. This invited technical session features the staff from the NDCSMC-SML and the importance soil mechanics plays in conservation systems. Presentations will include topics on the role of the NRCS Soil Mechanics laboratories in design and construction of conservation engineering structures and practices, and more specific topics related to design of compacted soil liners for agricultural waste storage structures, design of small embankment dams, filter design, and the identification and concerns with dispersive clay soils.

Invited Speakers: Steve Reinsch
Keith Grotrian
Steve Garner
Jody Kraenzel
Art Heibel
Meetings & Sessions

Session #244
ADVANCES IN GESTATION SYSTEMS AND EMERGING SWINE HOUSING ISSUES
Tuesday, July 23 – 2:30PM-5:00PM
Location: Penn Valley - Westin:
Sponsoring Committee: SE
2:30PM Introduction
2:35PM Swine Welfare: The Integration of Various Perspectives
Sherrie Niekamp, Director of Swine Welfare, National Pork Board, Des Moines, IA
3:15PM Conversion to Group Housing for Sows: Integrator’s Perceptive
Steve Pollmann, President of Western Operations, Murphy-Brown, LLC, Ames, IA
4:00PM A Review of Sow Housing and Its Implications for Gestating Sows
Jeremy Brue, Iowa State University, Ames, IA
4:30PM Geostatistics Analysis of Environmental Variables Assessment in Pigs Reared under Wean to Finish Barn during Weaning Phase
Daniella J. Moura, University of Campinas, Campinas, Sao Paulo, Brazil

Session #250
NON-DESTRUCTIVE TEXTURE EVALUATION OF HORTICULTURAL PRODUCTS – Sponsoring Committee: FPE-701
Tuesday, July 23 – 2:30PM-5:00PM
Location: Chicago A - Sheraton
Target Audience: Discussion of the new standard proposal on “Non-Destructive Texture Evaluation of Horticultural Products”

Session #253
AGRICULTURAL SUSTAINABILITY ADVANCEMENTS AND DEVELOPMENT OF SUSTAINABILITY INITIATIVES, STANDARDS AND POSSIBLE REGULATIONS – Sponsoring Committee: T-13 & T-16
Tuesday, July 23 – 2:30PM-5:00PM
Location: Chicago B - Sheraton:
There are several efforts by organizations across the agricultural supply chain attempting to define sustainability. Some groups are identifying metrics to track progress while others are prescribing practices. This session will review many of these efforts and conclude with open discussion about what role ASABE should play in the assessment of agricultural sustainability.
2:30PM Session Introduction
Ed Barnes, Director, Agricultural Research, Cotton Inc.
2:35PM The agricultural sustainability landscape and the role of Field to Market
Fred Luckey, Chair, The Keystone Alliance for Sustainable Agriculture
3:05PM Past and current attempts to codify agricultural sustainability
Tom Redick, Global Environmental Ethics Counsel (GEEC), LLC
3:35PM Life Cycle Analysis and the need to improve sustainability metrics for agriculture
Bill Norman, VP-Technical Services, National Cotton Council
4:05PM Experiences in developing the ISO standard for agricultural machinery sustainability
Mike Sennett, Consultant & Principle, Product Safety Help
4:30PM Group discussion of next steps for ASABE involvement in sustainability

Session #254
ABET PEV REFRESHER WORKSHOP – RAP SESSION – Sponsoring Committee: ED-204
Tuesday, July 23 – 2:30PM-5:00PM
Location: Senators - Westin
Target Audience: Current ASABE ABET Program Evaluators (PEV’s).
Learning Objectives: This session is for current ABET program evaluators and evaluators in training. Updates and changes to the ABET criteria will be discussed along with best practices for PEV’s.
Benefits: PEV’s will be up-to-date for any ABET visits in the Fall of 2013.

WEDNESDAY, JULY 24
Session #308
MODEL-SPECIFIC CALIBRATION AND VALIDATION – Sponsoring Committee: SW
Wednesday, July 24 – 7:30AM-12:15PM
Location: Chicago A - Sheraton
Target Audience: Hydrologic and water quality model users and developers.
Learning Objective: To learn about model use, calibration and validation.
Benefits: Gain insights of proper calibration and validation of models presented.
Invited Speakers: Dr. Prasanna Gowda
Dr. Susan Wang
Dr. Liwang Ma
Dr. Jeff Arnold
Dr. Dennis Flanagan
Dr. R. Wayne Skaggs
Dr. Fouad Jaber
Dr. Rob Malone
Dr. Del Bottcher
Session 324  
INTERNATIONAL AGRICULTURAL STANDARDS DEVELOPMENT – EUROPE, SOUTH AMERICA, ASIA –  
Sponsoring Committee: T-13  
Wednesday, July 24 – 7:30AM-10:00AM  
Location: Van Horn C - Sheraton  
7:30AM  Session Introduction and T-13 Overview  
Scott Cedarquist, ASABE Staff  
7:35AM  European Legislative Issues Impacting Agricultural Equipment: Updates on the Proposed Tractor Directive  
Antoon Vermeulen, Ag Product Development, CNH Belgium  
8:30AM  Emerging Standards Topics for Chinese Agriculture  
Wang Yingkuan, Vice Secretary General, Chinese Society of Agricultural Engineering  
9:15AM  The Changing Role of Standards for Agricultural Equipment in South America  
Daniel Zacher, John Deere Brazil (Invited)

Session 328  
ECOSYSTEM SERVICES: MEASUREMENTS, MODELING, AND TRADE-OFF ANALYSES – Sponsoring Committee: SW-22  
Wednesday, July 24 – 7:30AM-10:00AM  
Location: Senators-Westin  
Moderator: Sanjay Shukla, University of Florida  
TARGET AUDIENCE: Engineers, Scientists (ecologists, hydrologists), Consultants, Local, State and Federal Governments, and Students.  
LEARNING OBJECTIVES: 1) How to develop, verify, and implement an ecosystem services program; 2) development of decision tools for evaluating trade-offs in ecosystem services. The session achieves the learning objectives through a case study of an ecosystem services program in Florida.  
DESCRIPTION: This session will focus on quantification of payments for environmental services using measurements and modeling, trade-off analyses of multiple ecosystem services, and development of decision tools. The topics covered will include: an introductory overview of ecosystem services; measurement and modeling of water quantity (storage volume, flows) and quality (N and P loads), monitoring and evaluation of ecological responses (wetland plants, invertebrates, amphibians, and fish) and ecosystem disservices (mosquitoes, invasive plants, and loss of forage); the development of hydro-ecologic models to predict ecological responses to hydrologic change; use of simulation models to help buyers and sellers of PES programs evaluate participation and the trade-offs among ecosystem services and disservices; and the development of decision support systems for evaluating the management alternatives.  
Invited Speakers: Hillary Swaim  
Benita Whalen  
John Fauth  
Patrick Bohlen  
Gregory Kiker  
Sanjay Shukla

Session #347  
ABET PROGRAM EVALUATOR (PEV) INTRODUCTION – RAP SESSION – Sponsoring Committee: ED-204  
Wednesday, July 24 – 9:00AM-10:00AM  
Location: Mayors - Westin  
Target Audience: Persons interested in becoming an ASABE Program Evaluator (PEV’s).  
Learning Objectives: This session is intended for persons interested in becoming an ABET program evaluator, whether employed in government, industry or academia. An open discussion will be held to provide basic information on the ABET PEV training process, expectations, and timelines.  
Benefits: This session is a good place to begin if you’ve been curious about assisting with ABET Evaluations.

Session #348  
ABET PRACTICES FOR THE ACADEMIC COMMUNITY – RAP SESSION – Sponsoring Committee: ED-204  
Wednesday, July 24 – 10:00AM-11:00AM  
Location: Mayors - Westin  
Target Audience: Department Heads and department ABET program coordinators, or anyone interested in learning more about the ABET accreditation process.  
Learning Objectives: This session will focus on practices and experiences associated with ongoing assessment and preparation for ABET visits. Participants with various levels of assessment experience will be involved in group discussions.  
Benefits: This session is a good place to exchange ABET best practices and other ABET experiences from your peers experience.
SATURDAY, JULY 20

CE #1
DESIGNING AGRICULTURAL APPLICATIONS FOR HANDHELD MOBILE DEVICES –
Sponsoring Committee: IET-254
Saturday, July 20 – 8:00AM-12:00PM
LOCATION: Chouteau B – Sheraton
Level of Difficulty: Entry Level
Instructor: Joseph Dvorak, University of Kentucky
Because of the strong demand and excellent response to last year’s class, this course is being offered again this year. This class is a basic introduction to App development. It will cover the basics of App development and tools that are required for various types of development. Example applications will be developed in App Inventor which is a graphical method of creating programs for Android. App Inventor enables the quick creation of basic Apps without extension programming knowledge. This class will focus on easy ways to get started with App programming and publishing. No previous programming experience is necessary for this course. People wishing to go further in-depth with App programming and use a more advanced system for App development are encouraged to take CE #4 which will utilize the Eclipse environment. Participants will need to bring a laptop on which they may install and run an application (App Inventor) to enable development.
COST: $75.00

CE #2
WATER EROSION PREDICTION PROJECT (WEPP) MODEL APPLICATION
Saturday, July 20 – 8:00AM-5:00PM
CANCELLED

SUNDAY, JULY 21

CE #3
HAND-ON TRAINING ON SIMULATING FIELD SCALE IMPACTS OF LAND MANAGEMENT PRACTICES USING WEB AND DESKTOP BASED TOOLS
Sunday, July 21 – 8:00AM-12:00PM
CANCELLED

CE #4
INTRODUCTION TO DEVELOPING APPS FOR ANDROID OPERATING SYSTEM – Sponsoring Committee: ED-208
Sunday, July 21 – 9:00AM-12:00PM
Location:: Van Horn B – Sheraton
Level of Difficulty: Entry Level
Instructor: Dharmendra Saraswat, University of Arkansas
Based on a recent industry estimate, 50% of mobile phone subscribers in the USA own smartphones. It is widely believed by industry circles that smartphone penetration is showing no signs of slowing. The rising trend of adoption of smartphone has also been reported by surveys involving county extension agents and farm producers. A focus group poll conducted for members of Iowa Soybean Association, with farmers of a median age of 45, showed that 70% producers would use information delivered via a smartphone. Therefore, it is timely to incorporate mobile computing electives to the biological and agricultural engineering curriculum in order to develop appropriate applications for reaching out to our stakeholders, producers, extension agents, consultants, students, policy makers etc.

This three hour workshop will introduce participants to mobile App development using freely available Google’s Android OS. Some simple Android Apps will be developed with Eclipse and then run on an emulator. Participants will be provided example code to become familiar with writing Java programs in Eclipse. A few Android smartphones and tablets will also be provided to experiment with installing Apps on actual devices. Resource material required to learn basic Java concepts and links to necessary software will be shared with registered participants. It is required of the participants to bring their own laptop preloaded with the suggested software.

This workshop is geared towards beginners in Android App programming.
COST: $83.00

ASABE Career Fair
Tuesday, July 23
9:30AM-12:00PM

Don’t miss this outstanding networking opportunity that allows interested individuals to connect with Fortune 500 companies, agricultural and bio-based businesses, bio-research companies and major land grand universities looking for qualified candidates.
CE #5
PROTECTING INTELLECTUAL PROPERTY: WHAT EVERY ENGINEER NEEDS TO KNOW
Sunday, July 21 – 11:00AM-12:00PM
Location: Pershing East – Westin
Level of Difficulty: Intermediate
Instructor: Nathan E. Oleen, Husch Blackwell LLP
Target Audience: All practicing engineers, professors, researchers and students in academia and industry.
Learning objectives: Intellectual property rights have become increasingly important in today’s competitive marketplace. Engineers are often not provided with the vital information they need for ensuring the protection of the patent rights in their inventions. This one-hour presentation will address patent and intellectual property issues that impact engineers on a day-to-day basis. It will provide attendees with useful information they can use in their practices and will provide a practical understanding of the steps necessary for protecting intellectual property, both in the U.S. and internationally. It will also cover best practices and practical strategies for protecting inventions, especially in light of recent changes in the U.S. patent laws. It will further address common pitfalls that inventors often encounter and provide tips for avoiding those pitfalls.
COST: $25.00

CE #6
NOVEL AND ADVANCED FOOD PROCESSING TECHNOLOGIES
Sunday, July 21 – 1:00PM-5:00PM
CANCELLED

CE #7
YPC PROFESSIONAL DEVELOPMENT SESSION –
Sponsoring Committee: YPC
Sunday, July 21 – 1:00PM-5:00PM
Location: Van Horn B – Sheraton
Instructor: Dr. Peter Gorder, University of Colorado
Enhance your skills in understanding and solving problems through a CPD session that explores the technique and advantages of Quality Function Deployment.
COST: $30.00
SUNDAY, JULY 21

ASABE FOUNDATION SILENT AUCTION
Sunday, July 21 thru Wednesday, July 24
Location: Sheraton Grand Ballroom - Sheraton

The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

ASABE WELCOME RECEPTION
Sunday, July 21 – 4:30PM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton

All meeting registrants are invited to attend our welcome reception. This is a good time to network with other attendees and to make further plans for dinner after the reception. The Kansas City Convention and Visitors Bureau will have a representative available to assist you in making your dining reservations.

ALUMNI RECEPTION OF COLLEGE OF BIOSYSTEMS ENGINEERING AND FOOD SCIENCE, ZHEJIANG UNIVERSITY
Sunday, July 21 – 6:30PM-10:30PM
Location: Pershing East - Westin

Alumni and visiting professors of College of Biosystems Engineering and Food Science, Zhejiang University are invited to enjoy a reception at the convention center and catch up with the old friends. Please send email to shaojin_wang@wsu.edu by July 19 if you plan to attend.

MONDAY, JULY 22

Event #5

PRAYER BREAKFAST
Monday, July 22 – 6:30AM-8:00AM
Location: Signboard I - Westin

The Fellowship of Christian Agricultural Engineers invites all meeting registrants, spouses and guests to the interdenominational prayer breakfast. The continental breakfast will begin promptly at 6:30AM and end at 8:00AM. Pre-registration and ticket is required.

COST: $30.00

WHAT YOU DIDN’T KNOW ABOUT ASABE AND PROFESSIONAL LICENSURE
Monday, July 22 – 7:00AM-8:00AM
Location: Fremont - Sheraton

How do I get the most out of my time at the meeting, my membership in ASABE and my career as an engineer? The YPC and Professional Engineering Institute (PEI) will answer these questions and more. Come to learn more about the benefits of professional licensure within our society as well as learn about different topics about how the society functions internally. Topics to be addressed include Professional Licensure, YPC’s history since its inception 10 years ago, Communities of ASABE, as well as a preview of events to come so you can make the most of the meeting. Refreshments will be provided. All members, especially first-time meeting attendees and preprofessionals are encouraged to attend. Information from past year’s sessions will be available.

ASABE GENERAL SESSION / RECOGNITIONS
KEYNOTE SPEAKER
Monday, July 22 – 8:00AM-9:30AM
Location: Century Ballroom - Westin

ASABE President Tony Kajewski welcomes each of you to the ASABE Annual International Meeting. Our keynote speaker is Helmi Ansari who is the Director of Sustainability and Org. Capability at PepsiCo Foods Canada. The title of his presentation is “Sustainability… & our efforts at PepsiCo Foods Canada”.

Technical Session #125

GLOBAL CHALLENGES FORUM
Monday, July 22 – 9:30AM-12:00PM
Location: Chicago C - Sheraton

Moderator: Robert A. Easter, Ph.D.
President, University of Illinois

The Global Challenges Forum will be a moderated session, which will start with a summary of the grand challenges facing humanity as we struggle to provide enough food, feed, fiber, clean water and renewable fuels for a growing population, all while resources continue to be constrained. Representatives from international agricultural and biological technical societies will share their top two or three opportunities their organizations are facing. The session will be conducted in a format to encourage broad-based dialogue and all AIM attendees are welcome to attend.

International Community

The International Affairs Committee of ASABE annually welcomes members and guests from over 40 countries to the ASABE Annual International Meeting. We hope you will enjoy the meeting, find it a very rewarding experience and establish many new contacts and friendships. The International Affairs Committee encourages you to attend the International 601 Committee meeting and become involved in our activities.
Session #149
ENERGY AND ENVIRONMENT – GLOBAL PERSPECTIVES - Sponsoring Committee: AABFEIO, T-11, INTL-601
Monday, July 22 – 2:30PM-5:00PM
Location: Chicago B - Sheraton
Target Audience: Researchers, graduate students, and industry professionals interested in energy related issues.
This invited technical session will feature speakers from North America and India who will provide some global perspectives on the energy-environment nexus.

Session #150
CHINA EXCHANGE IN FOOD, ENERGY AND ENVIRONMENT – Sponsoring Committee: Intl-601, AOCABFE
Monday, July 22 – 2:30PM-5:00PM
Location: Chicago C - Sheraton
Promoting and facilitating academic and research exchanges among scholars from China and other countries. Invited speakers will share their views and perspectives on international exchange in food, renewable and bio-energy, and climate change and environment protection.

2:30pm Overview of Administration policies, technologies development and applications in agricultural product traceability in China
Dr. Chuanheng Sun, China, China National Engineering Research Center for Information Technology in Agriculture (NERCITA).

2:45pm Overview of the U.S. food processing research programs
Dr. Juming Tang, Washington State University

3:00pm Research advance in photosynthetic hydrogen production technology from biomass in China.
Dr. Quanguo Zhang, Henan Agricultural University

3:15pm Overview of the U.S. research and development programs in bioenergy and bioproducts
Dr. Yebo Li, The Ohio State University

3:30pm Wastewater treatment in rural China: from research to practice
Dr. Karen Mancl, The Ohio State University

3:45pm Sino-US collaborations in energy and the environment
Dr. Yuanhui Zhang, University of Illinois

4:00pm Partnership in academic mobility
Dr. K.C. Ting, University of Illinois

4:15pm Experiences in collaboration with Chinese industries
Dr. Ruihong Zhang, University of California at Davis

4:30pm Panel Q&A and free discussions

AFRICAN NETWORK GROUP –
Sponsoring Committee: Intl-601, ANGASABE
Monday, July 22 – 5:15PM-7:00PM
Location: Mission - Westin
This group will promote and facilitate academic and research exchanges/interaction among scholars that are interested in the agricultural, energy and food technology development in Africa. Participants will share their views and perspectives on food, renewable and bio-energy, and climate change and environment protection in Africa.

Event #8
ASSOCIATION OF AGRICULTURAL, FOOD AND BIOLOGICAL ENGINEERS OF INDIAN ORIGIN (AABFEIO) MEETING
Monday, July 22 – 5:30PM-9:30PM
Location: Chicago A - Sheraton
The 2013 Annual Business meeting for the Association of Agricultural, Biological and Food Engineers of Indian Origin (AABFEIO) will be held from 5:30PM to 6:30PM on Monday, July 22 at the ASABE conference venue. Following the meeting, the Association will have its annual dinner at a local restaurant from 7:00PM to 9:30PM.
COST: $25.00 Member / $15.00 Students

Event #9
ASSOCIATION OF KOREAN AGRICULTURAL, BIOLOGICAL AND FOOD ENGINEERS (AKABFE) MEETING
Monday, July 22 – 6:30PM-8:00PM
Location: Chicago B - Sheraton
Association of Korea Agricultural, Biological and Food Engineers (AKABFE) will have an annual meeting. A business meeting will take place and the Association dinner will follow at a nearby restaurant.
COST: $30.00

Event #10
ASSOCIATION OF OVERSEAS CHINESE AGRICULTURAL, BIOLOGICAL, AND FOOD ENGINEERS (AOCABFE) ANNUAL BUSINESS MEETING
Monday, July 22 – 5:15PM-6:30PM
Location: Chicago C
The AOCABFE annual meeting provides a platform for promoting and facilitating research and educational exchanges among researchers with Chinese origin or associations in the areas of agricultural, biological and food engineering. The ASABE meeting attendees with international collaboration interests are invited to attend the meeting as well. The AOCABFE activities in 2012-2013 will be reviewed and plans of action for 2013-2014 will be discussed. The AOCABFE Award Banquet will follow the business meeting from 6:30pm to 10:30pm at the New Peking Chinese Restaurant, 540 Westport Road, Kansas City, Missouri. Recognition and awards will be presented at the banquet.
COST: $65.00 Member; $20.00 Student Member.
TUESDAY, JULY 23

Event #12

INTERNATIONAL BREAKFAST
Tuesday, July 23 – 7:00AM-8:30AM
Location: Ambassadors - Westin

The International Breakfast is a great opportunity to interact with peers from many different countries. If you are coming from abroad or have an interest in international issues this is the place to meet new people and begin long and fruitful working relationships. The speaker for this International Breakfast will be the 2013 recipient of ASABE’s prestigious Kishida Award, Vilas M. Salokhe, Vice Chancellor of Kaziranga University in Jorhat, Assam, India.

COST: $30.00

ASABE ROBOTICS STUDENT DESIGN COMPETITION
Tuesday, July 23 – 8:00AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton

The American Society of Agricultural & Biological Engineers Robotics Competition is a student design competition that was conceived in 2006. The aim of the competition is to encourage undergraduate as well as graduate students to develop innovative robotic solutions to real life problems in the agricultural arena. The competition travels with the Annual International Meeting, and hence, the solutions must allow transportation in airplanes. The challenge will be communicated through the website and digital flyers describing the rules, requirements, limitations, deadlines and demonstration procedures.

The competition is open to students in one or more departments from a single university. There is no maximum number of team members per team, so multiple teams from a single University are allowed. Every team should have a faculty advisor who is also the contact person with ASABE. There are no classes or leagues. Every team will work on the same challenge. There are no limits to the budget. Teams are encouraged to obtain funding for their solutions and participation through on-campus resources such as departmental sources and engineering councils, as well as from companies.

Demonstrations 8:00AM-10:00AM
Competition 10:00AM-12:00PM

Technical Session #226

BIOENERGY DAY
Tuesday, July 23
Location: Century Ballroom - Westin

8:00AM Introduction and Overview of the Bioenergy Day
8:15AM Keynote Speaker – Dr. Sonny Ramaswamy
Director, USDA-NIFA
9:45AM Panel 1 “Supply of High Tonnage Feedstock”
Moderator: Sam Tagore, US DOE
2:00PM Panel 2 “Critical Needs in Biorefining Research and Development”
Moderator: Ray Huhnke, Oklahoma State Univ
4:00PM Poster Session – New Frontiers in Bioenergy
Location: Gillham Hall-Sheraton

Technical Session #255

TRENDS IN THE AGRICULTURAL AND BIOLOGICAL ENGINEERING PRACTICES IN DEVELOPING COUNTRIES
Tuesday, July 22 – 9:30AM-12:00PM
Location: Chicago C - Sheraton
See Session 255 in the Technical Session pages of this program for complete listing of this session.

CAREER FAIR
Tuesday, July 23 – 9:30AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton

The Career Fair is just one of the many highlights of the ASABE Annual International Meeting. It is an outstanding networking opportunity that allows interested individuals to connect with Fortune 500 companies, agricultural and bio-based businesses, bio-research companies and major land grant universities looking for qualified candidates.

The ASABE Career Fair provides an opportunity for employee and potential employees to come together informally and share information. Academia will also be represented with opportunities at the masters and doctoral level.

Employers register their job positions at the registration desk and receive an interview table number. These openings are posted with the table numbers located near the ASABE registration desk for review. Prospective employees are invited to seek out employers of interest and exchange information.

ASABE BUSINESS MEETING
Tuesday, July 23 – 12:30PM-1:15PM
Location: Century Ballroom - Westin

President Tony Kajewski and President-Elect Lalit Verma will preside over the society’s update and business meeting.

ORDER OF THE ENGINEER INDUCTION CEREMONY
Tuesday, July 23 – 3:00PM-5:00PM
Location: - Century Ballroom - Westin

Engineering graduates and registered engineers are invited to accept the Obligation of the Engineer and a stainless steel ring, which is worn on the little finger of the engineer’s working hand. All graduates of ABET accredited engineering programs; seniors in ABET accredited programs within two academic years of graduation; licensed PEs; and members of the Canadian Calling by reciprocity are invited to join the Order. All inductees must be present to accept their certificate and ring at the induction ceremony. The cost of entering the Order is $10.00 and inductees may register with Tina Schultz at the membership booth. Learn more about the Order here - http://www.order-of-the-engineer.org/.
ASABE FELLOWS INDUCTION CEREMONY/RECEPTION
Tuesday, July 23 – 6:00PM-7:30PM
Location: Century Ballroom – Westin
All registrants are invited to this special recognition ceremony and reception honoring the 2013 ASABE Fellows. ASABE defines a Fellow as a member of unusual professional distinction, with outstanding and extraordinary qualifications and experience in, or related to, the field of agricultural, food, or biological systems engineering. They possess a minimum of 20 years of active practice in, or related to, the profession of engineering; the teaching of engineering; or the teaching of an engineering-related curriculum and a minimum of 20 years as an active Member-Engineer or Member in ASABE.

Event #15
ASABE FOUNDATION DINNER AT THE AMERICAN JAZZ MUSEUM
Tuesday, July 23 – 7:15PM-10:00PM
Location: Bus transportation to the Jazz Museum – Pickup and drop off at the Westin
Located in the historic 18th & Vine Jazz District of Kansas City, this distinctive museum showcases the sights and sounds of American jazz. The development and heyday of this exceptional American art form becomes genuine through four Masters. See Charlie Parker’s saxophone, one of Louis Armstrong’s trumpets, the sequined gown worn by Ella Fitzgerald, and memorabilia from Duke Ellington. While we will enjoy a typical Kansas City barbecue buffet in the beautiful atrium area, the museum will be open for us to view and experience the multiple exhibits on display. Docents will help us fully appreciate the compelling collections of rare photos, sheet music, posters, costumes, artifacts, album covers and listening kiosks. Interactive exhibits will bring American jazz to life. The American Jazz Museum is significant in the community, hosting thousands of world-class live jazz performances and countless educational programs as it promotes the historic and cultural relevance of jazz music and arts. This is a uniquely typical Kansas City Experience!
Dinner and transportation to and from the Jazz Museum—and the company of some great folks—are all included.
COST: $100.00/person

Event #16
ASABE AWARDS LUNCHEON
Wednesday, July 24 – 12:30PM-2:30PM
Location: Century Ballroom - Westin
Plan to attend the most important recognition event of the year. The installation of ASABE’s 2013 President, Lalit Verma, will immediately follow the awards presentation.
Awards to be presented are:
- Pharos of Alexandria Global Learning
- Yoerger Preprofessional Engineer of the Year
- Robert E. Stewart Engineering-Humanities
- Gale A. Holloway Professional Development
- New Holland Young Researcher
- A.W. Farrall Young Educator
- Sunkist Young Designer
- John Deere Gold
- Rain Bird Eng. Concept of the Year
- James R. and Karen A. Gilley Academic Leadership
- PEI Professional Engineer of the Year
- Kishida International
- McCormick-Case Gold Medal
- International Food Engineering
- Henry Giese Structures & Environment
- ADS/Hancor Soil and Water Engineering
- G.B. Gunlgoson Countryside Engineering
- Mayfield Cotton Engineering
- SMV Technologies Ergonomics, Safety and Health
- Heermann Sprinkler Irrigation
- Massey-Ferguson Educational Gold Medal
- 2013 Fellows (will be recognized)
COST: Included with full meeting registration
$40.00 additional tickets

WEDNESDAY, JULY 24
Technical Session #322
INTERNATIONAL AGRICULTURAL STANDARDS DEVELOPMENT – EUROPE, SOUTH AMERICA, ASIA – Invited Speakers
Wednesday, July 24 – 7:30AM-10:00AM
Location: Chicago C - Sheraton
See Session 322 in the Technical Session pages of this program for complete listing of this session.
SATURDAY, JULY 20
Tour #1
KANSAS CITY ROYALS BASEBALL GAME - YPC SOCIAL EVENT
Saturday, July 20 – 6:00PM-11:00PM
Location: Ball Park
Come on out and enjoy the All-American pastime...Baseball! Relax in outfield box seats on the Right Field line while watching the KC Royals play the Detroit Tigers, and socialize with the Young Professionals of the Society. This event ticket includes transportation from the hotel and back, Outfield Box seating at the Kansas City Royals vs. Detroit Tigers game, and Loaded Value on your ticket to use as you wish for stadium food or merchandise. All meeting participants and guests are invited to this YPC planned event.
Cost: $59.00 includes entry to the game, $20 food coupon and bus transportation. Please plan on arriving 15 minutes prior to departure time at Bus Staging area of the Sheraton.

SUNDAY, JULY 21
OPEN CHAPEL
Sunday, July 21 – 8:00AM-9:00AM
Location: Chouteau 1&2 - Sheraton
All Preprofessionals and Professionals are invited to attend Open Chapel. Dr. Joe Glass of California Polytech State University will preside over the service.

ASABE FOUNDATION SILENT AUCTION
Sunday, July 21 – 8:00AM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

FOUNTAIN WARS PRESENTATION JUDGING
Sunday, July 21 – 9:15AM-11:00PM
Location: Chouteau 1&2 - Sheraton
Are you interested in the preparation and creative behind the scenes efforts of the different Fountain Wars teams? Come listen to the oral presentation phase of the competition and get a heads up on what is going to be displayed at the building-testing phase that takes place on Monday.

INTERNATIONAL PREPROFESSIONAL COMMUNITY (IPC) BUSINESS MEETING / PROFESSIONAL DEVELOPMENT SESSION
Sunday, July 21 – 12:30PM-2:30PM
Location: Chouteau 1&2 - Sheraton
This is the main event of the International Preprofessional Community at AIM 2013. The current IPC officers will share the year’s goals and progress and hold roll call. Also on the agenda is the election of 2013-2014 IPC officers. Come represent your school and preprofessional chapter! All students are highly encouraged to come to this function. Please note that check-in for the poster competition will be done during the meeting. Participants will be dismissed early to set up their posters in the exhibit hall. (Competitors should bring their poster to the meeting.)

Tours
KANSAS CITY HIGHLIGHTS TOUR
Sunday, July 21 – 1:00PM-4:00PM
Location: Bus departs from Sheraton
See Activities listing for complete description of the tours.
COST $35.00 includes deluxe coach bus and guide

UNDERGRADUATE POSTER COMPETITION
Sunday, July 21 – 3:00PM-4:30PM
Location: Gillam Hall - Sheraton
This undergraduate poster competition encourages Preprofessional ASABE members to interact with industry, faculty, and fellow students by giving a technical poster presentation on an engineering project useful to agriculture and related areas.
Feel free to come browse the posters, engage the students in dialogue about their experiences, or listen to their brief research poster summary.
Winners of this competition will receive cash awards of $500, $300, and $200 for first, second, and third places, respectively. Register at ASABE.IPC@gmail.com for this competition. Reservations will be accepted until July 20.

ASABE WELCOME RECEPTION
Sunday, July 21 – 4:30PM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
All meeting registrants are invited to attend our welcome reception. This is a good time to network with other attendees and to make further plans for dinner after the reception. The Kansas City Convention and Visitors Bureau will have a representative available to assist you in making your dining reservations.
Event #3

WOMEN IN ASABE SOCIAL
Sunday, July 21 – 6:30PM-7:30PM
Location: Chouteau 1&2 - Sheraton

The Women in ASABE social is an informal mixer open to all female ASABE members. Hosted by Past-President Sonia Maassel Jacobsen, this event will provide a unique opportunity to meet, socialize and network with other women from across ASABE. Refreshments will be served. Registration is required but there is no charge for this event.
COST: Preregistration is required.

MONDAY, JULY 22

WHAT YOU DIDN’T KNOW ABOUT ASABE AND PROFESSIONAL LICENSURE
Monday, July 22 – 7:00AM-8:00AM
Location: Fremont - Sheraton

How do I get the most out of my time at the meeting, my membership in ASABE and my career as an engineer? The YPC and Professional Engineering Institute (PEI) will answer these questions and more. Come to learn more about the benefits of professional licensure within our society as well as learn about different topics about how the society functions internally. Topics to be addressed include Professional Licensure, YPC’s history since its inception 10 years ago, Communities of ASABE, as well as a preview of events to come so you can make the most of the meeting. Refreshments will be provided. All members, especially first-time meeting attendees and preprofessionals are encouraged to attend. Information from past year’s sessions will be available.

ASABE GENERAL SESSION / RECOGNITIONS
KEYNOTE SPEAKER
Monday, July 22 – 8:00AM-9:30AM
Location: Century Ballroom - Westin

ASABE President Tony Kajewski welcomes each of you to the ASABE Annual International Meeting. Our keynote speaker is Helmi Ansari who is the director of Sustainability and Org. Capability at PepsiCo Foods Canada. The title of his presentation is “Sustainability… & our efforts at PepsiCo Foods Canada”.

AGCO NATIONAL STUDENT DESIGN COMPETITION
Monday, July 22 – 9:30AM-10:30AM
Location: Senators – Westin

The top three entries for the student design competition have been invited to this oral competition. Listen to these outstanding engineering design project presentations. Winners will be recognized at the Awards Recognition Luncheon on Wednesday.

Event #7

AEM STUDENT AWARDS LUNCHEON
Monday, July 22 – 11:30AM-1:30PM
Location: Century Ballroom - Westin

The Association of Equipment Manufacturers (AEM) is once again pleased to invite all of the ASABE student members to attend the 76th Annual AEM Student Awards Luncheon. This event is a wonderful time to learn more about the professional side of the world as you dine. There will be a presentation on ROPS. Reservations must be made by Sunday, July 21. Luncheon reservations will be confirmed in your ASABE registration packet. Student Branch Advisors and AEM company members are encouraged to attend.
COST: No cost for students
$20.00 for all other registrants

GUNLOGSON ENVIRONMENTAL DESIGN COMPETITION
Monday, July 22 – 1:30PM-2:30PM
Location: Senators - Westin

The top three entries for the environmental design competition have been invited to this oral competition.

FOUNTAIN WARS COMPETITION
Monday, July 22 – 2:00PM-8:30PM
Location: Pool - Westin

Fountain Wars is a competition aimed at students in their sophomore and junior years of study. It provides students with hands on experience in engineering design and most importantly the students have a great time. Teams are given two and a half hours to build a fountain that completes two technical tasks and provides an aesthetic display.

K.K. BARNES STUDENT PAPER COMPETITION
Monday, July 22 – 2:30PM-3:30PM
Location: Senators - Westin

Invitations will be extended to the top three entries in the student paper competition. You can hear the authors of outstanding papers make their presentations. Come support the students from your school who may be participating. Winners will be recognized at the Awards Recognition Luncheon on Wednesday.
BOYD-SCOTT GRADUATE RESEARCH AWARD
Monday, July 22 – 7:00PM-9:00PM
Location: Senators - Westin
The Graduate Student Research Award (GSRA) Competition sets out to recognize excellence in the conduct and presentation of agricultural and biological engineering research carried out by graduate student members. The competition is held in two parts: a written competition and an oral presentation competition for the top three finalists in the M.S. and Ph.D. categories, which is held at the ASABE Annual International Meeting.

Tour #3
IPC SOCIAL – FINNIGAN’S
Monday, July 22 – 6:00PM-10:00PM
Location: Finnegan’s
Gather with your fellow attendees and friends for an exciting evening at one of the most versatile and fun entertainment centers in Kansas City. Finnigan’s teams up with the adjacent AMF facility to offer this Summer Evening Picnic! Enjoy a picnic buffet of burgers & chicken breasts with all the fixings, and salads. Also included are activities available to you throughout the night. You can bowl, play a 19-hole miniature golf course, and ride a Go-Kart! You are welcome to do all three activities during the event.

This event is open to anyone interested in this opportunity to connect with other attendees and we welcome you. To keep the price down, we are suggesting you group together and take taxis to Finnigan’s and back.

COST: Includes full buffet, activities, and all taxes and gratuities:
20.00 per person

TUESDAY, JULY 23
BUSINESS AND MANAGEMENT 101
Tuesday, July 23 – 7:30AM-9:00AM
Location: Northrup - Sheraton
This session is a series of invited speakers focused on developing members’ business and management skills. Outstanding industry, academic and government employed ASABE members will share their experiences and knowledge to help develop the next generation of worldwide leaders in agricultural and biological engineering.

ASABE ROBOTICS STUDENT DESIGN COMPETITION
Tuesday, July 23 – 8:00AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton
The American Society of Agricultural & Biological Engineers Robotics Competition is a student design competition that was conceived in 2006. The aim of the competition is to encourage undergraduate as well as graduate students to develop innovative robotic solutions to real life problems in the agricultural arena. The competition travels with the Annual International Meeting, and hence, the solutions must allow transportation in airplanes. The challenge will be communicated through the website and digital flyers describing the rules, requirements, limitations, deadlines and demonstration procedures.

The competition is open to students in one or more departments from a single university. There is no maximum number of team members per team, so multiple teams from a single university are allowed.

Demonstrations
8:00AM-10:00AM
Competition
10:00AM-12:00PM

Tour #5
HARLEY DAVIDSON TOUR
Tuesday, July 23 – 9:00AM-12:00PM
Location: Bus departs from the Sheraton
Tour the Harley-Davidson Plant near Kansas City to observe how sportsters, dynaglides and v-rods are assembled. The Harley-Davidson Vehicle & Powertrain Operations plant has the distinction of being the only Harley-Davidson facility to produce an entire motorcycle on site – the groundbreaking VRSCA V-Rod®. The tour center features a series of displays that guide you through the various manufacturing and assembly processes and illustrate the individual and collaborative skills necessary to produce each motorcycle. You may also have the chance to sit on current production motorcycles. Wear closed toe shoes. Government issued ID (driver’s license or passport) is required.

COST: $38.00 per person to cover transportation

CAREER FAIR
Tuesday, July 23 – 9:30AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton
The Career Fair is just one of the many highlights of the ASABE Annual International Meeting. It is an outstanding networking opportunity that allows interested individuals to connect with Fortune 500 companies, agricultural and bio-based businesses, bio-research companies and major land grant universities looking for qualified candidates.

Employers register their job positions at the registration desk and receive an interview table number. These openings are posted with the table numbers located near the ASABE registration desk for review. Prospective employees are invited to seek out employers of interest and exchange information.
1/4 SCALE TRACTOR DESIGN COMPETITION
Tuesday, July 23 – 12:15PM-2:15PM
Location: Chouteau B - Sheraton
Top finishing teams in the Team Presentation category from this year’s competition will give their winning presentations during this session. This is an excellent opportunity for students to see what a top presentation looks like and use that knowledge to improve their own presentation in future years. There will be ample time for Q & A, so come ready to learn.

ASABE BUSINESS MEETING
Tuesday, July 23 – 12:30PM-1:30PM
Location: Century Ballroom - Westin
President Tony Kajewski and President-Elect Lalit Verma will preside over the society’s update and business meeting

Event #15
ASABE FOUNDATION DINNER AT THE AMERICAN JAZZ MUSEUM
Tuesday, July 23 – 7:15PM-10:00PM
Location: Offsite. Buses will depart from the Westin
Located in the historic 18th & Vine Jazz District of Kansas City, this distinctive museum showcases the sights and sounds of American jazz. The development and heyday of this exceptional American art form becomes genuine through four Masters. See Charlie Parker’s saxophone, one of Louis Armstrong’s trumpets, the sequined gown worn by Ella Fitzgerald, and memorabilia from Duke Ellington. While we will enjoy a typical Kansas City barbecue buffet in the beautiful atrium area, the museum will be open for us to view and experience the multiple exhibits on display. Docents will help us fully appreciate the compelling collections of rare photos, sheet music, posters, costumes, artifacts, album covers and listening kiosks. Interactive exhibits will bring American jazz to life. The American Jazz Museum is significant in the community, hosting thousands of world-class live jazz performances and countless educational programs as it promotes the historic and cultural relevance of jazz music and arts. This is a uniquely typical Kansas City Experience!
Dinner and transportation to and from the Jazz Museum—and the company of some great folks—are all included
COST: $100.00/person

WEDNESDAY, JULY 24
THE HALLMARK VISITOR’S CENTER
Wednesday, July 24 – 9:30AM-??
This is a casual tour for anyone who wishes to make a group visit to the Hallmark Center and take advantage of having a guided tour. The center is near our hotel and we plan to meet around 9:30 AM to be there when it opens at 10:00 AM. T. Joyce C. Hall arrived in Kansas City in 1910 with two shoeboxes full of postcards and a dream. Today, the company he founded produces more than 2 billion greeting cards each year in more than 30 languages for more than 100 countries. The Hallmark Visitors Center at Crown Center tells the story behind the world’s largest greeting card company with 14 remarkable exhibits. See historical artifacts that reflect various eras and trends throughout 20th century America into the new millennium.
COST: Free admission, however if you do not want to walk you can take a short taxi ride for about $10

Event #16
ASABE AWARDS LUNCHEON
Wednesday, July 24 – 12:30PM-2:30PM
Location: Century Ballroom - Westin
Plan to attend the most important recognition event of the year. The installation of ASABE’s 2013 President, Lalit Verma, will immediately follow the awards presentation.
COST: Included with full meeting registration
$40.00 additional tickets

Event #17
GALE A. HOLLOWAY MEMORIAL GOLF OUTING
Wednesday, July 24 – 3:00PM-??
Location: Offsite – Meet at ASABE Registration Desk
The Gale A. Holloway Memorial Golf Outing will be on Wednesday, July 24 at 3:00PM. Prepare yourself for an unparalleled golfing experience! Hillcrest Golf and Country Club provides fun, but challenging play to golfers of all skill levels. With rolling fairways, strategic water hazards and white-sand bunkers, we have everything you need to test your game. Be sure to add this fun event to your AIM registration form.
COST: $100.00 per person

Tour #6
INDEPENDENCE – A VISIT WITH THE PRESIDENT
Wednesday, July 24 – 2:30PM-6:00PM
Location: Offsite – Tour departs from the Sheraton
See Tours listing for complete description of the tours.
COST: $45.00 per person includes transportation, guide, and admission with guided tour of the museum

Tour #7
GRAIN INSPECTION AND INDUSTRY TOUR
Wednesday, July 24 – 2:30PM-6:00PM
Location: Offsite – Tour departs from the Sheraton
See Tours listing for complete description of the tours.
COST: $38.00 per person includes all transportation
Closed toe shoes are required.
SATURDAY, JULY 20

Tour #1
KANSAS CITY ROYALS BASEBALL GAME - YPC SOCIAL EVENT
Saturday, July 20 – 6:00PM-11:00PM
Location: Ball Park
Come on out and enjoy the All-American pastime...baseball! Relax in outfield box seats on the right field line while watching the KC Royals play the Detroit Tigers, and socialize with the Young Professionals of the Society. This event ticket includes transportation from the hotel and back, Outfield box seating at the Kansas City Royals vs. Detroit Tigers game, and Loaded Value on your ticket to use as you wish for stadium food or merchandise. All meeting participants and guests are invited to this YPC planned event.
Cost: $59.00 includes entry to the game, $20 food coupon and bus transportation

SUNDAY, JULY 21

Event #1
YPC FUN RUN/WALK
Sunday, July 21 – 7:30AM-9:00AM
Location: ASABE Registration Desk - Sheraton
The Young Professional Community is sponsoring its eighth annual YPC Fun Run/Walk. Come join us for a 5k run or a 1 mile walk in a park across from the Westin Kansas City at Crown Center in downtown Kansas City! All proceeds will go towards supporting future YPC events focused on young member retention during the transition from student to professional. Please come out and show your support for the young members of ASABE while staying active. Don’t forget to register early because space is limited. All participants will receive a gift. We will meet at 7:30 AM at the registration desk. We will then walk to the start of the race and begin the event at 8:00 AM. A map of the running route can be found in the program. Prizes will be awarded to winners.
COST: $20.00

Event #2
AE PROFESSIONAL ENGINEERING EXAM QUESTION WRITING SESSION
Sunday, July 21 – 8:00AM-4:00PM
Location: Van Horn C - Sheraton
Licensed Professional Engineers are welcome to participate in a day-long effort to write and evaluate agricultural engineering Professional Examination test questions. Persons attending must be a licensed professional engineer and provide their PE number to participate. Preregistration is required.

ASABE FOUNDATION SILENT AUCTION
Sunday, July 21 – 8:00AM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

YPC ALL IN GOOD FUN CONTEST
Sunday, July 21 – All day
Location: Sheraton Grand Ballroom - Sheraton
This is a great way to support the Young Professionals Community while laughing with your fellow engineers! Stop by the YPC booth to say hello and donate to your favorite contestant!

Tour #2
KANSAS CITY HIGHLIGHTS TOUR
Sunday, July 21 – 1:00PM-4:00PM
Location: Bus depart from the Sheraton
See Activities listing for complete description of the tours.
COST $35.00 includes deluxe coach bus and guide

CE #7
YPC PREPROFESSIONAL DEVELOPMENT SESSION
Sunday, July 21 – 1:00PM-5:00PM
Location: Van Horn B - Sheraton
Dr. Peter Gorder, University of Colorado
Enhance your skills in understanding and solving problems through a CPD session that explores the technique and advantages of Quality Function Deployment.
COST $30.00

ALPHA EPSILON ANNUAL MEETING
Sunday, July 21 – 4:00PM-5:00PM
Location: Pershing East - Westin
Annual meeting for the honor society recognizing outstanding Agricultural and Biological Engineering students. Join us as we discuss the society’s latest activities and announce the recipients of this year’s chapter awards. Meeting attendees will be entered into a drawing for door prizes.

ASABE WELCOME RECEPTION
Sunday, July 21 – 4:30PM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
All meeting registrants are invited to attend our welcome reception. This is a good time to network with other attendees and to make further plans for dinner after the reception. The Kansas City Convention and Visitors Bureau will have a representative available to assist you in making your dining reservations.
Event #3
WOMEN IN ASABE SOCIAL
Sunday, July 21 – 6:30PM-7:30PM
Location: Chouteau 1 & 2 - Sheraton
The Women in ASABE social is an informal mixer open to all female ASABE members. Hosted by Past-President Sonia Maassel Jacobsen, this event will provide a unique opportunity to meet, socialize and network with other women from across ASABE. Refreshments will be served. Registration is required but there is no charge for this event.
COST: Preregistration is required.

Event #4
OKLAHOMA STATE UNIVERSITY BAE ALUMNI AND FRIENDS
Sunday, July 21 – 6:00PM-9:00PM
Location: Florella’s Jack Stack Freight House Restaurant, 101 W 22nd St., Kansas City, MO
Alumni and friends of the Biosystems and Agricultural Engineering Department at Oklahoma State University are invited to gather for an informal barbecue dinner scheduled at Florella’s Jack Stack’s Freight House Restaurant, 101 W 22nd Street, within walking distance of the Crowne Center. Space is limited so reservations and prepayments are required. No online reservations accepted after July 15. Contact Nancy Rogers at nancy.rogers@okstate.edu or 405.744.8430 or see http://biosystems.okstate.edu for additional information.
COST: $25.00

MONDAY, JULY 22
Event #5
PRAYER BREAKFAST
Monday, July 22 – 6:30AM-8:00AM
Location: Signboard 1 - Westin
The Fellowship of Christian Agricultural Engineers invites all meeting registrants, spouses and guests to the interdenominational prayer breakfast. The continental breakfast will begin promptly at 6:30AM and end at 8:00AM. Pre-registration and ticket is required.
COST: $30.00

WHAT YOU DIDN’T KNOW ABOUT ASABE AND PROFESSIONAL LICENSURE
Monday, July 22 – 7:00AM-8:00AM
Location: Fremont - Sheraton
How do I get the most out of my time at the meeting, my membership in ASABE and my career as an engineer? The YPC and Professional Engineering Institute (PEI) will answer these questions and more. Come to learn more about the benefits of professional licensure within our society as well as learn about different topics about how the society functions internally. Topics to be addressed include Professional Licensure, YPC’s history since its inception 10 years ago, Communities of ASABE, as well as a preview of events to come so you can make the most of the meeting. Refreshments will be provided. All members, especially first-time meeting attendees and preprofessionals are encouraged to attend. Information from past year’s sessions will be available. Tom Dodd from NCEES will speak about the licensure process.

ASABE GENERAL SESSION / RECOGNITIONS KEYNOTE SPEAKER
Monday, July 22 – 8:00AM-9:30AM
Location: Century Ballroom - Westin
ASABE President Tony Kajewski welcomes each of you to the ASABE Annual International Meeting. Our keynote speaker is Helmi Ansari who is the director of Sustainability and Org. Capability at PepsiCo Foods Canada. The title of his presentation is “Sustainability… & our efforts at PepsiCo Foods Canada”.

ASABE FOUNDATION SILENT AUCTION
Monday, July 22 – 9:30AM-5:00PM
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

YPC ALL IN GOOD FUN CONTEST
Monday, July 22 – All day
Location: Sheraton Grand Ballroom - Sheraton
This is a great way to support the Young Professionals Community while laughing with your fellow engineers! Stop by the YPC booth to say hello and donate to your favorite contestant!

Tour #3
IPC SOCIAL – FINNIGAN’S
Monday, July 22 – 6:00PM-10:00PM
Location: Finnegan’s
See Tours section for complete description of the tours.
COST: Includes full buffet, activities, and all taxes and gratuities: $20.00 per person
TUESDAY, JULY 23
BUSINESS AND MANAGEMENT 101
Tuesday, July 23 – 7:30AM-9:00AM
Location: Northrop - Sheraton
This session is a series of invited speakers focused on developing members’ business and management skills. Outstanding industry, academic and government employed ASABE members will share their experiences and knowledge to help develop the next generation of worldwide leaders in agricultural and biological engineering.

ASABE FOUNDATION SILENT AUCTION
Tuesday, July 23 – 8:00AM-5:00PM
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

YPC ALL IN GOOD FUN CONTEST
Tuesday, July 23 – All day
Location: Sheraton Grand Ballroom - Sheraton
This is a great way to support the Young Professionals Community while laughing with your fellow engineers! Stop by the YPC booth to say hello and donate to your favorite contestant!

Tour #5
HARLEY DAVIDSON TOUR
Tuesday, July 23 – 9:00AM-12:00PM
Location: Offsite – Bus transportation provided
See Tours section for complete description of the tours.
COST: $38.00 per person to cover transportation

CAREER FAIR
Tuesday, July 23 – 9:30AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton
The Career Fair is just one of the many highlights of the ASABE Annual International Meeting. It is an outstanding networking opportunity that allows interested individuals to connect with Fortune 500 companies, agricultural and bio-based businesses, bio-research companies and major land grant universities looking for qualified candidates.

The ASABE Career Fair provides an opportunity for employee and potential employees to come together informally and share information. Academia will also be represented with opportunities at the masters and doctoral level.

Employers register their job positions at the registration desk and receive an interview table number. These openings are posted with the table numbers located near the ASABE registration desk for review. Prospective employees are invited to seek out employers of interest and exchange information.

ASABE BUSINESS MEETING
Tuesday, July 23 – 12:30PM-1:15PM
Location: Century Ballroom - Westin
President Tony Kajewski and President-Elect Lalit Verma will preside over the society’s update and business meeting

ORDER OF THE ENGINEER INDUCTION CEREMONY
Tuesday, July 23 – 3:00PM-5:00PM
Location: Century Ballroom - Westin
Engineering graduates and registered engineers are invited to accept the Obligation of the Engineer and a stainless steel ring, which is worn on the little finger of the engineer’s working hand. All graduates of ABET accredited engineering programs; seniors in ABET accredited programs within two academic years of graduation; licensed PEs; and members of the Canadian Calling by reciprocity are invited to join the Order. All inductees must be present to accept their certificate and ring at the induction ceremony. The cost of entering the Order is $10.00 and inductees may register with Tina Schultz at schultz@asabe.org before the meeting or in person at the membership booth at the meeting. Learn more about the Order here - http://www.order-of-the-engineer.org/.

YOUNG PROFESSIONAL’S COMMUNITY BUSINESS MEETING
Tuesday, July 23 – 5:15PM-7:00PM
Location: VanHorn - Sheraton
The Young Professional Community annual business meeting is open to all YPC members. If you have a bachelor’s degree and are under the age of 35, you’re a member! Please come to discuss YPC activities, strategic goals, and meet your fellow YP’ers.

ASABE FELLOWS INDUCTION CEREMONY/RECEPTION
Tuesday, July 23 – 6:00PM-7:30PM
Location: Century Ballroom – Westin
All registrants are invited to this special recognition ceremony and reception honoring the 2013 ASABE Fellows. ASABE defines a Fellow as a member of unusual professional distinction, with outstanding and extraordinary qualifications and experience in, or related to, the field of agricultural, food, or biological systems engineering. They possess a minimum of 20 years of active practice in, or related to, the profession of engineering; the teaching of engineering; or the teaching of an engineering-related curriculum and a minimum of 20 years as an active Member-Engineer or Member in ASABE.
Event #15

ASABE FOUNDATION DINNER AT THE AMERICAN JAZZ MUSEUM
Tuesday, July 23 – 7:15PM-10:00PM
Location: Offsite. Bus transportation is provided. 
Buses will depart from the Westin
Located in the historic 18th & Vine Jazz District of Kansas City, this distinctive museum showcases the sights and sounds of American jazz. The development and heyday of this exceptional American art form becomes genuine through four Masters. See Charlie Parker’s saxophone, one of Louis Armstrong’s trumpets, the sequined gown worn by Ella Fitzgerald, and memorabilia from Duke Ellington. While we will enjoy a typical Kansas City barbecue buffet in the beautiful atrium area, the museum will be open for us to view and experience the multiple exhibits on display. Docents will help us fully appreciate the compelling collections of rare photos, sheet music, posters, costumes, artifacts, album covers and listening kiosks. Interactive exhibits will bring American jazz to life. The American Jazz Museum is significant in the community, hosting thousands of world-class live jazz performances and countless educational programs as it promotes the historic and cultural relevance of jazz music and arts. This is a uniquely typical Kansas City Experience!
Dinner and transportation to and from the Jazz Museum—and the company of some great folks—are all included
COST: $100.00/person

WEDNESDAY, JULY 24

ASABE FOUNDATION SILENT AUCTION
Wednesday, July 24 – 8:00AM-3:00PM
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

THE HALLMARK VISITOR’S CENTER
Wednesday, July 24 – 9:30AM-??
This is a casual tour for anyone who wishes to make a group visit to the Hallmark Center and take advantage of having a guided tour. The center is near our hotel and we plan to meet around 9:30 AM to be there when it opens at 10:00 AM. T. Joyce C. Hall arrived in Kansas City in 1910 with two shoeboxes full of postcards and a dream. Today, the company he founded produces more than 2 billion greeting cards each year in more than 30 languages for more than 100 countries. The Hallmark Visitors Center at Crown Center tells the story behind the world’s largest greeting card company with 14 remarkable exhibits. See historical artifacts that reflect various eras and trends throughout 20th century America into the new millennium.
COST: Free admission, however if you do not want to walk you can take a short taxi ride for about $10

Event #16

ASABE AWARDS LUNCHEON
Wednesday, July 24 – 12:30PM-2:30PM
Location: Century Ballroom - Westin
Plan to attend the most important recognition event of the year. The installation of ASABE’s 2013 President Lalit Verma will immediately follow the awards presentation.
COST: Included with full meeting registration 
$40.00 additional tickets

Event #17

GALE A. HOLLOWAY MEMORIAL GOLF OUTING
Wednesday, July 24 – 3:00PM-??
Location: Offsite – Meet at ASABE Registration Desk
The Gale A. Holloway Memorial Golf Outing will be on Wednesday, July 24 at 3:00PM. Prepare yourself for an unparalleled golfing experience! Hillcrest Golf and Country Club provides fun, but challenging play to golfers of all skill levels. With rolling fairways, strategic water hazards and white-sand bunkers, we have everything you need to test your game. Be sure to add this fun event to your AIM registration form.
COST: $100.00 per person

Tour #6

INDEPENDENCE – A VISIT WITH THE PRESIDENT
Wednesday, July 24 – 2:30PM-6:00PM
Location: Offsite – Tour departs from the Sheraton
See Tours section for complete description of the tours.
COST: $45.00 per person includes transportation, guide, and admission with guided tour of the museum

Tour #7

GRAIN INSPECTION AND INDUSTRY TOUR
Wednesday, July 24 – 2:30PM-6:00PM
Location: Offsite – Tour departs from the Sheraton
See Tours section for complete description of the tours.
COST: $38.00 per person includes all transportation
Note: Closed toe shoes are required.
SATURDAY, JULY 20

Tour #1
KANSAS CITY ROYALS BASEBALL GAME - YPC SOCIAL EVENT
Saturday, July 20 – 6:00PM-11:00PM
Location: Ball Park
Come on out and enjoy the All-American pastime…baseball! Relax in outfield box seats on the right field line while watching the KC Royals play the Detroit Tigers, and socialize with the Young Professionals of the Society. This event ticket includes transportation from the hotel and back, Outfield Box seating at the Kansas City Royals vs. Detroit Tigers game, and Loaded Value on your ticket to use as you wish for stadium food or merchandise. All meeting participants and guests are invited to this YPC planned event.
Cost: $59.00 includes entry to the game, $20 food coupon and bus transportation

SUNDAY, JULY 21

ASABE FOUNDATION SILENT AUCTION
Sunday, July 21 – 8:00AM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

Plan to arrive 15 minutes before departure for boarding of all tours.
Tours will depart from the bus staging area of the Sheraton

TOUR #2
KANSAS CITY HIGHLIGHTS TOUR
Sunday, July 21 – 1:00PM-4:00PM
Location: Bus departs from the Sheraton
Everything is up-to-date in Kansas City! The city is a lively mix of beautiful old architecture and newly completed state-of-the-art projects in the downtown area. Enjoy the sights, learn a little history and marvel at the hidden treasures on this downtown driving tour. See the Federal Courthouse, the Power and Light Entertainment District, the Culture Center for Performing Arts and the Sprint Arena. Stop at Lewis and Clark Point for the opportunity to visit the monument celebrating the 150th anniversary of the explorers in Kansas City where they viewed the convergence of the Kaw and Missouri Rivers. See the Crown Center (home of Hallmark Cards), the office and entertainment center adjacent to Union Station – a magnificent Beaux Arts building recently restored to house shops, restaurants and Science City – and drive through Country Club Plaza with its unique Spanish architecture and 14 blocks of shopping! The fountains and gardens throughout the city will be spectacular at this time of year, as is the drive along Ward Parkway, the city’s most beautiful boulevard, where you can view the stately homes and estates of the city’s most prominent citizens. This tour will give you an invaluable overview of the city and introduce you to places you may want to go back and visit in more depth during your stay.
Cost: $35 includes deluxe coach bus and guide

ASABE WELCOME RECEPTION
Sunday, July 21 – 4:30PM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
All meeting registrants are invited to attend our welcome reception. This is a good time to network with other attendees and to make further plans for dinner after the reception. The Kansas City Convention and Visitors Bureau will have a representative available to assist you in making your dining reservations.

SILENT AUCTION
Sheraton Ballroom
Sunday, July 21 thru Wednesday, July 24
Bidding closes at 3:00PM Wednesday

Spouse Guest Lounge
Peppercorn Duck Club – Sheraton
Hours:
Monday – 8:00AM-5:00PM
Tuesday – 8:00AM-5:00PM
Wednesday – 8:00AM-3:00PM
ALUMNI RECEPTION OF COLLEGE OF BIOSYSTEMS ENGINEERING AND FOOD SCIENCE, ZHEJIANG UNIVERSITY
Sunday, July 21 – 6:30PM-10:30PM
Location: Pershing East - Westin
Alumni and visiting professors of College of Biosystems Engineering and Food Science, Zhejiang University are invited to enjoy a reception at the convention center and catch up with the old friends. Please send email to shaojin_wang@wsu.edu by July 19 if you plan to attend.

Event #4
OKLAHOMA STATE UNIVERSITY BAE ALUMNI AND FRIENDS
Sunday, July 21 – 6:00PM-9:00PM
Location: Florella’s Jack Stack Freight House Restaurant, 101 W 22nd St., Kansas City, MO
Alumni and friends of the Biosystems and Agricultural Engineering Department at Oklahoma State University are invited to gather for an informal barbeque dinner scheduled at Florella’s Jack Stack’s Freight House Restaurant, 101 W 22nd Street, within walking distance of the Crowne Center. Space is limited so reservations and prepayments are required. No online reservations accepted after July 15. Contact Nancy Rogers at nancy.rogers@okstate.edu or 405.744.8430 or see http://biosystems.okstate.edu for additional information.
COST: $25.00

Monday, July 22
Event #5
PRAYER BREAKFAST
Monday, July 22 – 6:30AM-8:00AM
Location: Signboard 1 - Westin
The Fellowship of Christian Agricultural Engineers invites all meeting registrants, spouses and guests to the interdenominational prayer breakfast. The continental breakfast will begin promptly at 6:30AM and end at 8:00AM. Pre-registration and ticket is required.
COST: $30.00

ASABE GENERAL SESSION / RECOGNITIONS
KEYNOTE SPEAKER
Monday, July 22 – 8:00AM-9:30AM
Location: Century Ballroom - Westin
ASABE President Tony Kajewski welcomes each of you to the ASABE Annual International Meeting. Our keynote speaker is Helmi Ansari who is the director of Sustainability and Org. Capability at PepsiCo Foods Canada. The title of his presentation is “Sustainability… & our efforts at PepsiCo Foods Canada”.

Event #6
SPOUSE / GUEST LUNCH
Monday, July 22 – 11:00 AM-2:30 PM
Location: Bus transportation will be provided to the Webster House
A short ride via deluxe motor coach will bring you to the beautifully restored Webster House for a social gathering of old friends and new acquaintances. This 100+ year old building once served as a schoolhouse and is now a masterpiece of total renovation. You will have the opportunity to browse the first floor that is filled with boutiques and gift shops that feature a multitude of linens, tabletopware, ladies boutiques with accessories and jewelry, and children’s clothing, books and gifts. Two magnificent wide staircases (or the elevator) will bring you to the 2nd floor and charming restaurant where a light lunch will be served.
This event is open to anyone interested in this opportunity to connect with other guests of attendees and we welcome you.
COST: Included with the Spouse/Guest Registration Fee.
Additional guests may attend at an inclusive cost of $60.00.

FOUNTAIN WARS COMPETITION
Monday, July 22 – 2:00PM-8:30PM
Location: Pool - Westin
Fountain Wars is a competition aimed at students in their sophomore and junior years of study. It provides students with hands on experience in engineering design and most importantly the students have a great time. Teams are given two and a half hours to build a fountain that completes two technical tasks and provides an aesthetic display.
Team Check in 2:00PM-2:30PM
Construction of Fountains 2:30PM-4:30PM
Final Construction and Safety Inspection 4:30PM-5:00PM
Team Test / Adjustment In Fountain 5:00PM-5:30PM
Competition 5:30PM-7:30PM

Event #8
ASSOCIATION OF AGRICULTURAL, FOOD AND BIOLOGICAL ENGINEERS OF INDIAN ORIGIN (AABFEIO) MEETING
Monday, July 22 – 5:30PM-9:30PM
Location: Chicago A - Sheraton
The 2013 Annual Business meeting for the Association of Agricultural, Biological and Food Engineers of Indian Origin (AABFEIO) will be held from 5:30PM to 6:30PM on Monday, July 22 at the ASABE conference venue. Following the meeting, the association will have its annual dinner at a local restaurant from 7:00PM to 9:30PM.
COST: $25.00 Member / $15.00 Students
Event #9
ASSOCIATION OF KOREAN AGRICULTURAL, BIOLOGICAL AND FOOD ENGINEERS (AKABFE) MEETING
Monday, July 22 – 6:30PM-8:00PM
Location: Chicago B - Sheraton
Association of Korea Agricultural, Biological and Food Engineers (AKABFE) will have an annual meeting. A business meeting will take place and the Association dinner will follow at a nearby restaurant.
COST: $30.00

Event #10
ASSOCIATION OF OVERSEAS CHINESE AGRICULTURAL, BIOLOGICAL, AND FOOD ENGINEERS (AOCABFE) ANNUAL BUSINESS MEETING
Monday, July 22 – 5:15PM-6:30PM
Location: Chicago C
The AOCABFE annual meeting provides a platform for promoting and facilitating research and educational exchanges among researchers with Chinese origin or associations in the areas of agricultural, biological and food engineering. The ASABE meeting attendees with international collaboration interests are invited to attend the meeting as well. The AOCABFE activities in 2012-2013 will be reviewed and plans of action for 2013-2014 will be discussed. The AOCABFE Award Banquet will follow the business meeting from 6:30PM to 10:30PM at the New Peking Chinese Restaurant, 540 Westport Road, Kansas City, Missouri. Recognition and awards will be presented at the banquet.
COST: $65.00 Member; $20.00 Student Member.

Tour #3
IPC SOCIAL – FINNIGAN’S
Monday, July 22 – 6:00PM-10:00PM
Location: Finnegans
See Tours section for complete description of the tours.
COST: Includes full buffet, activities, and all taxes and gratuities:
$20.00 per person

IOWA STATE UNIVERSITY ABE RECEPTION
Monday, July 22 – 7:00pm-9:00PM
Location: Governors-Westin
Meet your old friends and make new friends and find out what is happening in the Department of Agricultural and Biosystems Engineering at Iowa State University.

KANSAS STATE UNIVERSITY ALUMNI RECEPTION
Monday, July 22 – 7:00PM-9:00PM
Location: Signboard 1 - Westin
Alumni and friends are invited to renew friendships, revisit design legacies, and learn about some unique opportunities within the Biological and Agricultural Engineering Department. Faculty and students will be available to provide departmental updates and share happenings at Kansas State University and in Manhattan (Aggieville).

TEXAS A&M UNIVERSITY RECEPTION
Monday, July 22 – 7:00PM-9:00PM
Location: Milano Italian Dining, 2450 Grand, Crown Center Lower Level
The Biological and Agricultural Engineering Department invites you to join us in a reception for all Aggies and their supporters. We will meet at 7:00PM at Milano Italian Dining, 2450 Grand, Crown Center Lower Level (816-398-4825) for complimentary appetizers and a cash bar. For those who wish, we will dine together off the menu at 8:00PM. Gather with us to enjoy an update on the department.

VIRGINIA TECH ALUMNI & FRIENDS SOCIAL
Monday, July 22 – 8:00PM-10:00PM
Location: Signboard 2 - Westin
The Biological Engineering Department at Virginia Tech cordially invites alumni and friends to this gathering on Monday evening. Come enjoy some refreshments and catch up on the latest happenings in the department and at Virginia Tech!

UNIVERSITY OF ILLINOIS ALUMNI AND FRIENDS RECEPTION
Monday, July 22 – 8:30PM-10:30PM
Location: Bentons - Westin
Alumni and friends of the University of Illinois are invited to attend. We will feature a hosted bar and snacks. Please come and share this opportunity to visit and hear what is new with the Orange and blue I-L-L-I-N-I!

TUESDAY, JULY 23
PURDUE BREAKFAST
Tuesday, July 23 – 7:00AM-8:00AM
Location: Signboard 1 - Westin
Purdue University’s Dean of Agriculture, the Agricultural and Biological Engineering Department, and the Engineering Alumni Association invite all alumni and friends to their complimentary breakfast. Reservations are required!! Call 765-494-1162, fax 765-496-1115, or email peerb@purdue.edu
Event #12
INTERNATIONAL BREAKFAST
Tuesday, July 23 – 7:00AM-8:30AM
Location: Ambassadors - Westin
The International Breakfast is a great opportunity to interact with peers from many different countries. If you are coming from abroad or have an interest in international issues this is the place to meet new people and begin long and fruitful working relationships. The speaker for the International Breakfast will be the 2013 recipient of ASABE’s prestigious Kishida Award, Vilas M. Salokhe, Vice Chancellor of Kaziranga University in Jorhat, Assam, India.
COST: $30.00

Event #13
PENN STATE UNIVERSITY ALUMNI & FRIENDS BREAKFAST
Tuesday, July 23 – 7:00AM-8:30AM
Location: Bentons - Westin
This event is open to all alumni, students, current employees, and friends of The Pennsylvania State University, sponsored by the Penn State Department of Agricultural and Biological Engineering. Come join us for the opportunity to meet old friends, faculty, students, and to get updated on current happenings in the ABE Department. All guests are eligible to win door prizes.
COST: $12.00

Event #14
MICHIGAN STATE UNIVERSITY BREAKFAST
Tuesday, July 23 – 7:00AM-9:00AM
Location: Signboard 2 - Westin
Join the Michigan State University Alumni and friends for breakfast.
COST: $10.00

ASABE ROBOTICS STUDENT DESIGN COMPETITION
Tuesday, July 23 – 8:00AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton
The American Society of Agricultural & Biological Engineers (ASABE) Robotics Competition is a student design competition that was conceived in 2006. The aim of the competition is to encourage undergraduate as well as graduate students to develop innovative robotic solutions to real life problems in the agricultural arena. The competition travels with the Annual International Meeting, and hence, the solutions must allow transportation in airplanes. The challenge will be communicated through the website and digital flyers describing the rules, requirements, limitations, deadlines and demonstration procedures.

The competition is open to students in one or more departments from a single University. There is no maximum number of team members per team, so multiple teams from a single University are allowed.

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<th>Demonstrations</th>
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<td>Competition</td>
<td>10:00AM-12:00PM</td>
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Tour #5
HARLEY DAVIDSON TOUR
Tuesday, July 23 – 9:00AM-12:00PM
Location: Offsite – Bus transportation provided
Tour the Harley-Davidson Plant near Kansas City to observe how sportsters, dynaglides and v-rods are assembled. The Harley-Davidson Vehicle & Powertrain Operations plant has the distinction of being the only Harley-Davidson facility to produce an entire motorcycle on site – the groundbreaking VRSCA V-Rod®. The tour center features a series of displays that guide you through the various manufacturing and assembly processes and illustrate the individual and collaborative skills necessary to produce each motorcycle. You may also have the chance to sit on current production motorcycles. Wear closed toe shoes. Government issued ID (driver’s license or passport) is required.
Cost: $38 to cover transportation

ORDER OF THE ENGINEER INDUCTION CEREMONY
Tuesday, July 23 – 3:00PM-5:00PM
Location: Century Ballroom - Westin
Engineering graduates and registered engineers are invited to accept the Obligation of the Engineer and a stainless steel ring, which is worn on the little finger of the engineer’s working hand. All graduates of ABET accredited engineering programs; seniors in ABET accredited programs within two academic years of graduation; licensed PEs; and members of the Canadian Calling by reciprocity are invited to join the Order. All inductees must be present to accept their certificate and ring at the induction ceremony. The cost of entering the Order is $10.00 and inductees may register with Tina Schultz at schultz@asabe.org before the meeting or in person at the membership booth at the meeting. Learn more about the Order here - http://www.order-of-the-engineer.org/.

ASABE FELLOWS INDUCTION CEREMONY/RECEPTION
Tuesday, July 23 – 6:00PM-7:30PM
Location: Century Ballroom - Westin
All registrants are invited to this special recognition ceremony and reception honoring the 2013 ASABE Fellows. ASABE defines a Fellow as a member of unusual professional distinction, with outstanding and extraordinary qualifications and experience in, or related to, the field of agricultural, food, or biological systems engineering. They possess a minimum of 20 years of active practice in, or related to, the profession of engineering; the teaching of engineering; or the teaching of an engineering-related curriculum and a minimum of 20 years as an active Member-Engineer or Member in ASABE.
Event #15
ASABE FOUNDATION DINNER AT THE AMERICAN JAZZ MUSEUM
Tuesday, July 23 – 7:15PM-10:00PM
Location: Offsite. Bus transportation is provided. Buses will depart from the Westin.
Located in the historic 18th & Vine Jazz District of Kansas City, this distinctive museum showcases the sights and sounds of American jazz. The development and heyday of this exceptional American art form becomes genuine through four Masters. See Charlie Parker’s saxophone, one of Louis Armstrong’s trumpets, the sequined gown worn by Ella Fitzgerald, and memorabilia from Duke Ellington. While we will enjoy a typical Kansas City barbecue buffet in the beautiful atrium area, the museum will be open for us to view and experience the multiple exhibits on display. Docents will help us fully appreciate the compelling collections of rare photos, sheet music, posters, costumes, artifacts, album covers and listening kiosks. Interactive exhibits will bring American jazz to life. The American Jazz Museum is significant in the community, hosting thousands of world-class live jazz performances and countless educational programs as it promotes the historic and cultural relevance of jazz music and arts. This is a uniquely typical Kansas City Experience!
Dinner and transportation to and from the Jazz Museum—and the company of some great folks—are all included.
COST: $100.00/person

WEDNESDAY, JULY 24
THE HALLMARK VISITOR’S CENTER
Wednesday, July 24 – 9:30AM-??
This is a casual tour for anyone who wishes to make a group visit to the Hallmark Center and take advantage of having a guided tour. The center is near our hotel and we plan to meet around 9:30 AM to be there when it opens at 10:00 AM. T. Joyce C. Hall arrived in Kansas City in 1910 with two shoeboxes full of postcards and a dream. Today, the company he founded produces more than 2 billion greeting cards each year in more than 30 languages for more than 100 countries. The Hallmark Visitors Center at Crown Center tells the story behind the world’s largest greeting card company with 14 remarkable exhibits. See historical artifacts that reflect various eras and trends throughout 20th century America into the new millennium.
Cost: Free admission, however if you do not want to walk you can take a short taxi ride for about $10

Event #16
ASABE AWARDS LUNCHEON
Wednesday, July 24 – 12:30PM-2:30PM
Location: Century Ballroom - Westin
Plan to attend the most important recognition event of the year. The installation of ASABE’s 2013 President Lalit Verma will immediately follow the awards presentation.
Awards to be presented are:
COST: Included with full meeting registration $40.00 additional tickets

Event #17
GALÉ A. HOLLAYW MEMORIAL GOLF OUTING
Wednesday, July 24 – 3:00PM-??
Location: Offsite – Meet at ASABE Registration Desk
The Gale A. Holloway Memorial Golf Outing will be on Wednesday, July 24 at 3:00PM. Prepare yourself for an unparalleled golfing experience! Hillcrest Golf and Country Club provides fun, but challenging play to golfers of all skill levels. With rolling fairways, strategic water hazards and white-sand bunkers, we have everything you need to test your game. Be sure to add this fun event to your AIM registration form.
COST: $100.00 per person

Tour #6
INDEPENDENCE – A VISIT WITH THE PRESIDENT
Wednesday, July 24 – 2:30PM-6:00PM
Location: Offsite – Tour departs from the Sheraton
Before departing Kansas City, take this opportunity for the short drive to visit Independence, home of Harry Truman, the 33rd President of the United States. See the Old Square noted for the lovely 1880’s Court House, and the starting location of the western trails. One of the highlights of this tour is a stop at the Truman Library and Museum, one of only 13 Presidential Libraries in the United States. This museum has exhibits from the Truman Presidential era and a reproduction of the Oval Office as it was during Truman’s presidential term. Also learn the story of the Thomas Hart Benton mural, Independence and the Opening of the West.
Cost: $45 per person includes transportation, guide, and admission with guided tour of the museum

Event #18
SILENT AUCTION
Sunday, July 21 thru Wednesday, July 24
Bidding ends at 3:00PM Wednesday
Located in the Sheraton Ballroom
Technical Sessions

Monday, July 22 - 9:30AM-12:30PM
SESSION 101
ADVANCES IN COTTON ENGINEERING - Sponsored by PM-23/73
Moderator: John D. Wanjura, USDA ARS CPPRU, Lubbock, TX
LOCATION: NORTHRUP-SHERATON

Time   Paper #   Title/Authors
9:30AM  131593141  Discrete Element Simulation of Soil Compaction Nature and Time Paper # Title/Authors
9:35AM  131562451  cotton moisture content from changes in drying air temperature - second year
9:50AM  131562448  Carlos B. Armijo, USDA-ARS, Mesilla Park, NM (C.B. Armijo, R. Hardin, P. Funk, M. Gillum)
10:05AM  131620843  Pneumatic Conveying of Seed Cotton
Robert G. Hardin, USDA-ARS, Stoneville, MS (R.G. Hardin)
10:20AM  131609424  Multibar Sawless Lint Cleaner: Fiber Quality Analysis under a Vibratory Compactor in a Soil Bin
Robert G. Hardin, USDA-ARS, Stoneville, MS (R.G. Hardin)
10:35AM  131593357  A Multi-Stage Air-Type Lint Cleaner for Small Gins
John D. Wanjura, USDA ARS CPPRU, Lubbock, TX (J.D. Wanjura, C. Bednarz, G. Holt, M. Pelletier)
11:00AM  131691905  A Continuous-Flow, Pilot-Scale Cottonseed Dehulling Process to Yield Intact Seed Meats
Greg Holt, USDA-ARS, Lubbock, TX (G. Holt, J. Wanjura, M. Pelletier, J. Thomas, E. Barnes, G. Gamble, R. Baker)
11:30AM  131562451  Comparison of a Belt and Auger Conveyance System for a Cotton Stripper Header
Wesley M. Porter, Oklahoma State University, Stillwater, OK (W.M. Porter, J. Wanjura, R.K. Taylor)
11:45AM  131648250  Spindle Diameter Effects on Fiber Quality
Kevin D. Baker, New Mexico State Univ, Mesilla Park, NM (K.D. Baker)
12:00PM  131620602  Differences in fiber-seed attachment force, laboratory scale gin stand energy, and commercial type gin stand energy among cotton genotypes
James C. Boykin, USDA-Agricultural Research Service, Stoneville, MS (J.C. Boykin, E. Bechere)
12:15PM  131620506  Cotton maturity and lint processing damage, data from multiyear study
Richard K. Byler, USDA-ARS, Stoneville, MS (R.K. Byler, C. Delhom, G.F. Sassenrath, M. Krifa)

LOCATION: EMPIRE B-SHERATON

Time   Paper #   Title/Authors
10:05AM  131618800  Discrete Element Modeling of Soil-Implement Interaction Considering Soil Plasticity, Cohesion and Adhesion
John Fielke, University of South Australia, Mawson Lakes, SA, Australia (J. Fielke, M. Urgul, C. Saunders)
10:30AM  131620387  Why (Tractive) Footprint Length Matters
Frank Zoz, Retired John Deere, Moline, IL (F. Zoz, P. Ayers)
10:45AM  131620432  Modeling vehicle power requirements with tire compression and terrain interaction
Paul Ayers, University of Tennessee, Knoxville, TN (P. Ayers, D. Wade, J. Yantis, J. Freeman, A. Reid)
11:00AM  131593539  The Design and Dynamics simulation analysis of the casting - furrow opener in the Ditch
Leilei Zhang, China Agricultural University, Beijing, China (L. Zhang, F. Liang, D. Wang, G. Wang, Y. Yu)

FIELD MACHINERY - PART 1 - ADVANCES IN SOIL DYNAMICS - Sponsored by PM-45
Moderator: Santosh K. Pitla, Ohio State University, Columbus, OH

LOCATION: BENTON A-SHERATON

Time   Paper #   Title/Authors
2:00PM  131590237  Effect of Tractor Pass Frequency on Selected Soil Properties Under Conventional Tillage
Richard J. Godwin, Harper Adams University, Newport, United Kingdom (R. Godwin)
2:15PM  131619599  The prediction of the force and energy requirements to fill soil engaging buckets
Richard J. Godwin, Harper Adams University, Newport, United Kingdom (R.J. Godwin, P.A. Misiewicz, D. White, T. Underhill)
2:30PM  131698029  Contributions of Dr. Alan Reece to Advances in Soil Dynamics
Richard Godwin, Dick Godwin Associates ltd, Silsoe, United Kingdom (R. Godwin)
2:45PM  131590237  Load Characteristics of 30 and 75 kW Agricultural Tractors during Field Operations
Myong-Jin Ryu, Chungnam National University, Daejeon, Republic of Korea (M. Ryu, S. Kabir, S. Chung, Y. Kim, D. Lee, C. Choi)
3:00PM  131619599  The prediction of the force and energy requirements to fill soil engaging buckets
Richard J. Godwin, Harper Adams University, Newport, United Kingdom (R.J. Godwin, P.A. Misiewicz, D. White, T. Underhill)
3:15PM  1316562448  Estimating Cotton Stripper Harvest Power Requirements
Wesley M. Porter, Oklahoma State University, Stillwater, OK (W.M. Porter, J. Wanjura, R.K. Taylor)
3:30PM  131620602  Differences in fiber-seed attachment force, laboratory scale gin stand energy, and commercial type gin stand energy among cotton genotypes
James C. Boykin, USDA-Agricultural Research Service, Stoneville, MS (J.C. Boykin, E. Bechere)
3:45PM  131620506  Cotton maturity and lint processing damage, data from multiyear study
Richard K. Byler, USDA-ARS, Stoneville, MS (R.K. Byler, C. Delhom, G.F. Sassenrath, M. Krifa)

LOCATION: BENTON A-SHERATON

Time   Paper #   Title/Authors
4:00PM  131590237  Effect of Macro Shape Tillage Tool Geometry on Draught Force and Soil Translocation
Seth I. Manuwa, The Federal University of Technology, Akure, Akure, Nigeria (S.I. Manuwa)
4:15PM  131590237  Load Characteristics of 30 and 75 kW Agricultural Tractors during Field Operations
Myong-Jin Ryu, Chungnam National University, Daejeon, Republic of Korea (M. Ryu, S. Kabir, S. Chung, Y. Kim, D. Lee, C. Choi)
4:30PM  131590237  Effect of Macro Shape Tillage Tool Geometry on Draught Force and Soil Translocation
Seth I. Manuwa, The Federal University of Technology, Akure, Akure, Nigeria (S.I. Manuwa)
4:45PM  131590237  Load Characteristics of 30 and 75 kW Agricultural Tractors during Field Operations
Myong-Jin Ryu, Chungnam National University, Daejeon, Republic of Korea (M. Ryu, S. Kabir, S. Chung, Y. Kim, D. Lee, C. Choi)
5:00PM  131590237  Effect of Macro Shape Tillage Tool Geometry on Draught Force and Soil Translocation
Seth I. Manuwa, The Federal University of Technology, Akure, Akure, Nigeria (S.I. Manuwa)

SOIL DYNAMICS ACTIVITIES TO SUPPORT SOIL-MACHINE INTERACTIONS SIMULATION - Sponsored by PM-45
Moderator: Paul Ayers, University of Tennessee, Knoxville, TN
LOCATION: BENTON A-SHERATON

Time   Paper #   Title/Authors
9:00AM  131593141  Discrete Element Simulation of Soil Compaction Nature under a Vibratory Compactor in a Soil Bin
Mohammad A. Sadek, University of Manitoba, Winnipeg, MB, Canada (M.A. Sadek, Y. Chen)
9:15AM  131593141  The Device of Forage Carding Design and Experimental Research
Yong Yu, China Agricultural University, Beijing, China PRESENTER: Donghui Lu (Y. Yu, G. Wang, D. Wang, F. Liang, D. Lu)

LOCATION: EMPIRE B-SHERATON

Time   Paper #   Title/Authors
10:00AM  131593141  Discrete Element Simulation of Soil Compaction Nature under a Vibratory Compactor in a Soil Bin
Mohammad A. Sadek, University of Manitoba, Winnipeg, MB, Canada (M.A. Sadek, Y. Chen)
10:15AM  131593141  The Device of Forage Carding Design and Experimental Research
Yong Yu, China Agricultural University, Beijing, China PRESENTER: Donghui Lu (Y. Yu, G. Wang, D. Wang, F. Liang, D. Lu)

Monday, July 22 - 9:30AM-12:00PM
SESSION 103
AUTOMATION SYSTEMS FOR AGRICULTURAL FIELD MACHINERY - PART 1 - Sponsored by PM-58
Moderator: Matthew J. Darr, Iowa State University, Ames, IA
LOCATION: BENTON A-SHERATON

Time   Paper #   Title/Authors
9:00AM  131593141  Discrete Element Simulation of Soil Compaction Nature under a Vibratory Compactor in a Soil Bin
Mohammad A. Sadek, University of Manitoba, Winnipeg, MB, Canada (M.A. Sadek, Y. Chen)
9:15AM  131593141  The Device of Forage Carding Design and Experimental Research
Yong Yu, China Agricultural University, Beijing, China PRESENTER: Donghui Lu (Y. Yu, G. Wang, D. Wang, F. Liang, D. Lu)

LOCATION: EMPIRE B-SHERATON

Time   Paper #   Title/Authors
10:00AM  131593141  Discrete Element Simulation of Soil Compaction Nature under a Vibratory Compactor in a Soil Bin
Mohammad A. Sadek, University of Manitoba, Winnipeg, MB, Canada (M.A. Sadek, Y. Chen)
10:15AM  131593141  The Device of Forage Carding Design and Experimental Research
Yong Yu, China Agricultural University, Beijing, China PRESENTER: Donghui Lu (Y. Yu, G. Wang, D. Wang, F. Liang, D. Lu)
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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>9:50AM</td>
<td>131620209</td>
<td>Testing the efficiency of a series hybrid drivetrain for use in agricultural equipment</td>
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<td>Joseph Jackson, University of Kentucky, Lexington, KY (J. Jackson, J. Dvorak)</td>
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<tr>
<td>10:05AM</td>
<td>131586740</td>
<td>Design &amp; Simulation of Automatic Control and Operation of Agricultural Wide-Span Implement Carrier (WSCIC)</td>
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<td>Ahmad Mohsenimanesh, University of Ottawa, Ottawa, ON, Canada (A. Mohsenimanesh, C. Lague, C. Luo)</td>
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<tr>
<td>10:05AM</td>
<td>131588609</td>
<td>Automatic guidance and operation of agricultural Wide-Span Implement Carrier (WSCIC): kinematic modelling and simulation</td>
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<td>Chengming Luo, University of Ottawa, Ottawa, ON, Canada (C. Luo, A. Mohsenimanesh, C. Lague)</td>
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Monday, July 22 - 9:30AM-12:00PM

**SESSION 104** SPECIALTY CROP ENGINEERING - PART 1 -

**LOCATION**: VAN HORN A-SHERATON

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<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>9:30AM</td>
<td></td>
<td>Introduction</td>
</tr>
<tr>
<td>9:35AM</td>
<td>131591841</td>
<td>Parametric study of hand-held mechanical bloom thinner in cherry orchards</td>
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<td>Meng Wang, Washington State University, Prosser, WA (M. Wang, Q. Zhang, K. Lewis)</td>
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<tr>
<td>9:50AM</td>
<td>131593277</td>
<td>Distance-Based Machine Vision and Control System for Real-Time Automated Lettuce Thinning with an Intermittent Sprayer</td>
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<td>Mark Siemens, University of Arizona, Yuma, AZ (M. Siemens, R. Herbon, R. Gayler, R. Knolte, D. Brooks)</td>
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<tr>
<td>10:05AM</td>
<td>131592732</td>
<td>Field evaluation of dynamic characteristics of dwarf Chinese hickory trees for mechanical harvest</td>
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<td>Xiaoqiang Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, S. Chen, G. Qiu, C. Wu)</td>
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<td>10:20AM</td>
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<td>Break</td>
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<tr>
<td>10:30AM</td>
<td>131595170</td>
<td>Estimation of fruit locations inside orchard tree canopies using radio signal ranging and trilateration</td>
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<td>Stavros G. Vougioukas, University of California, Davis, CA (S.G. Vougioukas)</td>
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<tr>
<td>10:45AM</td>
<td>131596279</td>
<td>Sensor-based Canopy Mapping Using Photosynthetically Active Radiation Interception in Y-trellis Tree Fruit Orchards</td>
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<td>Jingjin Zhang, Washington State University, Prosser, WA (J. Zhang, M.D. Whiting, Q. Zhang)</td>
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<tr>
<td>11:00AM</td>
<td>131596108</td>
<td>Development of a Mechanical Undercutting System to Minimize Sweetpotato Skinning during Harvest</td>
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<td>Bradley Hayes, Mississippi State University, Mississippi State, MS (B. Hayes, J.K. Ward, J.W. Lowe, J.D. Davis, R. Arancibia, M. Shankle)</td>
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<tr>
<td>11:15AM</td>
<td>131596308</td>
<td>Evaluation of Multi-Pass Mechanical Harvest on Sweet Cherry</td>
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<td>Long He, Washington State University, Prosser, WA (L. He, J. Zhou, Q. Zhang, M. Karkee)</td>
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Monday, July 22 - 9:30AM-12:00PM

**SESSION 105** SOIL AND WATER DISTINGUISHED LECTURE - PERSPECTIVES ON FUTURE MANAGEMENT OF OUR NATURAL RESOURCES -

**LOCATION**: CHICAGO A-SHERATON

**Moderator**: Dave Bjorneberg, USDA ARS, Kimberly, ID

In 2008, the Soil and Water (SW) Division of ASABE implemented a distinguished lecture series to provide perspectives and innovations in soil and water engineering. This year’s distinguished lecture session is titled “Bridging the Gap: Perspectives on Future Management of our Natural Resources”. The session is organized around the central theme of “Managing Soil and Water Resources in the Face of a Changing Climate” and features leading researchers, educators, and mentors in the field of soil and water conservation engineering, ecology and hydrology. The lectures include retrospective analyses of engineering’s role in natural resource management, discussions of innovations in soil and water conservation engineering, land management and challenges facing natural resource professions. The session highlights four of the six ASABE Soil and Water Division groups in presentation of topics related to wetland hydrology, mitigation of sediments and nutrients to river and stream systems, resource management and BMPs. Special focus will be placed on the role of soil and water engineering as adaptation and mitigation strategies are developed to respond to a changing climate.

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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>9:30AM</td>
<td></td>
<td>Introduction</td>
</tr>
<tr>
<td>9:35AM</td>
<td>131732346</td>
<td>Wetland Hydrology Issues Related to Characterizing and Determining Wetland Hydrologic Status</td>
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<td>Dr. Wayne Skaggs, WNR and Distinguished University Professor Biological and Agricultural Engineering, North Carolina State University, Raleigh, NC</td>
</tr>
<tr>
<td>10:20AM</td>
<td>131732353</td>
<td>Managing to Reduce Sediment and Nutrient Movement to River and Stream Systems in the Upper Mississippi River Basin</td>
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<td>Dr. Matthew Helmers, Assistant Professor, Iowa State University, Ames, IA</td>
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<tr>
<td>11:05AM</td>
<td>131732357</td>
<td>Water Demand, Climate, and Land Use Change Impacts on Water Availability and the Role of Decision Support Tools in Future Resource Management</td>
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<td>Dr. Steve McNulty, Supervisory Ecologist, USDA Forest Service, Eastern Forest Environmental Threat Assessment Center, Raleigh, NC</td>
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Monday, July 22 - 9:30AM-12:00PM

**SESSION 106** SPECTROSCOPY AND SPECTROSCOPIC SENSING - PART 1 -

**LOCATION**: VAN HORN B-SHERATON

**Moderator**: Kurt C. Lawrence, USDA ARS, Athens, GA

This year’s distinguished lecture session is titled “Bridging the Gap: Perspectives on Future Management of our Natural Resources - PERSPECTIVES ON FUTURE MANAGEMENT OF OUR NATURAL RESOURCES -” and features leading researchers, educators, and mentors in the field of soil and water conservation engineering, ecology and hydrology. The lectures include retrospective analyses of engineering’s role in natural resource management, discussions of innovations in soil and water conservation engineering, land management and challenges facing natural resource professions. The session highlights four of the six ASABE Soil and Water Division groups in presentation of topics related to wetland hydrology, mitigation of sediments and nutrients to river and stream systems, resource management and BMPs. Special focus will be placed on the role of soil and water engineering as adaptation and mitigation strategies are developed to respond to a changing climate.

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9:30AM</td>
<td></td>
<td>Introduction</td>
</tr>
<tr>
<td>9:35AM</td>
<td>131596145</td>
<td>Partial least squares - discriminant analysis (PLS-DA) of Miscanthus x giganteus by FT-NIR spectroscopy</td>
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<td>Daniel Williams, University of Illinois at Urbana-Champaign, Urbana, IL (D. Williams, M. Danao, M.R. Paulien, K. Rausch, S. Bauer)</td>
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<tr>
<td>9:50AM</td>
<td>131611113</td>
<td>Development of an Automated Algae Growth System</td>
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<td>Weiming Cai, Zhejiang University, Hangzhou, China (W. Cai, N.T. Dunford, N. Wang, S. Zhu, Y. Wai, Y. Zhu)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131593384</td>
<td>Estimation of Bulk DON Content of Small Grain Samples for Comprehensive Evaluation of Fusarium Head Blight Resistance in Wheat</td>
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<td>Kamaramana S. Peiris, Kansas State University, Manhattan, KS (K.S. Peiris, F. Dowell, Y. Dong, B. Bockus)</td>
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</table>
### Technical Sessions

**Monday, July 22 - 9:30AM-12:15PM**

**SESSION 107**

**MACHINE VISION FOR PRECISION AGRICULTURE**

- Sponsored by IET-312
- Moderator: Won Suk (Daniel) Lee, Univ of Florida, Gainesville, FL

**LOCATION:** VAN HORN C-SHERATON

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>9:50AM</td>
<td>131594189</td>
<td>The Rice leaf Damaged Spots Segmentation Algorithm for the Rice Infested by Rice Leaf Roller Zhiyan Zhou, South China Agricultural University, Guangzhou, China (Z. Zhou, G. Jia, X. Luo)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131620028</td>
<td>Preliminary Study on Nitrogen Monitoring of Potato Plants Using Multispectral Image Hong Sun, China Agricultural University, Beijing, China (H. Sun, M. Li, Q. Zhang, A.K. Alva, Z. Zhou)</td>
</tr>
<tr>
<td>10:20AM</td>
<td>131619471</td>
<td>Test Methods for Precision Seed Sowing Systems Yongbo Wan, Oklahoma State University, Stillwater, OK (Y. Wan, A. Koller, E. Miller, P.R. Weckler, R.K. Taylor)</td>
</tr>
<tr>
<td>11:05AM</td>
<td>131598648</td>
<td>Plant or Tree Reconstruction Based on Stereo Vision Zhijiang Ni, University of Florida, Gainesville, FL (Z. Ni, T. Burks)</td>
</tr>
<tr>
<td>11:00AM</td>
<td>131591910</td>
<td>Identification of citrus greening disease using a visible band image analysis Alireza Pourreza, University of Florida, Gainesville, FL (A. Pourreza, W. Lee, E. Raveh, Y. Hong, H. Kim)</td>
</tr>
<tr>
<td>11:15AM</td>
<td>131590540</td>
<td>Estimation of pig weight by machine vision: a review Li Zhou, China Agricultural University, Beijing, China (L. Zhou, L. Chen, T. Guang Hui)</td>
</tr>
</tbody>
</table>

**Monday, July 22 - 9:30AM-12:15PM**

**SESSION 109**

**AIR QUALITY - MEASUREMENT AND MITIGATION OF POLLUTANTS FROM LIVESTOCK AND POULTRY HOUSING - PART 1**

- Sponsored by SE-305, SE-405, SE-412
- Moderator: Kenneth D. Casey, Texas A&M AgriLife Research, Amarillo, TX

**LOCATION:** EMPIRE B-SHERATON

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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>9:30AM</td>
<td>131574922</td>
<td>Gaseous emissions affected by depth and moisture content of poultry built-up litter Hong Li, University of Delaware, Newark, DE (H. Li, C. Lin, S. Collier)</td>
</tr>
<tr>
<td>9:50AM</td>
<td>131593044</td>
<td>Effects of moisture content and litter amendment application rate on ammonia emission from poultry litter Chongyang Lin, University of Delaware, Newark, DE (C. Lin, H. Li)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131616311</td>
<td>Gaseous and Particulate Matter Emissions from Three Laying-hen Housing Systems: Conventional Cage, Aviary, and Enriched Colony Timothy A. Shepherd, Iowa State University, Ames, IA (T.A. Shepherd, H. Xin, Y. Zhao, H. Li, J. Stinn, M.D. Hayes)</td>
</tr>
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</table>

**Monday, July 22 - 9:30AM-12:15PM**

**SESSION 108**

**ADVANCED COMPUTATIONAL APPROACHES FOR SOLVING AGRICULTURAL PROBLEMS**

- Sponsored by IET-217
- Moderator: Kelly R. Thorp, USDA-ARS, Maricopa, AZ

**LOCATION:** EMPIRE A-SHERATON

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<th>Time</th>
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<td>9:30AM</td>
<td>131586216</td>
<td>Study on grain distribution in a cross-flow grain separation chamber based on the discrete element method Xiaojing Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, K. Ni, S. Chen, J. Chen, Y. Zhao)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131620093</td>
<td>Uncertainty of Farm-product Prices by Entropy Model using Probability Distribution for Monthly Prices Sangkyu Eun, Seoul National University, rural system engineering, Seoul, Republic of Korea (S. Eun, L.J. Jae)</td>
</tr>
</tbody>
</table>

**Monday, July 22 - 9:30AM-12:15PM**

**SESSION 109**

**POULTRY HOUSING - PART 2**

- Sponsored by SE-305, SE-405, SE-412
Monday, July 22 - 9:00AM-12:00PM

SESSION 110
ENERGY USE IN ANIMAL FACILITIES - Sponsored by SE-302, SE-405
Moderator: Laura M. Pepple, Univ of Illinois, Urbana, IL
LOCATION: EMPIRE C-SHERATON

9:30AM 131592878 Introduction
9:35AM 131580044 Thickness Grading Impacts on Milling and Large Animal Mortality Compost
Lin Fang, Pennsylvania State University, University Park, PA (L. Fang, J.M. Catchmark)

9:50AM 131608004 Ammonia and nitrous oxide fluxes from a novel swine housing system
Nahm Lovanh, USDA-ARS, Bowling Green, KY (N. Lovanh, J. Loughrin, K. Sistani)

10:05AM 131620191 A summary of farm energy audits in Kentucky

10:20AM Break

10:30AM 131620730 The Potential Causes of Manure Pit Foaming in Pig Finishing Barns
Larry D. Jacobson, University of Minnesota, St. Paul, MN (L. Jacobson, B. Hu, N. Akdeniz, C. Clanton)

10:45AM 131620370 Three-Phase Foam Analysis and the Development of a Lab-Scale Foaming Capacity and Stability Test for Swine Manure Ponds
Mark Van Weelden, Iowa State University, Ames, IA (M. Van Weelden, D.S. Andersen, K.A. Rosentrater, S.L. Trabue, B. Kerr)

Monday, July 22 - 9:30AM-12:00PM

SESSION 111
AGRICULTURAL BY-PRODUCTS AND ANIMAL MORTALITY MANAGEMENT SYSTEMS (ABAMMS) - Sponsored by SE-412
LOCATION: CHOUTEAU A-SHERATON

9:30AM 131592878 Introduction
9:35AM 131595267 Evaluation of a Mechanical Foam Mitigation Device in Swine Deep-Pit Manure Storage
Richard Gates, University of Illinois, Urbana, IL (R. Gates, G. Turner, L.M. Pepple, T.L. Funk)

9:50AM 131596496 Field testing of bone screening and beneficial reuse of large animal mortality compost
Alica J. Ketchum, USDA Natural Resources Conservation Service, Richmond, VA (A.J. Ketchum, R.A. Clark, R. Peer, G. Evanylo)

10:05AM 131592878 The effects of temperature on emission of volatile sulfur compounds during buried pig carcass degradation
Heekwon Ahn, Chungnam National University, Daejeon, Republic of Korea (H. Ahn, M.A. Khan, D. Choi, S. Cho, E.J. Kim, S.H. Yang, E.Y. Lee)

10:20AM 131596474 Structure characterization of bacterial cellulose during dehydration and rehydration process
Lin Fang, Pennsylvania State University, University Park, PA (L. Fang, J.M. Catchmark)

10:35AM Break

10:45AM 131620562 Influence of Harvester and Weather Conditions on Field Loss and Milling Quality of Rough Rice
Ragab K. Gebreil, University of California and Suez Canal University (R.K. Gebreil, G.A. Atangulu, C. Ding, Z. Pan)
<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Authors/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00AM</td>
<td>131621817</td>
<td>Effect of Mechanical Treatments on Creep Behavior of Potato Tubers</td>
<td>Ahmed Rady, Michigan State University, East Lansing, MI (A. Rady, S.N. Soliman)</td>
</tr>
<tr>
<td>11:15AM</td>
<td>131621826</td>
<td>Evaluation of Surface Effect, On Mechanical Damage of Potato Tubers Using Different Methods</td>
<td>Ahmed Rady, Michigan State University, East Lansing, MI (A. Rady, S.N. Soliman)</td>
</tr>
<tr>
<td>11:30AM</td>
<td>131621339</td>
<td>Research on thermal characteristics of whey powder, milk replacer and lactose</td>
<td>Jie Yang, China Agricultural University, Beijing, China (J. Yang, L. Zhao, D. Kong, R. Gao, H. Wang)</td>
</tr>
<tr>
<td>Monday, July 22 - 9:30AM-12:00PM</td>
<td>SESSION 115</td>
<td>ADVANCES IN NONDESTRUCTIVE TESTING OF AGRICULTURAL, BIOLOGICAL, AND FOOD PRODUCTS - Sponsored by FPE-701</td>
<td>Moderator: Yankun Peng, China Agricultural Univ, Beijing, China</td>
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<tr>
<td>LOCATION: PERSHING NORTH-WESTIN</td>
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<tr>
<td>Time</td>
<td>Paper #</td>
<td>Title/Authors</td>
<td>Authors/Institution</td>
</tr>
<tr>
<td>9:30AM</td>
<td>131587037</td>
<td>Spatio-temporal Detection of Chilled Meat during Shelf Life by Using Hyperspectral Imaging Technique</td>
<td>Leilei Zhang, China Agricultural University, Beijing, China (L. Zhang, Y. Peng, S. Dhakal, F. Tao)</td>
</tr>
<tr>
<td>9:50AM</td>
<td>131619253</td>
<td>Detection of fish freshness based on computer vision and near-infrared spectroscopy technique</td>
<td>Xingyi Huang, Jiangsu University, Zhenjiang, China (X. Huang, L. Wu, F. Xu, R. Ding)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131593335</td>
<td>Nondestructive Detection of Pear Firmness Using a Laser Doppler Vibrometer</td>
<td>Wen Zhang, Zhejiang University, Hangzhou, China (W. Zhang, D. Cui, Y. Ying)</td>
</tr>
</tbody>
</table>

**Monday, July 22 - 9:30AM-12:00PM**

**SESSION 116**

**ADVANCES IN ANAEROBIC DIGESTION OF ANIMAL, FOOD AND OTHER ORGANIC WASTES - Sponsored by FPE-707, SE-412**

**LOCATION: PERSHING EAST-WESTIN**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Authors/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:50AM</td>
<td>13159056</td>
<td>Egg Waste and Grape Pomace as Co-digestates for Biogas Production in Anaerobic Digestion</td>
<td>Mary Kay Camarillo, University of the Pacific, Stockton, CA (M. Camarillo, J.K. Domen, M. Ebia, W.T. Stringfellow)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131619080</td>
<td>Characterizing Food Waste Substrates for Co-Digestion through Anaerobic Toxicity Assays (ATA) and Biochemical Methane Potential (BMP)</td>
<td>Stephanie A. Lansing, University of Maryland, College Park, MD (S.A. Lansing, M. Lisboa)</td>
</tr>
<tr>
<td>10:20AM</td>
<td>131619760</td>
<td>Enhancement of Methane Production from Solid-state Anaerobic Digestion (SS-AD) of Yard Trimmings by Fungal Pretreatment</td>
<td>Jia Zhao, The Ohio State University, Wooster, OH (J. Zhao, Y. Li)</td>
</tr>
<tr>
<td>10:35AM</td>
<td>131620409</td>
<td>Investigating Routine Bioaugmentation for Improved Anaerobic Digestion of a Cellulosic Waste</td>
<td>Ana Martin-Ryals, University of Illinois at Urbana-Champaign, Urbana, IL (A. Martin-Ryals, L. Schideman)</td>
</tr>
</tbody>
</table>
### Technical Sessions

**Monday, July 22 - 9:30AM-12:00PM**

#### SESSION 118
**BIOLOGICAL AND THERMOCHEMICAL CONVERSIONS - PYROLYSIS & LIQUEFACTION**
- **9:30AM**
  - **9:30AM**
    - Paper # 131594778
    - Title: Introduction
    - Authors: Zheng, N., Yang, P., Liu, J., He, S., Zhu
  - **9:35AM**
    - Paper # 131620784
    - Title: The Ammonium Bicarbonate Explosion Process
    - Authors: Li, Y., Guo, Y., Zhang, J.
  - **9:45AM**
    - Paper # 131618715
    - Title: Psychrophilic anaerobic sequencing batch reactor with hydrogen fermentation of dairy manure
    - Authors: Canovas, K. B., Zhu, Z., Gao, D.

#### LOCATION: PENN VALLEY-WESTIN

**Monday, July 22 - 9:30AM-12:00PM**

#### SESSION 119
**EMERGING TECHNOLOGIES IN FOOD PROCESSING: PART 1 -**
- **9:30AM**
  - **9:30AM**
    - Paper # 131594788
    - Title: Design and Evaluation of a Pilot Scale Infrared Dry-Peeling System for Tomatoes
    - Authors: Floyd, S., Helfer, K., Devlin, J., Padilla, A.
  - **9:45AM**
    - Paper # 131594789
    - Title: Polymeric-Based Multilayer Packaging Films for Microwave-Assisted and Pressure-Assisted Thermal Sterilization
    - Authors: Bhunia, P. K., Shankar, P., Chatterjee, S., Bose, S.
  - **10:00AM**
    - Paper # 131594790
    - Title: Effect of Slightly Acidic Electrolyzed Water for Inactivation of Escherichia coli on White Shrimp (Litopenaeus vannamei)
    - Authors: Qian, F., Qi, F., Zheng, N., Yang, P., Liu, J., He, S., Zhu, Z., Ye

#### LOCATION: ROANOKE-WESTIN

**Monday, July 22 - 9:30AM-12:00PM**

#### SESSION 120
**MODELING BIOLOGICAL PROCESSES - PART 1 -**
- **9:30AM**
  - **9:30AM**
    - Paper # 131594791
    - Title: Introduction
    - Authors: Zhu, Z., Pan, Z., Pan, S.
  - **9:45AM**
    - Paper # 131594792
    - Title: Development of Fast-Hardening Calcium Phosphate Cements using Micro/Nano Horse Bone Powders
    - Authors: Kim, J. H., Jung, J. H.
  - **10:00AM**
    - Paper # 131594793
    - Title: Numerical simulation design and actual cultivation of Chlorella vulgaris in a 30L cylindrical bubble column photobioreactor (PBR) for microalgae mass production
    - Authors: Puri, V. M., Amri, S.

#### LOCATION: SHAWNEE-WESTIN

---

**Technical Sessions**

- **10:20AM**
  - **10:20AM**
    - Paper # 131594794
    - Title: The Sensory Quality of Cucumber Juice after High Pressure Processing and Heat Treatment
    - Authors: Wang, C., Hua, Y., Zhan, Y., Ju, J., He, S., Zhu

---

**Monday, July 22 - 9:30AM-12:00PM**

#### SESSION 121
**CHALLENGES IN LIGNOCELLULOSIC CONVERSION**
- **9:30AM**
  - **9:30AM**
    - Paper # 131620854
    - Title: Introduction
    - Authors: Yi, H., Zamil, S., Puri, V.
  - **9:45AM**
    - Paper # 131594795
    - Title: The Ammonium Bicarbonate Explosion Process
    - Authors: Burke, D.
  - **10:00AM**
    - Paper # 131594796
    - Title: Towards improving enzymatic hydrolysis of sodium hydroxide pretreated corn stover at high-solids loadings
    - Authors: Bitog, J. P., Pascual, M. C., Cano, J.

#### LOCATION: MISSION-WESTIN

**Monday, July 22 - 9:30AM-12:00PM**

#### SESSION 122
**CHALLENGES IN LIGNOCELLULOSIC CONVERSION**
- **9:30AM**
  - **9:30AM**
    - Paper # 131620855
    - Title: Numerical simulation design and actual cultivation of Chlorella vulgaris in a 30L cylindrical bubble column photobioreactor (PBR) for microalgae mass production
    - Authors: Puri, V. M., Amri, S.
  - **9:45AM**
    - Paper # 131594797
    - Title: Development of Fast-Hardening Calcium Phosphate Cements using Micro/Nano Horse Bone Powders
    - Authors: Kim, J. H., Jung, J. H.
  - **10:00AM**
    - Paper # 131594798
    - Title: Numerical simulation design and actual cultivation of Chlorella vulgaris in a 30L cylindrical bubble column photobioreactor (PBR) for microalgae mass production
    - Authors: Puri, V. M., Amri, S.
### Technical Sessions

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<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
</tr>
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<tbody>
<tr>
<td>10:20AM</td>
<td>131596392</td>
<td>Quantifying Xylose Uptake Kinetics and Enzymatic Utilization Bottlenecks</td>
</tr>
<tr>
<td>10:35AM</td>
<td>131591566</td>
<td>Developing a hybrid control approach for fed-batch enzymatic hydrolysis of pretreated lignocellulosic biomass</td>
</tr>
<tr>
<td>11:00AM</td>
<td>131590908</td>
<td>Characterization and quantification of monomer, oligomers, and by-products from xylen during biomass pretreatment</td>
</tr>
<tr>
<td>11:15AM</td>
<td>131600238</td>
<td>The adsorption of xyloglucan and pectin to model crystalline and amorphous cellulose substrates</td>
</tr>
<tr>
<td>10:45AM</td>
<td>131620546</td>
<td>Addition of Biochar Nano-Particles to Packaging Film</td>
</tr>
<tr>
<td>10:35AM</td>
<td>131618131</td>
<td>Alkali-Ultrasonication, Hot Liquid Water and Ligninolytic Improvement of biofuel production by fungal</td>
</tr>
<tr>
<td>10:20AM</td>
<td>131618916</td>
<td>Effects of Pretreatment Conditions for Enzymatic Hydrolysis of Pelleted Switchgrass</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131594593</td>
<td>Renewable phenols and fuel production from catalytic pyrolysis of lignin using microwave irradiation heating</td>
</tr>
<tr>
<td>10:30AM</td>
<td>131591566</td>
<td>Pyrolysis Kinetics of Physical Components of Wood and Wood-Polymers using isocconversion Method</td>
</tr>
<tr>
<td>12:00PM</td>
<td>131590984</td>
<td>Non-isothermal Crystallization Behavior of Biocomposites from Poly(lactic acid) and Bamboo Fiber</td>
</tr>
</tbody>
</table>

#### Monday, July 22 - 9:30AM-12:00PM

**SESSION 123**

**VALUE-ADDED PROCESSING OF BIO-PRODUCTS FROM FOREST AND AGRICULTURAL BIOMASS -** Sponsored by T-12

- **Moderator:** Kevin Caffrey, North Carolina State University, Raleigh, NC
- **LOCATION:** AMBASSADORS

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<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>9:30AM</td>
<td>131597541</td>
<td>Introduction</td>
</tr>
<tr>
<td>9:35AM</td>
<td>131599541</td>
<td>The Effect of Carbonization Conditions on Characteristics of Corn-Stalk and Rice-Straw Derived Biochar</td>
</tr>
<tr>
<td>11:45AM</td>
<td>131621179</td>
<td>Pyrolysis Kinetics of Physical Components of Wood and Wood-Polymers using isocconversion Method</td>
</tr>
</tbody>
</table>

**Monday, July 22 - 9:30AM-12:00PM**

**SESSION 124**

**CONTINUOUS IMPROVEMENT AND ASSESSMENT PRACTICES -** Sponsored by ED-205, ED-206, ED-204, ED-203

- **Moderator:** Thomas J. Brumm, Iowa State University, Ames, IA
- **LOCATION:** CONGRESSIONAL-WESTIN

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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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</thead>
<tbody>
<tr>
<td>9:30AM</td>
<td>131575514</td>
<td>Compact Power Equipment Troubleshooting Training: Formative Assessment using Think-Aloud Pair Problem Solving</td>
</tr>
<tr>
<td>9:50AM</td>
<td>131594010</td>
<td>A comparative analysis of ABE Bachelor of Science programmes in European and US Universities</td>
</tr>
</tbody>
</table>

**Monday, July 22 - 9:30AM-12:00PM**

**SESSION 125**

**GLOBAL CHALLENGES FORUM -**

- **Moderator:** Robert A. Easter, Ph.D., President, University of Illinois
- **LOCATION:** CHICAGO C-SHERATON

- The Global Challenges Forum will be a moderated session, which will start with a summary of the grand challenges facing humanity as we struggle to provide enough food, feed, fiber, clean water and renewable fuels for a growing population, all while resources continue to be constrained. Representatives from international agricultural and biological technical societies will share their top two or three opportunities their organizations are facing. The session will be conducted in a format to encourage broad-based dialogue and all AIM attendees are welcome to attend.

**Monday, July 22 - 2:30PM-6:00PM**

**SESSION 126**

**ADVANCES IN MACHINERY FOR CROP PRODUCTION -** Sponsored by PM-42

- **Moderator:** H Mark Hanna, Iowa State Univ, Ames, IA
- **LOCATION:** NORTHROP-SHERATON

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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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</thead>
<tbody>
<tr>
<td>2:30PM</td>
<td>131589600</td>
<td>Determination of Working Pressure Range for A Centralized Pneumatic Metering Device for Maize</td>
</tr>
</tbody>
</table>
### Technical Sessions

<table>
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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:50PM</td>
<td>131589598</td>
<td>Simulation Analysis on Air Current Field of Positive-pressure for Metering Device of Maize Precision Planter Song Shi, China Agricultural University, Beijing, China PRESENTER Dongxing Zhang (S. Shi, D. Zhang, T. Cui)</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131618197</td>
<td>Experimental Study on the Impacts of Operating Parameters to the Performance of Air-blowing Seed-metering Device Tao Cui, China Agricultural University, Beijing, China (T. Cui, D. Zhang, J. Liu)</td>
</tr>
<tr>
<td>3:20PM</td>
<td>131620912</td>
<td>Evaluation of Corn Singulation Meters Randy Taylor, Oklahoma State University, Stillwater, OK (R. Taylor, Y. Wan, A. Koller, M. Oldham, E. Miller, P. Weckler)</td>
</tr>
<tr>
<td>3:35PM</td>
<td>131619661</td>
<td>Evaluation of a Corn Singulation System for a Hand Planter Randy Taylor, Oklahoma State University, Stillwater, OK (R. Taylor, A. Koller, P. Orama, W. Ruan)</td>
</tr>
<tr>
<td>3:50PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>4:00PM</td>
<td>131584905</td>
<td>Mathematical modeling and Simulation of an Anti-blocking Mechanism for No-till Maize Planter Nana Gao, China Agricultural University, Beijing, China PRESENTER: Dongxing Zhang (N. Gao, D. Zhang, L. Yang)</td>
</tr>
<tr>
<td>4:15PM</td>
<td>131586344</td>
<td>Parameter-Guided Optimization Algorithm and Its Application in Designing a Rice Transplanting Mechanism Xiaojiang Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, Y. Zhao)</td>
</tr>
<tr>
<td>4:45PM</td>
<td>131596530</td>
<td>A Remotely Controlled Bin-Dog for Transferring Bins in Orchard Environments Yuxiang Ye, Washington State University, Prosser, WA (Y. Ye, L. He, J. Zhou, M. Wang, Q. Zhan, L. Lewis)</td>
</tr>
<tr>
<td>5:00PM</td>
<td>131620291</td>
<td>Anti-Friction Rollers Evaluation of Roselle Harvester Frederico F. Hahn, Universidad Autonoma Chapingo, Chapingo, Chapingo, Texcoco, Mexico (F.F. Hahn, E.S. Poblano)</td>
</tr>
<tr>
<td>5:15PM</td>
<td>131592710</td>
<td>Performance Evaluation of a Tractor Mounted Yam [Dioscorea spp.] Harvester fitted with a Collection Unit Isaac N. Itodo, University of Agriculture, Makurdi, Nigeria (I.N. Itodo, J.O. Daudu)</td>
</tr>
<tr>
<td>5:30PM</td>
<td>131620136</td>
<td>The development of an improved stripping mechanism for sorghum harvesting David White, Harper Adams University, Newport, United Kingdom PRESENTER: R.J. Godwin (D. White, H. Masebu, R.J. Godwin, M. Crook)</td>
</tr>
</tbody>
</table>

### Monday, July 22 - 2:30PM-5:00PM

#### SESSION 127 AUTOMATION SYSTEMS FOR AGRICULTURAL FIELD MACHINERY - PART 2 - Sponsored by PM-58
Moderator: Matthew J. Darr, Iowa State University, Ames, IA LOCATION: FREMONT-SHERATON

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<th>Title/Authors</th>
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<tr>
<td>2:30PM</td>
<td>131593561</td>
<td>Development of Auto-guidance Error Measurement System Using Laser Distance Sensors JoonYong Kim, Seoul National University, Seoul, Republic of Korea (J. Kim, S. Kang, J. Lee, H. Kim, Y. Kim)</td>
</tr>
<tr>
<td>2:50PM</td>
<td>131596410</td>
<td>Automated Logistics Processing of GIS Data for Agricultural Harvest Equipment Jeff C. Askey, Iowa State University, Ames, IA (J.C. Askey, M.J. Darr, L. Powell, B. Covington, K. Webster)</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131591760</td>
<td>System Integration Design of Intra-Row Weeding Robot Chunlong Zhang, China Agricultural University, Beijing, China (C. Zhang, J. Zhang, X. Huang, N. Li, Z. Chen, W. Li)</td>
</tr>
<tr>
<td>3:20PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:30PM</td>
<td>131596843</td>
<td>Tension Detection of Mono Chain Ropeway System for Hilly Orchard Jun Li, South China Agricultural University, Guangzhou, China (J. Li, T. Hong, Z. Yang, J. Su)</td>
</tr>
<tr>
<td>4:15PM</td>
<td>131593595</td>
<td>An Automated Mechanical Weed Control System for Organic Row Crop Production Mazin Saber, University of Florida, Gainesville, FL (M. Saber, W. Lee, T. Burks, G.E. MacDonald, G. Salvador)</td>
</tr>
<tr>
<td>4:30PM</td>
<td>131619227</td>
<td>Evaluating Fruit Impact Bruising on a non-Newtonian Shear Thickening Surface Mark De Kleine, IAREC- Washington State University, Prosser, WA (M. De Kleine, M. Karkee)</td>
</tr>
<tr>
<td>4:45PM</td>
<td>131608939</td>
<td>Transversal Vibration Analysis of Mono Chain Ropeway System Jun Li, South China Agricultural University, Guangzhou, China (J. Li, T. Hong, Z. Yang, Y. Zhu)</td>
</tr>
<tr>
<td>4:45PM</td>
<td>131619406</td>
<td>Hydraulic Control System Design of Hay Bale Recomposer Wencheng Huang, China Agricultural University, Beijing, China (W. Huang, D. Wang, G. Wang, L. Wang)</td>
</tr>
<tr>
<td>5:00PM</td>
<td>131596934</td>
<td>Harvest-assist technologies for improving efficiency in apple production Paul Heinemann, Penn State, University Park, PA (P. Heinemann, J. Liu, Z. Zhang, S. Pysher, J. Schneider, J. Schupp, T. Baughner)</td>
</tr>
<tr>
<td>5:15PM</td>
<td>131620616</td>
<td>Pressure dynamics in solid set canopy spray application system for tree fruit orchards Ajay Sharda, Washington State University, Prosser, WA (A. Sharda, M. Karkee, G. Zhang)</td>
</tr>
<tr>
<td>5:30PM</td>
<td>131591861</td>
<td>The Effect of Shaking Frequency on Fruit Motion Patterns and Damage Rate during Cherry Detaching Process Jianfeng Zhou, Washington State University, Prosser, WA (J. Zhou, L. He, M. Karkee, Q. Zhang)</td>
</tr>
</tbody>
</table>
Monday, July 22 - 2:30PM-5:00PM
SESSION 129
YIELD MONITORING AND YIELD ESTIMATION TECHNIQUES - Sponsored by PM-54, PM-48
Moderator: Pedro Andrade-Sanchez, University of Arizona, Maricopa, AZ
LOCATION: BENTON B-SHERATON

Time | Paper # | Title/Authors
--- | --- | ---
2:30PM | Introduction | 
3:05PM | Evaluation of Impact Based Grain Yield Monitoring System Performance during Harvest Robert McNaull, Iowa State University, Ames, IA (R. McNaull, M.J. Darr)
3:20PM | Break | 

Monday, July 22 - 2:30PM-5:00PM
SESSION 130
INSTRUMENTATION AND CONTROLS FOR PRECISION AGRICULTURE - Sponsored by PM-54, IET-353
Moderator: Paul R. Weckler, Oklahoma State University, Stillwater, OK
LOCATION: VAN HORN A-SHERATON

Time | Paper # | Title/Authors
--- | --- | ---
2:30PM | Introduction | 
2:35PM | 131595317 | Simulation of droplet deposition characteristics of truss ultrasonic aeroponic cultivator Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, H. Guizhen)
3:05PM | 13169952 | Measurement and analysis of mechanical vibrations due to slippage of a corn head row unit Junsu Shin, Iowa State University, Ames, IA (J. Shin, M.J. Darr, R. McNaull)
3:20PM | Break | 
3:30PM | 131598683 | Detection system for the kinetic energy of spraying droplets Yongjun Zheng, China Agricultural University, Beijing, China (Y. Zheng, Y. Zhang, Y. Tan, Y. Lan, Y. Li, H. Yan)
3:45PM | 131612160 | Algorithm Development for LiDAR based Corn Plant Location and Spacing Measurements Yeyin Shi, Oklahoma State University, Stillwater, OK (Y. Shi, N. Wang, R.K. Taylor, W. Raun)
4:00PM | 131594100 | A smart camera system based FPGA for spot-application of agrochemicals in wild blueberry fields Young Chang, Dalhousie University, Truro, NS, Canada (Y. Chang, Q. Zaman, S. Saleem, T. Esau, A. Schumann)

Monday, July 22 - 2:30PM-5:00PM
SESSION 131
APPS AND TOOLS FOR WATER RESOURCES - CAFE SESSION - Sponsored by SW-21, SW-22
Moderator: Kati W. Migliaccio, Tropical Research & Education Center, Homestead, FL
LOCATION: GILLHAM HALL-SHERATON

The Apps and Tools for Water Resources Session will be held in the poster session room and is a cafe style session. Presenters should bring a poster that can be displayed, showcasing their work. At the beginning of the session, each presenter will have 2 to 3 minutes to introduce their app or tool following the order listed in the program. Once complete, presenters will be available by their posters for further engagement and discussions for the remainder of the session.

Time | Paper # | Title/Authors
--- | --- | ---
2:30PM | Introduction | 
131619828 | Identification of classic gully in a field-scale watershed using terrain analysis and spatial clustering techniques Laurimar G. Vendrusculo, Iowa State University, Ames, IA (L.G. Vendrusculo, A. Kaletis)
131620926 | Identifying Riparian Hotspots Using Automated Tool Dharmendra Sarawat, University of Arkansas Division of Agriculture Cooperative Extension Service, Little Rock, AR (D. Sarawat, N. Pai)
131620401 | Automated Geospatial Model Development for Wildfire Susceptibility Analysis and Decision Support Sudhanshu S. Panda, University of North Georgia, Oakwood, GA (S.S. Panda, A. Dudley, D.M. Amatya)
131620655 | Watershed Delineation: A New Approach for Mobile Applications using LiDAR Elevation Data Samuel Noel, Purdue University, West Lafayette, IN (S. Noel, A. Ault, D.R. Buckmaster, B. Engel, J. Frankenberger, N. Celik, J. Krogmeier)
131620765 | The Iowa Daily Erosion Project 2.0: Real time soil and water resource inventory Brian Gelder, Iowa State University, Ames, IA (B. Gelder, R. Cruse, D. James, D. Herzmann, J. Lafflen, W. Krawejowski, J. Opsomer)
131621419 | Developing a Model Irrigation Dissemination Program in the North Texas Municipal Water District Charles Swanson, Texas A&M Agrilife Extensin Service, College Station, TX (C. Swanson, G. Fipps)
Technical Sessions

6 131591086 Developing crop coefficients and pan coefficients for greenhouse-grown tomato under drip irrigation
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li, W. Zhao, Z. Wang, Y. Li) 22 131619440 Evaluating the Economic and Environmental Consequences of Swine Manure Application to Soybean
Daniel S. Andersen, Iowa State University, Ames, IA (D.S. Andersen, M.J. Helmers, C. Pederson, S. Melvin)

7 131591101 Nitrogen dynamics in soil and maize yield as affected by drip fertigation splits and rates in semi-humid region
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li, Y. Li, Y. Li) 23 131609658 Coupled surface-subsurface flow hydrodynamic model for surface irrigation
Yinong Li, State Key Laboratory of Simulation and Regulation of Water Cycle in River Basin, China Institute of Water Resource and Hydropower Research, Beijing, China (Y. Li, D. Dong, D. Xu, S. Zhang, M. Bai)

8 131591426 Using Eddy Covariance, Soil Water Deficit, and Photosynthetically Active Radiation Methods for Corn Evapotranspiration Measurements in the Red River Valley
Kelsey Kolars, North Dakota State University, Fargo, ND (K. Kolars, X. Jia, D. Steele, T. Scherer, T. DeSutter) 24 131619715 Soil Stability and Water Quality within Constructed Wetland Treatment Swales
Anita Thompson, University of Wisconsin, Madison, WI (A. Thompson, S. Prellwitz)

9 131591611 Water Use Efficiency and Net Return of Two Bionergy Crops
Juan Enciso, Texas A&M AgriLife Research, Weslaco, TX (J. Enciso, J. Landivar, F. Rocha, J. Jifon, H. Perea, L. Ribera) 25 131620036 A review of land-use change scenarios by new climate change scenarios in Korea
Yun-Gyeong Oh, Faculty for Geo-information and Earth Observation (ITC), Enschede, Netherlands (Y. Oh, S. Yoo, J. Choi, D. Lee)

10 131592841 An Investigation of the Pollution Load Caused by Trout Breeding in Karakaya Dam Lake in Turkey
Gulsad Uslu, Firat University, Elazig, Turkey (G. Uslu, N.G. Ornekci, A.A. Uslu) 26 131620081 Assessment of Climate Change Impact on Regional Drought Risk Index Based RCP scenarios
Seung-Hwan Yoo, Purdue University, West Lafayette, IN (S. Yoo, B. Engel, J. Choi)

11 131592872 Biodegradation of Lambda Cyhalothrin by Ratelonia eutropha
Gulsad Uslu, Firat University, Elazig, Turkey (G. Uslu, I. Ozdemir Alay, K. Senel) 27 131620153 Development of Organomineral Fertilisers Derived from Nutrient-Enriched Biosolids Granules - Product Specification
Diogenes L. Antille, Teagasc, Wexford, Ireland (D.L. Antille, R. Sakrabani, S.F. Tyrell, S. Le, R. Godwin)

12 131592992 Effects of biochar physico-chemical properties on soil (mechanical) performance and plant response - Review and Research gaps
Ahmed S. Ahmed, McGill University, Saint Anne De Bellevue, QC, Canada (A.S. Ahmed, V. Raghavan) 28 131620197 Determining the Particle Size Range of Organomineral Fertilisers Based on the Spreading Characteristics of the Material

13 131593687 Effects of drip irrigation system uniformity on nitrate leaching during growing seasons of spring maize in North China Plain
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li, Z. Wang, Y. Li) 29 131620213 Field studies on the value of organomineral fertilisers as amendments for winter wheat (Triticum aestivum L)
Diogenes L. Antille, Teagasc, Wexford, Ireland (D.L. Antille, R. Sakrabani, R. Godwin)

14 131595247 Climate Change Vulnerability Assessment for Agricultural Infrastructure in Korea
Sang Min Kim, Gyeongsang National University, Jinju, Republic of Korea (S. Kim, S. Kim, S. Kim, M. Jang) 30 131620220 Field studies on the value of organomineral fertilisers as amendments for perennial ryegrass (Lolium perenne L)
Diogenes L. Antille, Teagasc, Wexford, Ireland (D.L. Antille, R. Sakrabani, R. Godwin)

15 131595313 Effect of Silt Fences and Vegetated Ridges on the Agricultural NPS Reduction from Upland Fields
Sang Min Kim, Gyeongsang National University, Jinju, Republic of Korea (S. Kim, S. Kim, J. Jang) 31 131620234 Mobile Apps for Identifying and Characterizing Watersheds
Dennis R. Buckmaster, Purdue University, West Lafayette, IN (D.R. Buckmaster, S. Noel, A. Layton, A. Balsoms, C. Bowman, A. Ault, B. Engel, J. Frankenberger, J. Chaubey, J. Krogmeier, D.C. Flanagan)

16 131595048 Effect of Irrigating Slightly Acidic Electrolyzed Water on Lettuce Photosynthesis under Mild Water Stress
Chenshan Zhou, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (C. Zhou, F. Qi, X. Hua, Z. Wang, Z. Ye, J. He, S. Zhu) 32 131620284 Evaluation of calcium ammonium nitrate and urea-based fertilisers applied to grassland in Ireland
Diogenes L. Antille, Teagasc, Wexford, Ireland (D.L. Antille, N.J. Hoekstra, M. Emfors, K. Richards, S. Lalor)

17 131596762 Greenhouse Gas Emission from In-situ Denitrifying Bioreactors
Will Pluer, Cornell University, Ithaca, NY (W. Pluer, T. Walter, L. Geohring) 33 131620247 Soil Chemical Properties as Affected by Organomineral Fertilizers - a Four Year Case Study
Diogenes L. Antille, Teagasc, Wexford, Ireland (D.L. Antille, R. Sakrabani, R. Godwin)

18 131618357 Methods, techniques, and considerations for subirrigation practices in the Red River Valley of the North
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Elizabeth Luby, Iowa State University, Ames, IA (E. Luby, M.L. Soupir, T. Moorman)

19 131603513 Effect of Deficit Irrigation on Water Use and Water Use Efficiency of Alfalfa
Caleb Carter, University of Wyoming, Laramie, WY (C. Carter, A. Garcia y Garcia, A. Islam, K. Hansen) 35 131620554 Simple parallel computing strategies for parameter calibration and spatial optimization
Younggu Her, Purdue University, West Lafayette, IN (Y. Her, C. Raj, I. Chaubey)

20 131608507 Kinetics of Phosphorus Sorption in Vegetative Treatment Area Soils
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Phillip Denker, Kansas State University, Manhattan, KS (P. Denker, J.M. Hutchinson, S. Hutchinson)

21 131618700 Response of maize growth and yield to different irrigation and fertilization regimes under sprinkler irrigation in semi-arid region
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li, J. Wen, Y. Li) 37 131620691 Turbidity Modeling for Oklahoma Soils
Brad C. Rogers, Oklahoma State University, Stillwater, OK
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38 131620723 Evaluating the Soil Vulnerability Index for claypan soils in Missouri
Robert Chan, University of Missouri, Columbia, MO (R. Chan, C. Baffaut, A.L. Thompson, J.E. Sadler)

39 131561946 Analysis of Best Management Practice Effectiveness and Spatiotemporal Variability Based on Different Targeting Strategies
Subhashis Giril, Michigan State University, East Lansing, MI (S. Giril, A. Nejadhashemi, S. Woznicki, Z. Zhang)

40 131597820 Regional Trends in Groundwater Levels and Quality as Affected by Irrigational Use in the Southern High Plains of Texas
Srinoop Chaudhuri, Texas A&M AgriLife Research and Extension Center, Vernon, TX (S. Chaudhuri, S. Ale)

41 131618756 Cost-Effectiveness Analysis of Agricultural Pollution Reduction at the Farm Scale Using APEX

42 131619725 Investigation of bacteria transport and implications for water quality from subsurface drainage system in Iowa
Xiao Liang, Iowa State University, Ames, IA (X. Liang, M. Soupir, T. Moorman, L. Jarboe, M.J. Helmers)

43 131619838 Assessing the Impact of Climate Change on Kansas’ Corn Water Balance
Grant Brady, Kansas State University, Manhattan, KS (G. Brady, S. Hutchinson, A. Anandhi)

44 131620280 Development of L-THIA 2012 Direct Runoff and Pollutant Auto-Calibration Module using Genetic Algorithm
Chunhwa Jang, Kangwon National University, Chuncheon, Republic of Korea (C. Jang, D. Kum, J. Ha, K. Kim, D. Kang, K. Kim, D. Shin, B. Engel, K. Lim)

45 131620684 Conceptual Modification Carbon Sequestration Component in the EPIC Model for Long-term Simulation of Conservation Agriculture
Le N. Kieu, North Carolina A&T State University, GREENSBORO, NC (L.N. Kieu, M.R. Reyes)

46 131594756 Developing Sediment Load Thresholds Protective of Aquatic Life
Gene Yagow, Virginia Tech, Blacksburg, VA (G. Yagow, B. Benham, K. Kline, C.J. Mitchem)

47 131618971 Determining Ideal Hydraulic Loads of Rerouted Drainage Water from the Pamlico Sound to Restored Forested Wetlands Utilizing DRAINMOD-W
Tiffany Messer, North Carolina State University, Raleigh, NC (T. Messer, M. Burchell, G. Chescheir, K. Bass)

48 131620325 Calibration and validation of SWAT model for the Little Vermillion Watershed in East Central Illinois
Jason Motsinger, University of Illinois, Urbana, IL (J. Motsinger, R. Bhattarai, P. Kalita)

49 131619604 Best Management Practices Effects on Water Quality Improvement
Ramesh Rudra, University of Guelph, Guelph, ON, Canada (R. Rudra, C. Stang, B. Gharabaghi, A. Mahboubi, S. Ahmed)

50 131607789 Identifying Critical Source Areas of Sediment for Management Practices Using SWAT
Jasmeet Lamba, UW-Madison, Madison, WI (J. Lamba, A. Thompson, K. Karthikeyan, J. Panuska, L. Good)

51 131599466 Regression Modeling of Baseflow and Baseflow Index for Michigan USA
Yinqin Zhang, Purdue University, West Lafayette, IN (Y. Zhang, A. Laurent, B. Engel)

52 131620524 Hydrological modelling of a glacial river basin using SWAT model
Nina Omani, Texas A&M University, College Station, TX (N. Omani, R. Srinivasan)

53 131596839 Variation in Runoff at Different Watershed Scales in the Hilly-gully Region on the Loess Plateau
Qinghong Yan, China Agricultural University, Beijing, China PRESENTER: Sheng (Q. Yan, C. Yuan, T. Lei, Q. Lei, G. Su, L. An)

54 131621392 Climate change impacts on irrigation and horticultural crop yields in Niger
Glenn Brown, Oklahoma State University, Stillwater, OK (G. Brown, A. Sita)

55 131619219 Capillary Movement of Water in Compacted soils as Influenced By Added Organic Materials
John O. Ohu, Univ of Maiduguri, Borno State, Nigeria (J.O. Ohu, E. Mamman)

56 131595082 Evaluation of DRAINMOD Model to study Groundwater table dynamics and N load in western Pampas, Argentina
Gabriel Vazquez-Amable, AACREA, Buenos Aires, Argentina (G. Vazquez-Amable, N. Bosch, A.P. Ricca, M.L. Ortiz-de-Zarate, D. Rojas, J. Lascombes, V. Parra, G. Duarte, F. Feigl)

57 131612299 Critical Moisture Contents of three Compacted Soils as influenced by Added Organic Materials
John O. Ohu, Univ of Maiduguri, Borno State, Nigeria (J.O. Ohu)

58 131619712 Modeling Cover Crop Effectiveness for the Choptank River Watershed, a Tributary of the Chesapeake Bay along Maryland’s Eastern Shore

59 131595922 An Alternative Approach to the Actual Brazilian Maize Crop Zoning

60 131668614 Watershed Diagnostics for Improved Adoption of Management Practices: Integrating Biophysical and Social Factors in Urban and Agricultural Landscapes
Paul Leinham, University of Maryland, College Park, MD (P. Leinham, H. Montas, A. Shirmohammadi, V. Chanse, D. Lansing, A. Rockler, T. Hutson, J. McCoy, L. Cain, S. Wilson, K. Brubaker, Y. Wang)

61 131577668 Monitoring of the soils of the ecological vulnerable areas around Qajaran town
Karen Ghazaryan, Yerevan State University, Yerevan, Armenia (K. Ghazaryan, K. Grigoryan, G. Gevorgyan)

62 131697653 Water Quantity and Water Quality from Edge of Field Monitoring Sites in the Midsouth
Michele L. Raba, Arkansas State University, State University, AR (M.L. Raba)

63 131673199 Hydrology and Water Quality Impacts of Biomass Intercropping in Managed Pine Plantations of the Southeastern United States
Elizabeth L. Allen, North Carolina State University, Raleigh, NC (E.L. Allen, F. Birgand, G. Chescheir, E.M. Bennett, T. Appelboom)

64 131673227 Continuous Monitoring of Hydrology and Water Quality to Detect Impacts of Biomass Intercropping in Managed Pine Plantations of the Southeastern United States
Elizabeth L. Allen, North Carolina State University, Raleigh, NC (E.L. Allen, F. Birgand, G. Chescheir, E.M. Bennett, T. Appelboom)

65 131620077 Crop Water Requirement Information Monitoring and Irrigation Decision Support System in Greenhouse
Wenting Han, Northwest A&F University, Yangling, China (W. Han, X. Zhou)

66 131592449 Irrigation Scheduling for Potato under Deficit Condition along Maryland’s Eastern Shore
Michele L. Raba, Arkansas State University, State University, AR (M.L. Raba)

67 131598259 Exploring environmental and human vulnerabilities to sea level rise through land cover and land use
Anna C. Linhoss, Mississippi State University, Starkville, MS (A.C. Linhoss, G. Kiker, K. Frank)
## Technical Sessions

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**SW POSTER SESSION A - SW-22 EROSION**

- **Title:** Effects of factors on the abundance of epilithic algae in mountain streams of subtropical Taiwan
- **Authors:** Yi-Ming Kuo, MingDao University, Chang-Hua, Taiwan (Y. Kuo, Y. Chuang, H. Lin)

**SW POSTER SESSION B - SW-23 DRAINAGE**

- **Title:** Chemico-physical characteristics of livestock compost in Korea
- **Authors:** Inhong Song, Seoul National University, Seoul, Republic of Korea (I. Song, J. An, M. Kang, J. Jang)

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**SW POSTER SESSION A-SW-22 EROSION**

- **Title:** Spatial characteristics of future precipitation distribution in Korea - Bias corrected by a Quantile Mapping Method
- **Authors:** Moon Seong Kang, Seoul National University, Seoul, Republic of Korea (M. Kang, I. Song, J. Park, S. Kim, M. Jang, J. Jang)

- **Title:** Comparison of Two Prediction Models for Surface Soil Moisture Measurement Using Near-infrared Sensor
- **Authors:** Zhe Yin, China Agricultural University, Beijing, China (Z. Yin, T. Lei, Z. Chen, Q. Yan, Y. Dong)

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**SW POSTER SESSION B - SW-23 DRAINAGE**

- **Title:** Chemico-physical characteristics of livestock compost in Korea
- **Authors:** Inhong Song, Seoul National University, Seoul, Republic of Korea (I. Song, J. An, M. Kang, J. Jang)

- **Title:** Fugitive Dust Emissions from Off-Road Vehicle Maneuvers on Military Training Lands
- **Authors:** Larry E. Wagner, USDA-ARS, Manhattan, KS (L.E. Wagner, J. Meeks, J. Tatarko, R. Maghirang)

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**SW POSTER SESSION A-SW-22 EROSION**

- **Title:** Comparison of Two Prediction Models for Surface Soil Moisture Measurement Using Near-infrared Sensor
- **Authors:** Zhe Yin, China Agricultural University, Beijing, China (Z. Yin, T. Lei, Z. Chen, Q. Yan, Y. Dong)

- **Title:** Estimation of the TANK model in Ungauged Watersheds (N. Modala, S. Ale, N. Rajan, K.R. Thorp)

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**Technical Sessions**

- **Title:** Siphon Spillway: Real World Example
- **Authors:** Josh D. Boatwright, Clemson University, Clemson, SC (J.D. Boatwright, K.R. Kirk)

- **Title:** Soil Moisture Measurement Using Near-infrared Sensor
- **Authors:** Afolayan Stephen Olaoye, National Horticultural Research Institute, KANO, Nigeria (A.S. Olaoye)

- **Title:** Estimating Reference Evapotranspiration (Khorasan Razavi Province, IRAN)
- **Authors:** Ali R. Tavakoli, Science & Research Branch, Islamic Azad University, Tehran, Islamic Republic of Iran (A.R. Tavakoli, E. Babazadeh)

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**Technical Sessions**

- **Title:** Military vehicle trafficking impacts on vegetation and soil bulk density at Fort Benning, Georgia
- **Authors:** Larry E. Wagner, USDA-ARS, Manhattan, KS (L.E. Wagner, A. Retta, J. Tatarko)

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**Technical Sessions**

- **Title:** Soil Moisture Measurement Using Near-infrared Sensor
- **Authors:** Afolayan Stephen Olaoye, National Horticultural Research Institute, KANO, Nigeria (A.S. Olaoye)

- **Title:** Estimating Reference Evapotranspiration (Khorasan Razavi Province, IRAN)
- **Authors:** Ali R. Tavakoli, Science & Research Branch, Islamic Azad University, Tehran, Islamic Republic of Iran (A.R. Tavakoli, E. Tavakoli)

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**Technical Sessions**

- **Title:** Estimating Reference Evapotranspiration (Khorasan Razavi Province, IRAN)
- **Authors:** Afolayan Stephen Olaoye, National Horticultural Research Institute, KANO, Nigeria (A.S. Olaoye)

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<td>A Participatory System Dynamics Modeling Approach for Soil Salinity Management Azhar I. Baig, McGill University, Sainte Anne de Bellevue, QC, Canada PRESENTER: Jan Adamowski (A.I. Baig, S.O. Prasher, J. Adamowski)</td>
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<td>106</td>
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<td>107</td>
<td>131597386</td>
<td>Fluid-Structure Interaction Analysis Method for Pressure-compensating Emitter Zhengying Wei, Xi'an Jiaotong University, Xi'an, China PRESENTER: Jun Du (Z. Wei, Z. Xing, Y. Weijing, Y. Tang, C. Jiasang)</td>
</tr>
<tr>
<td>108</td>
<td>131585173</td>
<td>Effects of different irrigation and fertilizer regimes on soil moisture and grain yield of summer maize Haoru Li, Institute of Environment and Sustainable Development in Agriculture, Beijing, China (H. Li, W. Hao, X. Mei, L. Mao)</td>
</tr>
<tr>
<td>109</td>
<td>131586414</td>
<td>Preliminary application of the fuzzy c-mean clustering method to the soil mapping in the lower Heilie River Lili Mao, institute of environment and sustainable in agriculture, Beijing, China (L. Mao, J. Yu, Y. Zhang)</td>
</tr>
<tr>
<td>110</td>
<td>131595297</td>
<td>Mechanics Performance of Atomization Cultivation Root Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, Y. Wenchu)</td>
</tr>
</tbody>
</table>
## Technical Sessions

### SESSION 134  BIO-SENSORS AND BIO-INSTRUMENTATION -
Sponsored by BE-23
Moderator: Ning Wang, Oklahoma State Univ, Stillwater, OK

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<tr>
<th>Time</th>
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<tr>
<td>2:30PM</td>
<td>131599252</td>
<td>Introduction</td>
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</table>
| 2:35PM | 132093629 | Reduced graphene-oxide/platinum-black nanocomposite as electrocatalytic platform for electrochemical biosensors to monitor fish quality  
Diana C. Vanegas, University of Florida, Gainesville, FL  
(D.C. Vanegas, S.L. Burns, P. Chatuvedi, M. Taguchi, A.A. Teixeira, E.S. McLamore) |
| 2:50PM | 131620130 | Experimental study on T-TDR sensor soil heat transfer analysis and structural optimization  
Jun Qiao, Northwest A&F University, Yangling, China  
(J. Qiao, W. Han, J. Xu) |
| 3:05PM | 131577119 | Development of rapid diagnosing kit for Porcine proliferative enteropathy (PPE)  
Hyuck Joo Kim, Rural development administration, Suwon, Republic of Korea  
(H. Kim, G. Kim, B.G. Yu, J.T. Hong, S. Kim) |
| 3:20PM | 131593622 | Break  
Amperometric determination of bisphenol A in milk using ionic liquid-carbon nanotube composite electrode  
Ling Zhou, College of Biosystems Engineering and Food Science, Hangzhou, China  
(L. Zhou, J. Wang, D. Li) |
| 3:45PM | 131620155 | Detection Model of FDR Moisture Content Sensor Affected by Soil Salinity and Temperature  
B. Liu, Northwest Ag & Forestry University, Yangling China  
(B. Liu, W. Han) |

### SESSION 135  MOBILE APP FOR AGRICULTURAL APPLICATIONS -
Sponsored by IET-254
Moderator: Joseph S. Dvorak, Univ of Kentucky, Lexington, KY

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<tr>
<th>Time</th>
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<th>Title/Authors</th>
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| 2:30PM | 131579954 | Farm Management Information System: An Approach  
Using Task-Specific, Collaborative Mobile Apps and Cloud Storage Services  
Jonathan T. Welte, Purdue University, West Lafayette, IN  
(J.T. Welte, A. Ault, C. Bowman, S. Ellis, D.R. Buckmaster, D.R. Eis, J. Krogmeier) |
| 2:50PM | 131620962 | Opportunities and Challenges in Developing Smartphones Apps  
Dharmendra Saraswat, University of Arkansas Division of Agriculture Cooperative Extension Service, Little Rock, AR  
(D. Saraswat) |
| 3:05PM | 131620945 | Crowdsourcing App for Precision Agriculture Decision Making  
Dharmendra Saraswat, University of Arkansas Division of Agriculture Cooperative Extension Service, Little Rock, AR  
(D. Saraswat) |
| 3:20PM | 131620429 | Mobile App for Tractor Rollover Detection and Emergency Notification  
Bo Liu, University of Missouri, Columbia, MO  
(B. Liu, A.B. Koc) |
| 3:35PM | 131596866 | Break  
Tablet PC based Method of Farm Machinery Monitoring and Route Guidance  
Cailong Wu, China Agricultural University, Beijing, China  
(C. Wu, L. Ding, Y. Cai, M. Luo, J. Zhao) |
| 4:00PM | 131621222 | A Remote Operating System of Grain Yield Monitor  
Xincheng Li, China Agricultural University, Beijing, China  
(X. Li, M. Li, L. Zheng, M. Zhan, H. Sun, X. An, J. Wu) |
| 4:15PM | 131587118 | A Self-adaptive and Precise Oxygen Supplementary Equipment for Aquaculture with SMS supported  
Qingzheng Zhou, Northwest A&F University, Yangling, China  
(Q. Zhou, H. Zhang) |
Technical Sessions

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<th>Time</th>
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<tr>
<td>134</td>
<td>131594456</td>
<td>The Impact of Carbohydrate and Protein Level and Sources on Swine Manure Foaming Properties</td>
<td>Mark Van Weelden, Iowa State University, Ames, IA (M. Van Weelden, D.S. Andersen, K.A. Rosentrater, B. Keer, S.L. Trabue)</td>
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<tr>
<td>135</td>
<td>13161986</td>
<td>Environmental Impacts of Manure Staging Areas</td>
<td>Rhonda Miller, Utah State University, Logan, UT (R. Miller, M. Jensen, S. Murdock, M. Maynes)</td>
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<td>136</td>
<td>131619443</td>
<td>A County-Level Assessment of Manure Nutrient Availability Relative to Crop Nutrient Capacity in Iowa: Spatial and Temporal Trends</td>
<td>Daniel S. Andersen, Iowa State University, Ames, IA (D.S. Andersen)</td>
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<tr>
<td>137</td>
<td>131619616</td>
<td>Impact of Temperature and Mixing on Methane Production Rates of Swine Manures obtained from Deep Pit Storages</td>
<td>Daniel S. Andersen, Iowa State University, Ames, IA (D.S. Andersen, A. Balista, M. Van Weelden)</td>
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<tr>
<td>140</td>
<td>131617903</td>
<td>CFD Analysis of Natural Ventilation and Ammonia in a Rabbits Building</td>
<td>Jorge Flores-Velazquez, University of San Luis Potosi, San Luis Potosi, Mexico PRESENTER: F. Villarreal (J. Flores-Velazquez, F. Villarreal, A. Rojano, J. Montero)</td>
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<tr>
<td>141</td>
<td>131620819</td>
<td>Greenhouse gas emissions from beef cattle feedlot pen surfaces in Texas during fall</td>
<td>Kenneth D. Casey, Texas A&amp;M AgriLife Research, Amarillo, TX (K.D. Casey, V. Vaddella, H.M. Waldrip, R.W. Todd, W.B. Faulkner)</td>
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<tr>
<td>142</td>
<td>131620720</td>
<td>Alternatives for animal drinking and barn cleaning to reduce water use in swine production operations</td>
<td>Bernardo Z. Predicala, Prairie Swine Centre Inc., Saskatoon, SK, Canada (B.Z. Predicala, A. Alvarez, Y. Jin)</td>
</tr>
<tr>
<td>143</td>
<td>131621753</td>
<td>CFD Simulation of Manure Pit Ventilation using SolidWorks</td>
<td>Daniel Hofstetter, The Pennsylvania State University, University Park, PA PRESENTER: Virendra Puri (D. Hofstetter, H.B. Manbeck, V.M. Puri, D.J. Murphy)</td>
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<tr>
<td>144</td>
<td>131620960</td>
<td>A literature review on disinfecting chemicals for improved bio-security of emergency animal mortality composting and anaerobic digestion</td>
<td>Lam T. Nguyen, Iowa State University, Ames, IA (L.T. Nguyen, T. Glanville, J. Koziel, T. Franu)</td>
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Monday, July 22 - 2:30PM-5:00PM

SESSION 138

MICROWAVE AND RADIO FREQUENCY HEATING AND DRYING IN AGRICULTURAL AND FOOD PROCESSING - Sponsored by FPE-703

LOCATION: EMPIRE C-SHERATON

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<tr>
<th>Time</th>
<th>Paper #</th>
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<tr>
<td>2:30PM</td>
<td>131596925</td>
<td>Radio frequency assisted with hot air drying protocol</td>
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<td>2:50PM</td>
<td>131619707</td>
<td>Optimization of microwave-convective drying of oyster mushrooms (Pleurites ostreatus) using response-surface methodology</td>
</tr>
<tr>
<td>4:00PM</td>
<td>131621292</td>
<td>Study of Power and Energy used in Microwave Assisted Thermal Sterilization (MATS)</td>
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Monday, July 22 - 2:30PM-5:00PM

SESSION 139

PHYSICAL PROPERTIES AND MODELING OF FOOD AND BIOPRODUCTS - Sponsored by FPE-701

LOCATION: CHOUTEAU A-SHERATON

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<th>Time</th>
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<tr>
<td>2:30PM</td>
<td>131589618</td>
<td>Effect of condensed distillers solubles and drying methods on selected chemical and physical characteristics of laboratory-prepared wheat distillers dried grain with solubles</td>
</tr>
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<td>2:35PM</td>
<td>131608291</td>
<td>Single-Screw Extrusion Processing of Soy White Flakes (SWF) and High Protein Distiller Dried Grains (HP-DDG)</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131587727</td>
<td>Material Properties of Wheat Mill Streams for Discrete Element Method Modeling</td>
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<tr>
<td>3:20PM</td>
<td>131591899</td>
<td>Isolation and Characterization of Camellina Proteins from Camellina Meal</td>
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Technical Sessions

Monday, July 22 - 2:30PM-5:00PM
SESSION 140
ADVANCES IN CO-PRODUCT AND BYPRODUCT MANAGEMENT AND UTILIZATION - Sponsored by FPE-707
Moderator: Kurt A. Rosentrater, Iowa State University, Ames, IA
LOCATION: CHOUTEAU B-SHERATON

Time Paper # Title/Authors
2:30PM 131593363 Introduction
2:35PM 131593363 Techno-Economic Modeling of Ethanol Co-Product Processing in a Corn Based Ethanol Plant in 2012
Christine Wood, South Dakota State University, Brookings, SD PRESENTER: Kurt Rosentrater (C. Wood, K.A. Rosentrater, K. Muthukumarappan)
2:50PM 131593288 Fractionation of distillers dried grains with solubles (DDGS) through a destoner
Weitao Zhang, Iowa State University, Ames, IA (W. Zhang, K.A. Rosentrater)
3:05PM 131593414 Optimization of the Pyrolysis of Distillers Dried Grains with Solubles
Christine Wood, South Dakota State University, Brookings, SD PRESENTER: K. Muthukumarappan (C. Wood, K. Muthukumarappan, K.A. Rosentrater)
3:20PM 131593267 Break
3:30PM 131593267 Some properties of evolving distillers dried grains with solubles (DDGS) in 2012
Weitao Zhang, Iowa State University, Ames, IA (W. Zhang, K.A. Rosentrater)
3:45PM 131594705 Physical properties of extruded corn coproducts
Jordan J. Foley, Iowa State University, Ames, IA (J.J. Foley, K.A. Rosentrater)
4:00PM 131594712 Pretreatment Methods for Lignocellulosic Biomass to Ethanol
Minliang Yang, Iowa State University, Ames, IA (M. Yang, W. Zhang, K.A. Rosentrater)

Monday, July 22 - 2:30PM-5:00PM
SESSION 141
GLOBAL ISSUES ON VALUE ADDED PROCESSING - Sponsored by FPE-703
Moderator: Michael O. Ngadi, McGill University, Ste-Anne-de-Bellevue, QC, Canada
LOCATION: PERSHING SOUTH-WESTIN

Time Paper # Title/Authors
2:30PM 131592851 Introduction
2:35PM 131592851 Enzyme Aided Specialty Oil Refining
Nurhan T. Dunford, Oklahoma State University, Stillwater, OK (N.T. Dunford, S. Al Shari, C. Goad)
2:50PM 131593351 Effects of deterioration parameters on storage of maize Rashid Suleiman, Iowa State University, Ames, IA (R. Suleiman, K.A. Rosentrater, C.J. Bern)
3:05PM 131597052 Compositional Changes of Newly Harvested Soybeans under Simulated Tropical Storage Conditions
Yun Yin, University of Illinois at Urbana-Champaign, Urbana, IL (Y. Yin, M. Danoa, K. Raman)
3:20PM 131618744 Current Situation and Development Trend of Fruit and Vegetable Fresh-keeping Packaging Technology
Jie Li Duan, South China Agricultural University, Guangzhou, China (J. Duan, H. Lu, Z. Yang, E. Lv, J. Guo)
3:35PM 131620135 Break
3:45PM 131620135 Application of Edible Coatings on Japanese Loquat (Eriobotrya japonica T.) Postharvest Quality
Carlos J. Marquez Cardozo, National University of Colombia, Medellín, Colombia (C.J. Marquez Cardozo)

Monday, July 22 - 2:30PM-5:00PM
SESSION 142
BIOMASS CATALYTIC AND THERMOCHEMICAL CONVERSIONS - GASIFICATION - Sponsored by FPE-709, T-11
Moderator: Ajay Kumar, Oklahoma State Univ, Stillwater, OK
LOCATION: PERSHING NORTH-WESTIN

Time Paper # Title/Authors
2:30PM 131595279 Introduction
3:05PM 131595279 Fuzzy Comprehensive Evaluation Model for Estimating the Quality of Extruded Corn Used as Animal Feed Ingredient
Jie Yang, China Agri, Beijing, China (J. Yang, L. Wang, H. Wang, H. Li, W. Huang, H. Li)
3:45PM 131594712 Fuzzy Comprehensive Evaluation Model for Estimating the Quality of Extruded Corn Used as Animal Feed Ingredient
Jie Li Duan, South China Agricultural University, Guangzhou, China (J. Duan, H. Lu, Z. Yang, E. Lv, J. Guo)
4:15PM 131629893 Break
4:30PM 131620639 A feasibility study of aflatoxins detection by terahertz time-domain spectroscopy
Min Chen, Zhejiang University, Hangzhou, China (M. Chen, L. Xie)
4:45PM 131620622 Development of a Biorenewables Process Evaluation Tool for Early-Stage Cost Analysis
Joshua Claypool, Iowa State University, Ames, IA (J. Claypool, D. Raman)

Monday, July 22 - 2:30PM-5:00PM
SESSION 143
SPECTRAL SCATTERING TECHNOLOGY FOR FOOD QUALITY AND SAFETY - Sponsored by FPE-701, IET-312, IET-348, IET-353
Moderator: Jianwei Qin, USDA-ARS, Beltsville, MD
LOCATION: PERSHING WEST-WESTIN

Time Paper # Title/Authors
2:30PM 131648152 Introduction
2:35PM 131648152 Assessing the Sensitivity and Robustness of Prediction Models for Apple Firmness and Soluble Solids Content Using Spectral Scatting Technique
Fernando A. Mendoza, USDA ARS, East Lansing, MI (F.A. Mendoza, R. Lu, Q. Zhu)
2:50PM 131620600 A Method for Controlling Enzyme Addition in Cheese Making
Fred Payne, University of Kentucky, Lexington, KY (F. Payne)
3:05PM 131591839 Authentication of liquid and dry milk using Raman scattering spectroscopy and imaging
Jianwei Qin, USDA, Beltsville, MD (J. Qin, K. Chao, Y. Cheng, M.S. Kim)
3:20PM 131594789 Break
3:30PM 131594789 Discrimination among ginsengs of different growing years based on electronic nose
Cui Shaoqing, Zhejiang University, Hangzhou, China (C. Shaoqing, C. Lin, W. Jun)
3:45PM 131620240 A feasibility study of aflatoxins detection by terahertz time-domain spectroscopy
Min Chen, Zhejiang University, Hangzhou, China (M. Chen, L. Xie)
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<tr>
<td>2:30PM</td>
<td>131620634</td>
<td>Computational Analysis of the Growth of Microalgae on Swine Wastewater in a Bubble Column Photobioreactor</td>
<td>Hossein Amini, North Carolina Agricultural and Technical State University, Greensboro, NC (H. Amini, L. Wang, B. Zhang, A. Shahbazi)</td>
</tr>
<tr>
<td>4:15PM</td>
<td>131630900</td>
<td>ATP Synthesis via Artificial Photosynthesis</td>
<td>Hao Lu, North Carolina State University, Raleigh, NC (H. Lu, W. Yuan)</td>
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<td>4:30PM</td>
<td>131631085</td>
<td>Pretreatment and Properties of Ultrasound Adsorption Straw Used for Biological Hydrogen Production</td>
<td>Quanguo Zhang, Hernan Agricultural University, Zhengzhou, China (Q. Zhang)</td>
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<tr>
<td>4:45PM</td>
<td>131593488</td>
<td>Spatial approaches in biomass feedstock production, supply and eco-environmental impact modeling</td>
<td>Zewei Miao, University of Illinois at Urbana-Champaign, Urbana, IL (Z. Miao, T. Griff, K. Ting)</td>
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Monday, July 22 - 2:30PM-5:00PM

SESSION 145

MODELING BIOLOGICAL PROCESSES - PART 2 - SUSTAINABILITY & LIFE CYCLE ASSESSMENT OF BIOENERGY & AGRICULTURAL SYSTEMS - Sponsored by FPE-709, T-11

Moderator: Deepak Kumar, Oregon State University, Corvallis, OR

LOCATION: PENN VALLEY-WESTIN

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<td>2:30PM</td>
<td>131620326</td>
<td>Development of a bivariate mathematical model to Individual assessment of lameness through back posture analysis</td>
<td>Robert Frazier, Oklahoma State University, Stillwater, OK (R. Frazier)</td>
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<tr>
<td>2:35PM</td>
<td>131580611</td>
<td>Life Cycle Assessment of Corn Stover Torrefaction Plant Integrated with a Corn ethanol Plant and a Coal Fired Power Plant</td>
<td>N. Kaliyan, R. Morey, D.G. Tiffany, W.F. Lee</td>
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<td>131620634</td>
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Monday, July 22 - 2:30PM-5:00PM

SESSION 146

LOW IMPACT DEVELOPMENT AND ECOLOGICAL ENGINEERING IN THE US AND DEVELOPING COUNTRIES - Sponsored by BE-22, SW-224, SW-25

Moderator: Jason R. Vogel, Oklahoma State University, Stillwater, OK; Stephanie A. Lansing, Univ of Maryland, College Park, MD

LOCATION: SHAWNEE-WESTIN
Technical Sessions

Monday, July 22 - 2:30PM-5:00PM
SESSION 148 INNOVATIONS IN CURRICULUM - Sponsored by ED: 205, ED-206, ED-204, ED-203
Moderator: Deepak R. Keshwani, Univ of Nebraska, Lincoln, NE
LOCATION: AMBASSADORS-WESTIN

2:30PM 131596593 The Impact of Spatial Distribution and Terrain on the Delivered Cost of Woody Biomass Feedstocks
Damon Hartley, West Virginia University, Morgantown, WV
(0. Hartley, J. Wang)

3:05PM 131598776 Production and Cost of Whole-tree Harvesting, Chipping, and Transportation in Southern Michigan Fei Pan, Michigan State University, East Lansing, MI (F. Pan)

3:20PM 131592594 Frictional Properties of Ground Loblolly Pine Chips - Poster
Oladiran Fasina, Auburn University, Auburn, AL (O. Fasina, J. Wadkins, A. Shrestha)

3:50PM Break

4:00PM 131617680 Effect of size on physical and aerodynamic properties of loblolly pine wood
Olatunde A. Gbenga, Auburn University, Auburn, AL (O.A. Gbenga, O.O. Fasina, T.P. McDonald, S. Adhikari)

4:15PM 131619993 The impact of fiber quality and cell wall structure on grinding of woody biomass
Ladan J. Naimi, University of British Columbia, Vancouver, BC, Canada (L.J. Naimi, S. Sokhansanj, X. Bi, J. Lim)

4:30PM 131620592 Encapsulation of Pelletized Biomass
Seyedeh Zahra Hashemi, University of British Columbia, Vancouver, BC, Canada (S. Hashemi, S. Sokhansanj, J. Lim, S. Mani)

4:45PM 131629870 Sensitivity of Wood Pellet Quality to Variability in Feedstock Characteristics
Shahab Sokhansanj, Oak Ridge National Lab, Vancouver, BC, Canada (S. Sokhansanj)

Monday, July 22 - 2:30PM-5:00PM
SESSION 150 CHINA EXCHANGE IN FOOD, ENERGY AND ENVIRONMENT - Intl-601, AOCABFE
LOCATION: CHICAGO C-SHERATON

2:30PM 131598581 Reengineering the Capstone Design Experience
Richard V. Scholtz, University of Florida, Gainesville, FL (R.V. Scholtz, E.S. McLamore)

2:50PM 131577957 Applying the Concepts of Agricultural Engineering OUTSIDE the Field of Agriculture
Russell L. Roberson, GE Healthcare, Kenosha, WI (R.L. Roberson)

3:05PM 131598950 Agricultural Equipment Industry Partnerships: The “C”s” in Curriculum Innovation are for Cooperation and Collaboration
Michael L. Pate, Utah State University, Logan, UT (M.L. Pate, R. Hatch, B. Miller, R. Beard)

3:20PM 131605874 A Solar Energy Analysis Station for Renewable Energy Education
Don Johnson, University of Arkansas, Fayetteville, AR (D. Johnson, C.W. Shoulders, D.W. Edgar)

3:35PM 131609168 An approach to experiential learning in undergraduate education: A case study on a lifecycle assessment class
Israel S. Dunmade, Mount Royal University, Calgary, AB, Canada (I.S. Dunmade)

3:50PM Break

4:00PM 131620219 Integrated model for teaching tractor-implement performance
Dennis R. Buckmaster, Purdue University, West Lafayette, IN (D.R. Buckmaster, I. Behesti)

4:15PM 131620643 Utilizing Wii Technology to Teach Acceleration
Joseph Dvorak, University of Kentucky, Lexington, KY (J. Dvorak, T.C. Dvorak, S. Neel)

4:30PM 131620484 Capstone Experiences in Developing an Electronic Seed Singulation Device for Precision Planting
Ganeesh C. Bora, North Dakota State University, Fargo, ND (G.C. Bora)

4:45PM 131621989 BioRenewable Systems - A New B.S. Undergraduate Program
Jude Liu, The Pennsylvania State University, University Park, PA (J. Liu, J.M. Hamlett, N. Brown, P. Smith, M. Marshall, J.M. Catchmark, P. Heinemann)

Monday, July 22 - 2:30PM-5:00PM
SESSION 149 ENERGY AND ENVIRONMENT - GLOBAL PERSPECTIVE - Sponsoring Committee: AABFEIO, T-11, Intl-601
Moderator: Paramswaran Mallikarjunan, Virginia Tech, Blacksburg, VA
LOCATION: CHICAGO B-SHERATON

4:30PM 131621989 BioRenewable Systems - A New B.S. Undergraduate Program
Jude Liu, The Pennsylvania State University, University Park, PA (J. Liu, J.M. Hamlett, N. Brown, P. Smith, M. Marshall, J.M. Catchmark, P. Heinemann)

Time Paper # Title/Authors

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Damon Hartley, West Virginia University, Morgantown, WV
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Oladiran Fasina, Auburn University, Auburn, AL (O. Fasina, J. Wadkins, A. Shrestha)

3:50PM Break

4:00PM 131617680 Effect of size on physical and aerodynamic properties of loblolly pine wood
Olatunde A. Gbenga, Auburn University, Auburn, AL (O.A. Gbenga, O.O. Fasina, T.P. McDonald, S. Adhikari)

4:15PM 131619993 The impact of fiber quality and cell wall structure on grinding of woody biomass
Ladan J. Naimi, University of British Columbia, Vancouver, BC, Canada (L.J. Naimi, S. Sokhansanj, X. Bi, J. Lim)

4:30PM 131620592 Encapsulation of Pelletized Biomass
Seyedeh Zahra Hashemi, University of British Columbia, Vancouver, BC, Canada (S. Hashemi, S. Sokhansanj, J. Lim, S. Mani)

4:45PM 131629870 Sensitivity of Wood Pellet Quality to Variability in Feedstock Characteristics
Shahab Sokhansanj, Oak Ridge National Lab, Vancouver, BC, Canada (S. Sokhansanj)

Monday, July 22 - 2:30PM-5:00PM
SESSION 148 INNOVATIONS IN CURRICULUM - Sponsored by ED: 205, ED-206, ED-204, ED-203
Moderator: Deepak R. Keshwani, Univ of Nebraska, Lincoln, NE
LOCATION: AMBASSADORS-WESTIN

2:30PM 131598581 Reengineering the Capstone Design Experience
Richard V. Scholtz, University of Florida, Gainesville, FL (R.V. Scholtz, E.S. McLamore)

2:50PM 131577957 Applying the Concepts of Agricultural Engineering OUTSIDE the Field of Agriculture
Russell L. Roberson, GE Healthcare, Kenosha, WI (R.L. Roberson)

3:05PM 131598950 Agricultural Equipment Industry Partnerships: The “C”s” in Curriculum Innovation are for Cooperation and Collaboration
Michael L. Pate, Utah State University, Logan, UT (M.L. Pate, R. Hatch, B. Miller, R. Beard)

3:20PM 131605874 A Solar Energy Analysis Station for Renewable Energy Education
Don Johnson, University of Arkansas, Fayetteville, AR (D. Johnson, C.W. Shoulders, D.W. Edgar)

3:35PM 131609168 An approach to experiential learning in undergraduate education: A case study on a lifecycle assessment class
Israel S. Dunmade, Mount Royal University, Calgary, AB, Canada (I.S. Dunmade)

3:50PM Break

4:00PM 131620219 Integrated model for teaching tractor-implement performance
Dennis R. Buckmaster, Purdue University, West Lafayette, IN (D.R. Buckmaster, I. Behesti)

4:15PM 131620643 Utilizing Wii Technology to Teach Acceleration
Joseph Dvorak, University of Kentucky, Lexington, KY (J. Dvorak, T.C. Dvorak, S. Neel)

4:30PM 131620484 Capstone Experiences in Developing an Electronic Seed Singulation Device for Precision Planting
Ganeesh C. Bora, North Dakota State University, Fargo, ND (G.C. Bora)

4:45PM 131621989 BioRenewable Systems - A New B.S. Undergraduate Program
Jude Liu, The Pennsylvania State University, University Park, PA (J. Liu, J.M. Hamlett, N. Brown, P. Smith, M. Marshall, J.M. Catchmark, P. Heinemann)
Monday, July 22 - 2:30PM-5:00PM
SESSION 153
GREENHOUSE GASES - Sponsored by SE-305
Moderator: Russell McGee, Texas A&M Univ, College Station, TX
LOCATION: CHICAGO A-SHERATON
A panel of air quality experts discuss the science and politics of greenhouse gas legislation. Question and answer format.
Panelists: Dr. Calvin Parnell, Regents Professor, Holder of the endowed Cotton Chair and Director of the Center for Agricultural Air Quality Engineering and Science (CAAQES)
Dr. Bryan Shaw, Chairman of the Texas Commission on Environmental Air Quality (TCEO)

Tuesday, July 23 - 9:30AM-12:00PM
SESSION 201
POWER AND MACHINERY DIVISION POSTER SESSION -
Moderator: Michael P. Lyons, CNH America LLC, Burr Ridge, IL
LOCATION: GILLHAM HALL-SHERATON
1. Effect of Soil Sampling Density and Landscape Characteristics on Soil Test Phosphorus
Carmen T. Agouridis, University of Kentucky, Lexington, KY
(C.T. Agouridis, D. Stamper, D. Edwards, M. Purschwitz)
2. Corn Automatic Irrigation Expert System Based on Infrared Temperature Sensor and Capacitive Moisture Sensor
Zhigang Wang, USDA-ARS, College Station, TX
PRESENTER: Yubin Lan (Z. Wang, Y. Lan, W.C. Hoffmann, Z. Zhang, Y. Wang)
3. Analysis of Effective Power and Reduced, Rotational Force, Specific and Hourly Consumption of Fuel, Efficiency Term Mechanics and Volumetric for an Agricultural Tractor Fed with Fossil Diesel and Two Types of Biofuels
Carlos Eduardo S. Volpato, Federal University of Lavras, Lavras, Brazil (C.S. Volpato)
4. Optical Sprayer Nozzle Discharge Sensor
Joseph Dvorak, University of Kentucky, Lexington, KY (J. Dvorak, L. Bryant)
5. A Rotary Test Fixture for Steady-State Position Error Modeling
Michael P. Sama, University of Kentucky, Lexington, KY (M.P. Sama, T.S. Stombaugh)
6. A Method for Fuel Efficiency Classification of Agricultural Tractors
Kyong U. Kim, Seoul National University, Seoul, Republic of Korea (K.U. Kim, C. Shin)
7. Design of a ultrasonic compound guass-profile horn for big form factor
Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, L. DaiQing)
8. A Survey on the Utilization of Agricultural Machinery in South Korea
Byounggap Kim, NAAS, RDA, Suwon, Republic of Korea (B. Kim, S. Shin, H. Kim, Y. Kim)
9. Delay times of a LiDAR-guided precision sprayer control system
Yue Shen, The Ohio State University, Wooster, OH (Y. Shen, H. Zhu, H. Liu, Y. Chen, E. Ozkan)
10. Real-time Tree Foliage Density Estimation with Laser Scanning Sensor for Variable-Rate Tree Sprayer Development
Yu Chen, The Ohio State University, Columbus, OH
PRESENTER: Erdal Ozkan (Y. Chen, H. Zhu, H. Liu, E. Ozkan)
11. Development of a fluorescent dyes as atmospheric tracers in aerial spray
Weicai Qin, NRIAM, Nanjing, China
PRESENTER: Yubin Lan (W. Qin, X. Xue, Y. Lan)
12. Development of an Selective Automated Blossom Thinning System for Peaches
David James Lyons, Pennsylvania State University,
University Park, PA (D. Lyons, P. Heinemann, J. Schupp, T. Baugher, J. Liu)
13. Teaching Precision Agriculture Technology with Modified Diesel Golf Cart
Hunter F. Massey, Clemson University, Clemson, SC (H.F. Massey, K.R. Kirk)
14. Determination of atmospheric stability for safe application of crop protection agents
Steven J. Thomson, USDA ARS, Stoneville, MS (S.J. Thomson, Y. Huang, B.K. Fritz, R. Fletcher, D.K. Fisher)
15. Remote Hydraulic Circuits for Zero Turning Radius Mowers
Kendall R. Kirk, Clemson University, Clemson, SC (K.R. Kirk, H.F. Massey, B.T. Woody)
16. Smooth Sliding Mode Control for Trajectory Tracking of Greenhouse Spraying Mobile Robot
Guoqin Gao, Jiangsu University, Zhenjiang, China (G. Gao)
17. An Oscillating and Non-oscillating Subsoiler Shanks and Their Influence on Traction Resistance and Soil Properties
Abdalla N. Osman, China Agricultural University, Beijing, China
PRESENTER: Dongling Zhang (A.N. Osman, D. Zhang)
18. Development of a High-efficiency Weeding Robot in the Crop Fields
Lie Tang, Iowa State University, Ames, IA (L. Tang, Y. Chen, J. Che, Y. Wang)
19. Intra-row weed recognition using plant spacing information in stereo images
Lie Tang, Iowa State University, Ames, IA (L. Tang, Y. Chen, X. Jin, J. Chen)
20. Spray performance of an experimental variable rate sprayer in commercial nurseries and vineyards
Yu Chen, The Ohio State University, Wooster, OH
21. Evaluation methods to verify the improvements in measuring soil physical properties by new fusion device using geostatistical analysis
22. Development and Evaluation of a Differential Lock Control System for a MF-399 Tractor
Mohammad Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran
PRESENTER: Mohammadahmeadi Maharlooei (M. Loghavi, M. Jalili, S. Kamgar)
Mohammad Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran
PRESENTER: Mohammadahmeadi Maharlooei (M. Loghavi, M. Maharlooei)
### Technical Sessions

#### SESSION 202
**PRECISION AGRICULTURE** - Sponsored by PM-54

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
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<tbody>
<tr>
<td>9:30AM</td>
<td>131596449</td>
<td>Effect of Ground Speed and Head Revolutions on the Picking Efficiency of Commercial Blueberry Harvester (M. Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran) PRESENTER: Mohammad Loghavi (M. Loghavi, H. Hoshmand)</td>
</tr>
<tr>
<td>9:45AM</td>
<td>131597637</td>
<td>Evaluation of Agricultural Field Machinery Data as a Potential and Beneficial Source for Big Data to Improve Agricultural Production Practices (M. De Kleine, M. Karkee, K. Lewis, Q. Zhang)</td>
</tr>
<tr>
<td>10:00AM</td>
<td>131602970</td>
<td>Development and Validation of Ordinary Least Squares Regression Models for Estimating Irrigated and Rainfed Maize and Soybean Yields (Yue Shen, The Ohio State University, Wooster, OH)</td>
</tr>
<tr>
<td>10:30AM</td>
<td>Break</td>
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<tr>
<td>10:45AM</td>
<td>1316021156</td>
<td>Orientation Sorting Mechanism Analysis and Device Design of Maize Seed in Vibration (Y. Gu, L. Xu)</td>
</tr>
</tbody>
</table>

#### SESSION 203
**ADVANCES IN PESTICIDE APPLICATION** - Sponsored by PM-23/6

<table>
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<tbody>
<tr>
<td>9:30AM</td>
<td>131617790</td>
<td>Construction of Alfalfa Yield Map using the Plunger Force of a Rectangular Hay Baler (M. Loghavi, Shiraz University, Shiraz, Iran) PRESENTER: Mohammad Loghavi (M. Loghavi, H. Hoshmand)</td>
</tr>
<tr>
<td>9:45AM</td>
<td>131621355</td>
<td>Comparison of Yield and Yield components of Maize in Uniform and Targeted-discrete Flame Weeding Methods (M. Loghavi, Shiraz University, Shiraz, Iran) PRESENTER: Mohammad Loghavi (M. Loghavi, F. Loni)</td>
</tr>
<tr>
<td>10:00AM</td>
<td>131594711</td>
<td>Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer (Heping Zhu, ATRU, South Carolina Coastal Plain Soils, USA)</td>
</tr>
<tr>
<td>10:30AM</td>
<td>Break</td>
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#### SESSION 204
**MODELING HYDROLOGY AND POLLUTANT TRANSPORT** - PART 1 - Sponsored by SW-21

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>9:30AM</td>
<td>131583129</td>
<td>Development of a real-time chemical injection system for air-assisted variable-rate sprayers (Yue Shen, The Ohio State University, Wooster, OH)</td>
</tr>
<tr>
<td>10:00AM</td>
<td>131583576</td>
<td>Global sensitivity analysis and parameter estimation for a quasi analytical model of canal-aquifer interaction applied in south Florida (I. Kisekka, University of Florida, Homestead, FL)</td>
</tr>
<tr>
<td>10:30AM</td>
<td>Break</td>
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<tr>
<td>11:00AM</td>
<td>131594711</td>
<td>Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer (Heping Zhu, ATRU, South Carolina Coastal Plain Soils, USA)</td>
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Location: NORTHRUP-SHERATON

Tuesday, July 23 - 9:30AM-12:00PM

### Advance in Pesticide Application

- **Session 203**
  - **Time**: 9:30AM - 12:00PM
  - **Location**: FREMONT-SHERATON
  - **Moderator**: Harold W. Thistle, USDA Forest Service, Morgantown, WV

#### Technical Sessions

- **Paper 131617790**
  - **Title**: Construction of Alfalfa Yield Map using the Plunger Force of a Rectangular Hay Baler
  - **Authors**: Mohammad Loghavi, Shiraz University, Shiraz, Iran

- **Paper 131621355**
  - **Title**: Comparison of Yield and Yield components of Maize in Uniform and Targeted-discrete Flame Weeding Methods
  - **Authors**: Mohammad Loghavi, Shiraz University, Shiraz, Iran

- **Paper 131594711**
  - **Title**: Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer
  - **Authors**: Heping Zhu, ATRU, South Carolina Coastal Plain Soils, USA

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Location: BENTON A-SHERATON

Tuesday, July 23 - 9:30AM-12:00PM

### Precision Agriculture

- **Session 202**
  - **Time**: 9:30AM - 12:00PM
  - **Location**: NORTHRUP-SHERATON
  - **Moderator**: TBA

#### Technical Sessions

- **Paper 131596449**
  - **Title**: Effect of Ground Speed and Head Revolutions on the Picking Efficiency of Commercial Blueberry Harvester
  - **Authors**: Aitzaz Farooque, Dalhouse University, Truro, NS, Canada

- **Paper 131597637**
  - **Title**: Evaluation of Agricultural Field Machinery Data as a Potential and Beneficial Source for Big Data to Improve Agricultural Production Practices
  - **Authors**: Joe D. Luck, University of Nebraska-Lincoln, Lincoln, NE

- **Paper 131594711**
  - **Title**: Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer
  - **Authors**: Heping Zhu, ATRU, South Carolina Coastal Plain Soils, USA

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Location: BENTON A-SHERATON

Tuesday, July 23 - 9:30AM-12:00PM

### Modeling Hydrology and Pollutant Transport

- **Session 204**
  - **Time**: 9:30AM - 12:00PM
  - **Location**: BENTON A-SHERATON
  - **Moderator**: Patricia Smith; Debabrata Sahoo, Woolpert Inc, Columbia, SC

#### Technical Sessions

- **Paper 131583129**
  - **Title**: Development of a real-time chemical injection system for air-assisted variable-rate sprayers
  - **Authors**: Yue Shen, The Ohio State University, Wooster, OH

- **Paper 131583576**
  - **Title**: Global sensitivity analysis and parameter estimation for a quasi analytical model of canal-aquifer interaction applied in south Florida
  - **Authors**: Isaya Kisekka, University of Florida, Homestead, FL

- **Paper 131594711**
  - **Title**: Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer
  - **Authors**: Heping Zhu, ATRU, South Carolina Coastal Plain Soils, USA

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**Technical Sessions**

- **Time**: 9:30AM - 12:00PM
- **Location**: FREMONT-SHERATON
- **Moderator**: Harold W. Thistle, USDA Forest Service, Morgantown, WV

#### Technical Sessions

- **Paper 131617790**
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- **Paper 131594711**
  - **Title**: Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer
  - **Authors**: Heping Zhu, ATRU, South Carolina Coastal Plain Soils, USA
## Technical Sessions

**Tuesday, July 23 - 9:30AM-12:00PM**

**SESSION 205**

EVALUATING CLIMATE VARIABILITY IMPACTS AND SEASONAL CLIMATE FORECASTS ON AGRICULTURE AND WATER RESOURCES - Sponsored by SW-21
Moderator: Vaishali Sharda, Washington State University, Prosser, WA

**LOCATION:** BENTON B-SHERATON

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:05AM</td>
<td>131585251</td>
<td>Effects of long-term fertility management on the splash erodibility of ferruginous soils</td>
</tr>
<tr>
<td>10:20AM</td>
<td>131596900</td>
<td>Study on the Model for Volume Estimation of Landslides Using 3-D Laser Scanner in Wenchuan Earthquake Area</td>
</tr>
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<td>10:35AM</td>
<td>Break</td>
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<tr>
<td>10:45AM</td>
<td>131597607</td>
<td>The Assessment of the Efficiency of different Soil Conservation Measures on an Agricultural Watershed Area in Okinawa, Japan: An Application of GeoWEPP Model</td>
</tr>
</tbody>
</table>

**Tuesday, July 23 - 9:30AM-12:50PM**

**SESSION 206**

SOIL EROSION RESEARCH - Sponsored by SW-22, SW-223
Moderator: Anita Thompson

**LOCATION:** VAN HORN A-SHERATON

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<tr>
<td>9:30AM</td>
<td>131596581</td>
<td>Modified Excess Shear Stress Model Parameters based on Mechanistic Predictions from a Detachment Rate Model</td>
</tr>
<tr>
<td>9:45AM</td>
<td>131596568</td>
<td>Application of Excess Shear and Mechanistic Detachment Rate Models for the Erodibility of Cohesive Soils</td>
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**Tuesday, July 23 - 9:30AM-12:00PM**

**SESSION 207**

AGRICULTURAL WATER MANAGEMENT - IRRIGATION AND DRAINAGE - Sponsored by SW-23
Moderator: Christopher Hay, South Dakota State University, Brookings, SD

**LOCATION:** VAN HORN B-SHERATON

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<tr>
<td>9:30AM</td>
<td>131596157</td>
<td>Groundwater availability for future agricultural production in Texas High Plains</td>
</tr>
<tr>
<td>9:45AM</td>
<td>131607629</td>
<td>Partitioning Evapotranspiration between Transpiration and Soil Evaporation in No-Till and Disk-Tilled Maize Fields</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131612436</td>
<td>Revising Crop Coefficient for Washington State Irrigation and Soil Water Balance Model</td>
</tr>
</tbody>
</table>
### Technical Sessions

**Tuesday, July 23 - 9:30AM-12:00PM**

#### SESSION 208

**ADVANCES IN IRRIGATION MANAGEMENT -**

- **10:30AM** 131593883 The Influence of Artificial Disturbance on Soil Carbon Content on Grassland
  Donghui Lu, China Agricultural University, Beijing, China (D. Lu, H. Shen, Y. Xu, C. Guo, G. Wang, D. Wang)
- **10:45AM** 131598421 Improving Urban Soil Infiltration and Vegetation Using Agronomy
  Richard A. McLaughlin, North Carolina State University, Raleigh, NC (R.A. McLaughlin, V.K. Brown, J. Heitman, B.L. Keys)
- **11:00AM** 131607943 Effect of Slow-Pyrolysis Biochar in Reducing Soil and Water Pollution from Sex Hormones in Poultry and Swine Manures
  Sanaz Alizadeh, McGill University, Montreal, QC, Canada (S. Alizadeh, S.O. Prasher)

**TIME**  **Paper #**  **Title/Authors**

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<tr>
<td>9:30AM</td>
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<td><strong>Introduction</strong></td>
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</table>
| 9:35AM | 131562633 | Combining GIS, Remote Sensing, and Simulation Modeling for Analyzing Precision Irrigation Water Management Strategies
  Kelly R. Thorp, USDA-ARS, Marcopolo, AZ, AZ (K.R. Thorp, D. Hunsaker, A. French, E. Bautista) |
| 9:50AM | 131587197 | Development and Evaluation of Evapotranspiration-Nitrogen Use Efficiency Index
  Daran Rudnick, University of Nebraska - Lincoln, Lincoln, NE (D. Rudnick, S. Irmak) |
| 10:05AM| 131594585 | Evapotranspiration and Crop Coefficients for Irrigated Soybean in the Southern High Plains
  Terry A. Howell, Conservation & Production Research Laboratory, Bushland, TX (T.A. Howell, S. Evett, J.A. Tolk, K.S. Copeland) |
| 10:20AM| 131595001 | New tools for ET estimation and irrigation management in specialty crops
  Lee Johnson, CSU Monterey Bay, Seaside, CA (L. Johnson, M. Cahn, F. Martin, F. Melton, C. Lund, B. Farrara, S. Benzen) |
| 10:35AM| 131598984 | Long-Term Center Pivot Irrigated Maize Evapotranspiration and Various Water Productivity Response to Water Under Full and Limited Irrigation and Rainfed Conditions
  Koffi Djaman, University of Nebraska-Lincoln, Lincoln, NE (K. Djaman, S. Irmak) |
| 11:00AM| 131619444 | Response of Drought-Tolerant and Conventiona Maize Hybrids to Different Irrigation Management Strategies
  Ali T. Mohammed, University of Nebraska-Lincoln, Lincoln, NE (A.T. Mohammed, S. Irmak, W. Kranz, S. Van Donk, D. Yonts) |
| 11:15AM| 131596776 | Development and Evaluation of a Leaf Monitoring System for Continuous Measurement of Plant Water Status
  Rajveer S. Dhillon, UC Davis, Davis, CA (R.S. Dhillon, F. Rojo, J. Roach, S. Upadhyaya) |
| 11:30AM| 131586228 | Nitrogen dynamics in soil and maize yield as affected by drip fertigation splits and rates in semi-humid region
  Yang Liu, China Agricultural University, Beijing, China (Y. Liu, J. Li, Y. Li) |

**Tuesday, July 23 - 9:30AM-12:00PM**

#### SESSION 209

**ENVIRONMENTAL IMPACTS OF LAND-USE CHANGE**

- **9:30AM** 131620808 Concepts in Holistic Watershed Processes
  Carolyn M. Jones, PE, USDA NRCS CA, Dixon, CA (C.M. Jones, PE)
- **9:50AM** 131620747 Uncertainty Evaluation of Land Use Change on SWAT Model Output
  Naresh Pal, University of Arkansas, Fayetteville, AR (N. Pal, D. Saraswat) |
- **10:05AM** 131620759 NPS pollution analysis in groundwater and streams of rural watersheds in western and southeastern Pampas, Argentina
- **10:20AM** Break

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  Carolyn M. Jones, PE, USDA NRCS CA, Dixon, CA (C.M. Jones, PE) |
| 9:50AM | 131620747 | Uncertainty Evaluation of Land Use Change on SWAT Model Output
  Naresh Pal, University of Arkansas, Fayetteville, AR (N. Pal, D. Saraswat) |
| 10:05AM| 131620759 | NPS pollution analysis in groundwater and streams of rural watersheds in western and southeastern Pampas, Argentina
| 10:20AM|         | Break                                                                         |

**Tuesday, July 23 - 9:30AM-12:00PM**

#### SESSION 210

**INFORMATION AND ELECTRICAL TECHNOLOGIES DIVISION POSTER SESSION -**

- **9:30AM** 131620908 Feasibility Study of Soil Heavy Metal Pb2+ Content Detection Using Terahertz Spectroscopy
  Bin Li, National Research Center of Intelligent Equipment for Agriculture, Beijing, China (B. Li, Z. Zhang, M. Wang, W. Guo) |
- **10:30AM** 131618865 Prediction of Moisture content in Maize leaves based on Near-infrared Spectroscopy
  Jifeng Ning, Northwest A&F University, Yangling, China (J. Ning, Y. Sun, W. Han, S. Chen) |
- **11:00AM** 131687326 Soft Sensor Modeling for Marine Protease Fermentation Process of LS-SVM based on Bayesian Criterria
  Yonghong Huang, Jiangsu University, Zhenjiang, China (Y. Huang) |
- **11:30AM** 131620239 Application of Information Technology for Precision Agriculture
  Xiaoyong Liu, Xinjiang Agricultural University, Xinjiang, China (X. Liu, X. Li) |
- **12:00AM** 131621326 Research on Application of Wireless Detecting Networks in Aquaculture
  Xingqiao Liu, Jiangsu University, Zhenjiang, China (X. Liu) |
- **12:30AM** 131623779 Improving Potassium Fertilizer Management for Chinese Kale
  Bai-Ge Zhang, Ministry of Agriculture, Beijing, China (B. Zhang) |
- **1:00AM** 131625498 Relationship Among Relative Light Intensity, Fruit Yield and Quality in the Canopy of Luntaibaixing
  Liao Kang, Xinjiang Agricultural University, Xinjiang, China (L. Kang) |
- **1:30AM** 131620529 A real time monitoring system for crop live root measurement
  Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, Y. Ju) |
- **2:00AM** 131620542 Development of weighing lysimeter to measure potted crop water use
  Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, C. Zhang) |

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  Liao Kang, Xinjiang Agricultural University, Xinjiang, China (L. Kang) |
| 1:30AM | 131620529 | A real time monitoring system for crop live root measurement
  Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, Y. Ju) |
| 2:00AM | 131620542 | Development of weighing lysimeter to measure potted crop water use
  Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, C. Zhang) |
Technical Sessions

SESSION 212 MACHINE VISION FOR AGRICULTURAL AUTOMATION AND MANAGEMENT - Sponsored by IET-312
Moderator: Won Suk (Daniel) Lee, Univ of Florida, Gainesville, FL
LOCATION: EMPIRE C-SHERATON

Time Paper # Title/Authors
9:30AM 131593729 Introduction
9:35AM 131618571 Online Tracking of Laying Hens Using a Sensor Fusion Approach
Akash D. Nakarmi, Iowa State University, Ames, IA
PRESENTEE: Lie Tang (A.D. Nakarmi, L. Tang, H. Xin)
9:50AM 131590327 A Sorting Method for Maize Haploid Based on Computer Vision
Zhanyuan Wu, China Agricultural University, Beijing, China
PRESENTEE: Peng Song (Z. Wu, J. Zhang, P. Song, W. Li, Y. Lan)
10:05AM 131598833 Fruits and Vegetables Volume Estimation by Machine Vision
Igathinathane Cannayen, North Dakota State University, Fargo, ND (I. Cannayen, H. Zerom, G.C. Bora, K. Nicholas, M. Sanderson, J. Hendrickson, W. Hoogmoed)
10:35AM 131615418 A microcontroller-based for seeds gravity angle measurement system
Yongjun Zheng, China Agricultural University, Beijing, China
(Y. Zheng, D. Zhan, F. Kang, Y. Tan, H. Wang, Y. Lan, S. Wang)
10:50AM Break
11:00AM 131618978 Development of a mobile in-orchard apple harvest aid and sorting system
Renu Lu, USDA-ARS, East Lansing, MI (R. Lu, A. Mizushima)

SESSION 213 COMPUTATIONAL METHODS, SIMULATIONS, AND APPLICATIONS - Sponsored by IET-217
Moderator: TBA
LOCATION: GILLHAM HALL-SHERATON

Time Paper # Title/Authors
9:30AM 131592907 Introduction
9:35AM 131598918 An Aggregated Crop Yield Index to Explore Regional Potential Production Capacity
10:05AM 131619546 Detecting sour skin diseased onions using a customized gas sensor array
Tharun kumar Kunduru, University of Georgia, Athens, GA (T. Kunduru, C. Li, G. Rains, R. Glatiss)
10:20AM Break
10:30AM 131576060 Pallet-wide temperature estimation and mapping for perishable food
Ricardo Badia, University of South Florida, Tampa, FL (R. Badia, E. Brecht, A. Lowe, I. Uysal)
10:45AM 131594252 Online tool for GR horseweed (Conyza canadensis) gene flow
Junming Wang, University of Illinois at Urbana-Champaign, Champaign, IL (J. Wang, H. Huang, R. Ye, Y. Peng, C.N. Stewart, D. Dubois, T.W. Sammis, D.R. Miller)

SESSION 214 BIO-IMAGING FOR AGRICULTURAL, BIOLOGICAL, AND FOOD APPLICATIONS - Sponsored by IET-312
Moderator: Suresh R. Neethirajan, Univ of Guelph, Guelph, ON, Canada
LOCATION: CHOUTEAU A-SHERATON

Time Paper # Title/Authors
9:30AM 1315953914 Machine Vision and Mechanism Combination Techniques for Seedlings Quality Evaluation Based on Leaf Area
Jinhua Tong, Zhejiang University, Hangzhou, China (J. Tong, H. Jiang)
9:30AM 131610521 Portable High-Power White LED Light for Candling Shell Eggs
Kurt C. Lawrence, USDA, ARS, Athens, GA (K.C. Lawrence, S. Yoon, D.R. Jones, W. Wang)

Tuesday, July 23 - 9:30AM-12:00PM

Tuesday, July 23 - 9:30AM-12:30PM

Tuesday, July 23 - 9:30AM-12:00PM
## Technical Sessions

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<tr>
<th>Time</th>
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| 10:20AM  | 131620675| Application of image based filtering to improve the performance of an automated lameness detection system for dairy cows  
Carlos Eduardo B. Romanini, KU Leuven, Leuven, Belgium  
| 11:00AM  | 131620890| Blueberry Orchard Site Specific Crop Management with Geospatial Based Yield Modeling  
Sudhanshu S. Panda, University of North Georgia, Oakwood, GA (S.S. Panda, G. Hoogenboom) |
| 11:30AM  | 131599825| Flow Rates Influence on Manure Ammonia Mitigation Using an Acid-Filled Gas-Permeable Membrane  
Amir M. Samani Majd, Texas A&M University, College Station, TX (A.M. Samani Majd, S. Mukhtar) |
| 11:45AM  | 131594519| Moisture effects on biofilter ammonia removal and nitrous oxide generation  
Liangcheng Yang, Univ. of Illinois, Urbana, IL (L. Yang) |
| 12:00PM  | 131605985| Ammonia scrubbing using an electrolyzed water spray scrubber  
Amir M. Samani Majd, Texas A&M University, College Station, TX (A.M. Samani Majd, A. Kalbasi, S. Mukhtar, G. Riskowski) |

### Tuesday, July 23 - 9:30AM-12:00PM

#### SESSION 215

**AIR QUALITY - MEASUREMENT AND MITIGATION OF POLLUTANTS FROM LIVESTOCK AND POULTRY HOUSING - PART 2**

- **Tuesday, July 23 - 9:30AM-12:00PM**

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<th>Time</th>
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| 9:30AM   | 131619756| Introduction  
An economic decision tool for calculating costs and benefits of air treatment technologies to manage odor and gases from animal feeding operations  
Kevin A. Janni, University of Minnesota, St. Paul, MN (K.A. Janni, W.F. Lazarus) |
| 9:50AM   | 131608601| Evaluation of Hot Weather Management Strategies for Pig Transport  
Yjie Xiong, University of Illinois, Urbana, IL (Y. Xiong, A.R. Green, R. Gates, J. Su) |

#### LOCATION: CHOUTEAU B-SHERATON

**SESSION 216 - ANIMAL RESPONSES AND ENVIRONMENTS -**

- **Tuesday, July 23 - 9:30AM-12:00PM**

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<th>Time</th>
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| 11:00AM  | 131619396| Effect of Light Color on Productive Performances of Female Broiler Breeders  
Xiaoshuang Wang, Zhejiang University, Hangzhou, China (X. Wang, J. Jiang, J. Pan, X. Chen) |
| 11:30AM  | 131619073| Effects of Air Velocity on Laying Hen Performance  
Tami M. Brown-Brandt, USDA-ARS-MARC, Clay Center, NE (T.M. Brown-Brandt, J.A. Nienaber, R. Eigenberg, H. Xin, M. Hayes) |
| 11:45AM  | 131619449| Behavior and production characteristics of female broilers under different yellow LED lighting intensities  
Minsu Lu, Zhejiang University, Hangzhou, China (M. Lu, Z. Lu, M. Zhang, Y. Yu, J. Pan) |

### Tuesday, July 23 - 9:30AM-12:00PM

#### SESSION 217

**AGRI-INDUSTRIAL FACILITIES DESIGN AND OPERATION -**

- **Tuesday, July 23 - 9:30AM-12:00PM**

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<th>Time</th>
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| 9:30AM   | 131599391| Discrete Element analysis of the discharge of biomass briquettes stored in bins  
Francisco Ayuga, Universidad Politecnica de Madrid, Madrid, Spain (F. Ayuga, C. Gonzalez-Monteliano, E. Gallego, A. Ramirez, J. Fuentes) |

### Tuesday, July 23 - 9:30AM-12:00PM

#### LOCATION: PERSHING SOUTH-WESTIN

**SESSION 222 - OPERATIONAL SERVICES -**

- **Tuesday, July 23 - 9:30AM-12:00PM**

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| 11:30AM  | 131620757| New Models for Describing Grain Packing  
Technical Sessions

Tuesday, July 23 - 9:30AM-12:00PM
SESSION 218 ANAEROBIC DIGESTION ADVANCES IN MANURE, FOOD AND ORGANIC WASTE - Sponsored by SE-412, FPE-707
Moderator: Conly L. Hansen, Utah State University, Logan, UT
LOCATION: PERSHING EAST-WESTIN

Time Paper # Title/Authors
9:30AM 131590357 Anaerobic Co-Digestion of Dairy Manure and Domestic Food Waste: Effects of Grinding Size and Organic Loading Rate Wendong Tao, State University of New York, Syracuse, NY (W. Tao, F. Aygeman, J. Han)
9:50AM 131618647 Improving the Value of Anaerobic Digestion Through Integration of Ammonia Recovery, Biomethane Production and Lignocellulosic Pretreatment Dennis A. Burke, Environmental Energy & Engineering Co., Olympia, WA (D.A. Burke)
10:05AM 131620924 Implementation of a Pilot Scale Anaerobic Digestor System for Swine Finishing Barn (Poster Session) Teng Lim, University of Missouri, Columbia, MO (T. Lim, B. Harvey, J. Zulovich)
10:20AM Break
10:30AM 131620949 Integrated solid state anaerobic digestion of spent mushroom substrates and corn stover for improving biogas production Jiying Zhu, Shandong University of Technology, Zibo, China (J. Zhu, M. Han, G. Zhang)
10:45AM 131590341 Anaerobic co-digestion of dairy manure and potato waste Sai K Reddy Yadnaparthi, University of Idaho, Twin Falls Research & Extension center, Twin Falls, ID (S. Yadnaparthi, L. Chen)
11:00AM 131620588 Food Waste Composting Nitrous Oxide as GHG Emission Subhash Paul, University of Guelph, Guelph, ON, Canada (S. Paul)

Tuesday, July 23 - 9:30AM-12:00PM
SESSION 221 EMERGING TECHNOLOGIES IN FOOD PROCESSING: PART 2 -
Moderator: Songming Zhu, Hangzhou, China
LOCATION: PENN VALLEY-WESTIN

Time Paper # Title/Authors
9:50AM 131620317 Biofilm inactivation by cold plasma Antje Fröhling, Leibniz Institute for Agricultural Engineering Potsdam-Bornim, Potsdam, Germany (A. Fröhling, A. Gajic, M. Baier, J. Ehlbeck, O. Schlüter)
10:05AM 131620462 Migration of Si from Coated multilayer polymeric films after Conventional and Microwave heating of food simulating liquid Kanishka Bhunia, Washington State University, Pullman, WA (K. Bhunia, S.S. Sablani, J. Tang, B. Rasco)
10:35AM Break
10:45AM 131595065 Effect of high pressure on inactivation of Escherichia coli in frozen suspension Guangming Su, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (G. Su, M. Zhou, J. He, Y. Yu, S. Zhu)
11:00AM 131620600 Farm Implement Safety Study in Rural Tennessee Harlin Wilkin, University of Tennessee at Martin, Martin, TN (H. Wilkin, S. Mehlhorn)
Tuesday, July 23 - 9:30AM-12:00PM

SESSION 224

POSTHARVEST PROCESSING AND FOOD SECURITY IN DEVELOPING COUNTRIES - Sponsored by FPE-702
Moderator: Klein E. ileleji, Purdue University, West Lafayette, IN
LOCATION: SHAWNEE-WESTIN

Poster # Paper # Title/Authors
9:30AM 131350991 Measurement of Combine Losses for Corn and Soybeans in Brazil
9:45AM 131350992 Engineering Appropriate Technology for the Haitian Mango Industry
Arthur A. Teixeira, University of Florida, Gainesville, FL (A.A. Teixeira)
10:05AM 131350993 Monitoring grain bed conditions during truck transportation of soybeans in Brazil
Jonathan W. Olsen, University of Illinois, Urbana, IL (J.W. Olsen, C. Wilhelm, D. Williams, J. Demarchi, R.S. Zordonadi, M. Danoa, R. Gates)
10:20AM 131350994 Quality Changes in Hermetic Stored Corn at Immediate Moisture Levels Under Subtropical Conditions - Hermetic Bottles Versus Hermetic Bags
Nda-Agyina Adua-Mensah, Purdue University, West Lafayette, IN (PRESENTER: Klein E. ileleji (N. Adua-Mensah, K.E. Ileleji))

Tuesday, July 23 - 9:30AM-12:00PM

SESSION 225

BIOTICAL ENGINEERING DIVISION POSTER SESSION -
Moderator: Christian Whysong, Virginia Tech, Blacksburg, VA
LOCATION: GILLHAM HALL-SHERATON

Poster # Paper # Title/Authors
35 131350995 Fed-Batch Fermentation for Human Lysozyme Production by Kluyveromyces lactis K7 in Biofilm Reactors
Duoyu Erkan, Pennsylvania State University, University Park, PA (D. Erkan, A. Demirci)
36 131350996 Recombinant Human Serum Albumin Extraction and Purification from Transgenic Rice Flour
Emma C. Brace, Kansas State University, Manhattan, KS (E.C. Brace, L.R. Wilken)
37 131350997 Thermal properties of lignocellulosic biomass barley straw
Kingsley L. Iroba, University of Saskatchewan, Saskatoon, SK, Canada (K.L. Iroba, L.G. Tabil, M. Venkatesh, B. Oon-Doo)
38 131350998 Environmental Life Cycle Assessment of Poly-3-hydroxybutyrate Production From Hybrid Poplar Leaves
William E. Hohenschuh, Oregon State University, Corvallis, OR (W.E. Hohenschuh, D. Kumar, S. Strauss, G.S. Murthy)
39 131350999 Evaluation of Aqueous Enzymatic Oil Extraction after Germ Wet Milling
Errin Ogle, Kansas State University, Manhattan, KS (E. Ogle, L.R. Wilken, T. Lohrmann, D. Hammes, Z. Nikolov)
40 131350990 Analysis of Phosphorus and Potassium removal during corn stover harvest
Dustin J. Schau, Iowa State University, Ames, IA (D.J. Schau, M.J. Darr)
41 131350991 Synergistic action of multiple enzymes for cellulose hydrolysis: stochastic molecular modeling and validation
Deepak Kumar, Oregon State University, Corvallis, OR (D. Kumar, G.S. Murthy)
42 131350992 Swine Wastewater Treatment Using Local Green Microalgal Strains
Bo Zhang, North Carolina A&T State University, Greensboro, NC (B. Zhang, L. Wang)
Technical Sessions

Tuesday, July 23 - 2:30PM-6:00PM

SESSION 230 HARVEST SYSTEMS FOR BIOMASS FEEDSTOCKS - Sponsored by PM-23/7/2

LOCATION: BENTON A-SHERATON

Time Paper # Title/Authors

2:30PM 131619135 Using Airborne Multispectral Imagery to Monitor Cotton Root Rot Progression in Fungicide-Treated Cotton Fields
Chenghai Yang, USDA-ARS, College Station, TX (C. Yang, G.N. Odvody, C.J. Fernandez, J. Landivar, R.R. Minzenmayer, R.L. Nichols)

2:35PM 131591676 Miscanthus and Switchgrass Harvesting Performance and Cost in Illinois
Sunil Mathanker, University of Illinois, Urbana-Champaign, IL (S. Mathanker, J. Maughan, T. Grifft, A. Hansen)

3:05PM 131538975 In-Field Performance of Round Balers Using DGPS
Sunil Mathanker, University of Illinois, Urbana-Champaign, IL (S. Mathanker, J. Maughan, T. Grifft, A. Hansen)

3:20PM 131595830 Reduction of Biomass and Cost in Illinois
Sunil Mathanker, University of Illinois, Urbana-Champaign, IL (S. Mathanker, J. Maughan, T. Grifft, A. Hansen)

3:35PM 131593241 Production Scale Single-pass Corn Stover Large Square Baling Systems
Keith Webster, Iowa State University, Ames, IA (K. Webster, M.J. Darr, J. Askey)

4:00PM 131596571 Impact of Blade Angle on Miscanthus Harvesting Energy Requirement
Justin Maughan, University of Illinois at Urbana-Champaign, IL (J. Maughan, S. Mathanker, T. Grifft, A. Hansen)

4:15PM 131618004 Technoeconomic Analysis of Single-Pass and Multi-Pass Corn Stover Bale Harvesting Systems
Sunil Mathanker, University of Illinois, Urbana-Champaign, IL (S. Mathanker, J. Maughan, T. Grifft, A. Hansen)

4:30PM 131618303 Integration of Yield Maps into Modeling of In-Field Logistics and Economics for Biomass Collection
Wesley Schaardt, University of Nebraska-Lincoln, Lincoln, NE (W. Schaardt, D.R. Keshwani, D. Jones, M. Wold, J.D. Luck)

4:45PM 131620174 Harvest of short rotation woody crops with a pull-type forage harvester
Philippe Savoie, Agriculture and Agri-Food Canada, Quebec, QC, Canada (P. Savoie, P. Hébert, P. Robert)

5:00PM 131592212 Influence of Harvesting Technology on Biomass Feedstock Logistics

Tuesday, July 23 - 2:30PM-5:00PM

SESSION 229 PRECISION AERIAL APPLICATIONS - Sponsored by PM-54

Moderator: Yubin Lan, USDA-ARS, College Station, TX
LOCATION: FREMONT-SHERATON

Time Paper # Title/Authors

2:30PM 131592573 Wind field measurement for the supplementary pollination using two types unmanned helicopter in hybrid rice breeding
Pei Wang, South China Agricultural University, Guangzhou, China (P. Wang, X. Luo, L. Hu, Z. Zhou, Y. Lan, Z. Zhang, J. He, Y. Yan)

2:50PM 131594784 Influence of droplet size and velocity on droplet impact process on waxy leaf Surfaces
Heping Zhu, ATRU, Wooster, OH (H. Zhu, X. Dong, Y. Yang)

3:05PM 131596020 Pesticide Application for UAV on Controlling Major Pests and Diseases on Rice
Xinyu Xue, NRIAM, Nanjing, China (X. Xue, W. Qin, Y. Lan)

3:20PM 131594839 Effect of Swirl Chamber Geometric Configuration on the Spray Cone Angle Characteristics of a Swirl Nozzle for Use on Equipment for Teaching Chemical Pesticide Application Technology
Adewumi Taiwo, Ladoke Akintola University of Technology, Ogbomoso, Nigeria (A. Taiwo)

3:35PM Break

4:00PM 131598742 A Two-Camera Imaging System for Pest Detection and Aerial Application
Chenghai Yang, USDA-ARS, College Station, TX (C. Yang, W.C. Hoffmann, D.E. Martin, Y. Lan, B.K. Fritz, J.K. Westbrook, C.P. Suh)

4:15PM 131598742 Uniform deposition and stable dispersal of cooking oil-in-water emulsion for efficient physical pest control
Zhigang Wang, USDA-ARS, College Station, TX (Z. Wang, Y. Lan, W.C. Hoffmann, Y. Wang, P. Wang)

4:30PM 131598742 Effect of nozzle type and mounting configuration around tree canopy on product coverage for Solid Set Canopy Delivery System
Zhigang Wang, Washington State University, Prosser, WA (A. Sharda, M. Karkee, Q. Zhang, I. Ewlanow)

4:45PM 131598742 Using Airborne Multispectral Imagery to Monitor Cotton Roots Progression in Fungicide-Treated Cotton Fields
Chenghai Yang, USDA-ARS, College Station, TX (C. Yang, G.N. Odvody, C.J. Fernandez, J. Landivar, R.R. Minzenmayer, R.L. Nichols)
### Technical Sessions

**Tuesday, July 23 - 2:30PM-4:05PM**

#### SESSION 231-A

**MACHINERY MANAGEMENT AND LOGISTICS -**
Sponsored by PM-43

**LOCATION:** BENTON B-SHERATON

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<td>2:30PM</td>
<td>Introduction</td>
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<tr>
<td>2:35PM</td>
<td>131620879</td>
<td>Impact of Machine Working Width and Tractor Turning Radius on Field Efficiencies&lt;br&gt;Santosh K. Pitta, The Ohio State University, Columbus, OH (S.K. Pitta, B.A. Schroeder, S. Shearer)</td>
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<tr>
<td>2:50PM</td>
<td>131596555</td>
<td>Assessment of Grain Harvesting System Productivity with the Aid of a Spreadsheet Tool&lt;br&gt;Justin Maughan, University of Illinois at Urbana-Champaign, Urbana, IL (J. Maughan, A. Hansen)</td>
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<td>3:20PM</td>
<td>Break</td>
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<tr>
<td>3:20PM</td>
<td>131597281</td>
<td>Current situation and influencing factors of large and medium tractors' updating in China&lt;br&gt;Xuifeng Lu, China Agricultural University, Beijing, China (X. Lu, Z. Zheng, B. Yang, Z. Gao, Z. Lou)</td>
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<td>3:35PM</td>
<td>13159925</td>
<td>Comparison of Subsurface Pressure Created by Radial Agricultural Tires and Agricultural Tracks&lt;br&gt;Benjamin R. Rothmel, Bridgestone Americas, Akron, OH (B.R. Rothmel, B.J. Harris)</td>
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**Tuesday, July 23 - 2:30PM-4:05PM**

#### SESSION 231-B

**MANAGEMENT, IMPACT AND SUSTAINABILITY OF PRECISION AGRICULTURE -**
Sponsored by PM-54

**LOCATION:** BENTON B-SHERATON

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<td>Introduction</td>
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<td>4:10PM</td>
<td>131594057</td>
<td>Influence of Management Strategies on Sustainability of Row Crop Production using the Field to Market Fieldprint Calculator&lt;br&gt;Lori A. Gibson, University of Tennessee, Knoxville, TN (L.A. Gibson, M. Buschermohle)</td>
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<td>4:25PM</td>
<td>131619612</td>
<td>Impact of Precision Agriculture in Mitigation of Climate Change in Upper Midwest&lt;br&gt;Ganesh C. Bora, North Dakota State University, Fargo, ND (G.C. Bora)</td>
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<td>4:40PM</td>
<td>131620929</td>
<td>Deployment of Life Cycle Assessment (LCA) for Evaluation of CO2 and Energy in Relation to Tractors Size, and Fuel Type&lt;br&gt;Britany A. Schroeder, The Ohio State University, Columbus, OH (B.A. Schroeder, S.K. Pitta, S. Shearer)</td>
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**Tuesday, July 23 - 2:30PM-5:00PM**

#### SESSION 232

**MODELING HYDROLOGY AND POLLUTANT TRANSPORT - PART 2 -**
Moderator: A. Pouyan Nejadhashemi, East Lansing, MI

**LOCATION:** VAN HORN C-SHERATON

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<td>Introduction</td>
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<td>2:35PM</td>
<td>131619759</td>
<td>Incorporation of DRAINMOD into SWAT to simulate watersheds dominated by tile drained agricultural land&lt;br&gt;Goelar Golmohammadi, McGill, Montreal, QC, Canada (G. Golmohammadi, S.O. Prasher, A. Madani, M. Youssef, R. Rudra)</td>
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<tr>
<td>2:50PM</td>
<td>131620374</td>
<td>Sensitivity of tile-drain catchment hydrology to tile and pothole parameterization&lt;br&gt;Charles Ikenberry, Iowa State University, Ames, IA (C. Ikenberry, M.L. Soupir, M.J. Helmers, P.W. Gassman, C. Jones)</td>
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**Tuesday, July 23 - 2:30PM-5:00PM**

#### SESSION 233

**ENVIRONMENTAL IMPACTS AND SUSTAINABILITY OF BIOENERGY PRODUCTION -**
Sponsored by SW-21

**LOCATION:** VAN HORN C-SHERATON

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<td>Introduction</td>
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<td>2:35PM</td>
<td>131589720</td>
<td>Stream Health Sensitivity to Landscape Changes due to Bioenergy Crops Expansion&lt;br&gt;A. Pouyan Nejadhashemi, Michigan State University, East Lansing, MI (A. Nejadhashemi, M. Einheuser, S. Wozniok)</td>
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<tr>
<td>2:50PM</td>
<td>131596490</td>
<td>Hydrology and Water Quality Impacts of Loblolly Pine (Pinus taeda) and Switchgrass ( Panicum virgatum) Intercropped Systems in Upland Southeastern Forested Watersheds&lt;br&gt;Erin M. Bennett, North Carolina State University, Raleigh, NC (E.M. Bennett, F. Birgand, G. Chescheir, E. Allen, T. Appelboom)</td>
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<tr>
<td>3:05PM</td>
<td>131598107</td>
<td>Impact of Bioenergy Crops Expansion on Water Quality in Agricultural Regions of Indiana&lt;br&gt;Suresh Sharma, Purdue University, West Lafayette, IN (S. Sharma, I. Chauby, C. Raj)</td>
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<tr>
<td>3:20PM</td>
<td>131607488</td>
<td>Impacts of bioenergy crop production and climate change on water quality&lt;br&gt;Hakkwan Kim, Mississippi State University, Starkville, MS (H. Kim, P.B. Parajuli)</td>
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<td>3:35PM</td>
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<td>3:45PM</td>
<td>131618471</td>
<td>Applicability of growing energy crops as BMPs in filter strip areas&lt;br&gt;Cibin Raj, Purdue University, West Lafayette, IN (C. Raj, I. Chauby, S. K p, M. White, J.G. Arnold)</td>
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<tr>
<td>4:00PM</td>
<td>131619577</td>
<td>Hydrological/Water quality impacts of perennial crop production on marginal land&lt;br&gt;Qingyu Feng, Purdue University, West Lafayette, IN (Q. Feng, I. Chauby, Y. Her, X. Wang, C. Boles)</td>
</tr>
<tr>
<td>4:15PM</td>
<td>131620329</td>
<td>Water quality impacts of switchgrass and miscanthus production on marginal land&lt;br&gt;Gurdeep Singh, University of Arkansas, Fayetteville, AR (G. Singh, D. Saraswat)</td>
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### Technical Sessions

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 234**
**CONTROL OF SEDIMENT AND ASSOCIATED STORMWATER CONTAMINANTS** - Sponsored by SW-22, SW-224, SW-223
Moderator: Jason R. Vogel, Oklahoma State University, Stillwater, OK
LOCATION: EMPIRE A-SHERATON

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<td>131605341</td>
<td>Estimation of the parameters that affect the formation and breakage of flocs formed in sediment runoff from construction sites</td>
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<td>2:50PM</td>
<td>131620629</td>
<td>The Use of Sweetgum Fruit (Liquidambar styraciflua) as an Effective Rill Erosion Control Treatment</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131620698</td>
<td>Evaluation of check dam products using a newly developed testing protocol</td>
</tr>
<tr>
<td>3:20PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:45PM</td>
<td>131620691</td>
<td>Applying Data from the Nebraska Tractor Test</td>
</tr>
</tbody>
</table>

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 235**
**INNOVATION SOLUTIONS/PRACTICES FOR REDUCING DISSOLVED N & P LOSSES FROM AGRICULTURAL FIELDS** - Sponsored by SW-21
Moderator: Yongping Yuan, EPA-Office of Research and Development, Las Vegas, NV
LOCATION: EMPIRE B-SHERATON

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30PM</td>
<td>131596692</td>
<td>Removal of soluble N and P from drainage water using an integrated denitrifying bioreactor and steel slag filter system</td>
</tr>
<tr>
<td>2:50PM</td>
<td>131620915</td>
<td>BMP Optimization Tool for Conservation Planners</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131596073</td>
<td>Yield and Nitrate Leaching in a Rainfed Maize Crop</td>
</tr>
<tr>
<td>3:20PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:45PM</td>
<td>131596591</td>
<td>Sediment and Phosphorus Loading from Protected and Unprotected Streambanks in Eastern Oklahoma</td>
</tr>
</tbody>
</table>

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 236**
**GEOMORPHOLOGY, STREAMBANK STABILITY, AND IN-STREAM PROCESSES** - Sponsored by SW-25, SW-232, SW-22, SW-224
Moderator: Carmen T. Aqoudnis, University of Kentucky, Lexington, KY
LOCATION: EMPIRE C-SHERATON

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30PM</td>
<td>131620552</td>
<td>Evaluation of the Conservational Channel Evolution and Pollutant Transport System (CONCEPTS) Applied to Composite Streambanks in the Ozark Highlands Ecocregion</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131607743</td>
<td>Use of Sediment Fingerprinting Technique to Identify Provenance of Suspended Sediments</td>
</tr>
<tr>
<td>3:20PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>3:45PM</td>
<td>131590586</td>
<td>Determination of soil nitrogen and organic carbon from near infrared reflectance with variable selection</td>
</tr>
</tbody>
</table>

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 237**
**ADVANCES IN IRRIGATION** - Sponsored by SW-24, SW-241, SW-243
Moderator: Dave Bjorneberg, USDA-ARS, Kimberly, ID
LOCATION: CHOUTEAU A-SHERATON

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30PM</td>
<td>131594348</td>
<td>Comparison of Sprinkler Droplet Size and Velocity Measurements using a Laser Precipitation Meter and Photographic Method</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131596337</td>
<td>Economical Design of Solid-Set Irrigation Systems Based on The Allowable Head Loss Concept</td>
</tr>
<tr>
<td>3:30PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>4:00PM</td>
<td>131587618</td>
<td>Narrow Grass Hedge Effects on Nutrient Loads Following Variable Swirly Swirl Applications</td>
</tr>
<tr>
<td>4:30PM</td>
<td>131593508</td>
<td>Wireless Sensor Network for Irrigation Scheduling</td>
</tr>
<tr>
<td>4:45PM</td>
<td>131594356</td>
<td>Calculating Friction Loss for Column Pipe When a Line Shaft is Present</td>
</tr>
<tr>
<td>5:00PM</td>
<td>131619572</td>
<td>Applying Data from the Nebraska Tractor Test Laboratory to Predict Industrial Diesel Engine</td>
</tr>
</tbody>
</table>
Tuesday, July 23 - 2:30PM-5:00PM

SESSION 238 ADVANCES AND APPLICATIONS IN MICROIRRIGATION - Sponsored by SW-24, SW-245
Moderator: Inge Bisconer, Toro Micro-Irrigation, El Cajon, CA

LOCATION: CHOUTEAU B-SHERATON

Time  Paper #  Title/Authors
2:30PM  2:35PM  Effect of flushing velocity and elapsed time on sediment transport in driplines
Jaume Puig-Bargués, University of Girona, Girona, Spain (J. Puig-Bargués, F.R. Lamm)

3:05PM  Effect of Nitrogen Management on Severely Deficit Subsurface Drip-Irrigated Corn
Freddie R. Lamm, Kansas State University, Colby, KS (F.R. Lamm, A. Schlegel)

3:20PM  Effect of Subsurface Drip Irrigation Capacity and Nitrogen Fertigation Timing on Corn Production
Freddie R. Lamm, Kansas State University, Colby, KS (F.R. Lamm, A. Schlegel)

Tuesday, July 23 - 2:30PM-5:00PM

SESSION 239 IMPORTANCE OF SOIL MECHANICS IN CONSERVATION SYSTEMS -
Moderator: Sherry L. Hunt, USDA ARS, Stillwater, OK

LOCATION: CHICAGO C-SHERATON

Soil mechanics plays a vital role in the success of conservation systems. The USDA-NRCS has had a long-standing role in using science-based technology to provide conservation planning and assistance to landowners and operators to benefit the soil, water, air, plants, and animal for productive lands and healthy ecosystems. The Soil Mechanics Center (NDCSMC) provides interdisciplinary technical support for design, construction, operation, and rehabilitation of complex engineering projects essential to resource conservation, environmental enhancement and agricultural. The NDCSMC in design and construction of conservation engineering structures and practices, and more specific topics related to design of compacted soil liners for agricultural waste storage structures, design of small embankment dams, filter design, and the identification and concerns with dispersive clay soils.

Invited Speakers:
- Steve Reinsch
- Keith Grotrian
- Steve Garner
- Jody Kraenzel
- Art Heibel
- Art Heibel
- Jody Kraenzel
- Steve Garner
- Keith Grotrian
- Steve Reinsch

Tuesday, July 23 - 2:30PM-5:00PM

SESSION 240 HYPER SPECTRAL IMAGING APPLICATIONS - PART 2 - BIO-PROPERTY -
Moderator: Seung Chul Yoon, US Department of Agriculture, Agricultural Research Service, Athens, GA

LOCATION: PERSHING SOUTH-WESTIN

Time  Paper #  Title/Authors
2:30PM  2:35PM  Introduction

2:50PM  Multispectral detection of Salmonella serotypes Enteritidis and Typhimurium colonies on agar plates from hyperspectral image analysis

3:05PM  3:20PM  Discrimination of Tomato Yellow Leaf Curl Disease using Hyperspectral Imaging
Jinzhu Lu, Zhejiang University, Hangzhou, China (J. Lu, D. Cui, H. Jiang)

SESSION 241 AGRICULTURAL APPLICATIONS OF WIRELESS NETWORKS -
Moderator: Joseph Dvorak, University of Kentucky, Lexington, KY

LOCATION: PERSHING NORTH-WESTIN

Time  Paper #  Title/Authors
2:30PM  Signal transmission and nodes deployment of a 2.4GHz wireless sensor network: A case study in a persimmon orchard
Wenting Han, Institute of Water Saving Agriculture in Arid Areas of China, Northwest A & F University, Yangling, China PRESENTER: Yi Wang (W. Han, Y. Wang, S.K. Ooi, C. Guo)

2:50PM  3:05PM  3:20PM  3:45PM  4:00PM  4:15PM  4:30PM  4:45PM  5:00PM
2.4GHz Radio Propagation Characteristics During Various Corn Growth Stages
Haixia Li, Oklahoma State University, Stillwater, OK PRESENTER: Ning Wang (H. Li, N. Wang)

Mobile Short Message Remote Control for Automatic Irrigation System
Zhenying Wei, Xi’an Jiaotong University, Xi’an, China (Z. Wei, Z. Huo, M. Zhang, B. Li, Y. Tao)

Development of Wireless Sensor Network for Environmental Monitoring in Peach Orchard
Wenting Han, Northwest A & F University, Yangling, China (W. Han, Z. Zhu, N. Wang)
### Technical Sessions

#### Tuesday, July 23 - 2:30PM-5:00PM

**SESSION 242**  
**SENSORS AND SYSTEMS FOR AGRICULTURAL AND ROBOTICS**  
- Sponsored by IET-318  
- Moderator: Qi Wang, Caterpillar Inc., Pittsburgh, PA  
- LOCATION: PERSHING EAST

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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</thead>
<tbody>
<tr>
<td>2:30PM</td>
<td>131593521</td>
<td>Three-Dimensional Reconstruction of a Dormant Tree Using RGB-D Cameras</td>
</tr>
<tr>
<td>2:35PM</td>
<td>131594020</td>
<td>Automated Sensing and Control of Hydroponic Macronutrients Using a Computer-controlled System</td>
</tr>
<tr>
<td>2:50PM</td>
<td>131615960</td>
<td>Development of the Second Generation of the Berry Impact Recording Device</td>
</tr>
<tr>
<td>3:05PM</td>
<td>131620302</td>
<td>Framework for Distributed Control of a Fleet of Agricultural Field Robots</td>
</tr>
<tr>
<td>3:20PM</td>
<td>131620400</td>
<td>Utilization of sensor technology for evaluating operator test weight methods in determining quality of grains and commodities</td>
</tr>
<tr>
<td>4:15PM</td>
<td>131620547</td>
<td>Soil Compaction Measurements with Smartphones</td>
</tr>
<tr>
<td>4:30PM</td>
<td>131620559</td>
<td>Investigation of Bluetooth Communications for Low-power Embedded Sensor Networks in Agriculture</td>
</tr>
<tr>
<td>4:45PM</td>
<td>131620436</td>
<td>Design of wireless sensor network node for greenhouse information acquisition</td>
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<tr>
<td>5:00PM</td>
<td>131592218</td>
<td>Design of wireless sensor network for greenhouse test weight methods in determining quality of grains and commodities</td>
</tr>
<tr>
<td>5:15PM</td>
<td>131620404</td>
<td>A remote monitoring system of soil sensor equipment based on WSN</td>
</tr>
</tbody>
</table>

#### Tuesday, July 23 - 2:30PM-5:10PM

**SESSION 243**  
**AIR QUALITY - MEASUREMENT AND MITIGATION OF POLLUTANTS FROM LIVESTOCK AND POULTRY AREA SOURCES - PART 1**  
- Sponsored by SE-305, SE-412  
- Moderator: Saqib Mukhtar, Texas A&M System, College Station, TX  
- LOCATION: PERSHING WEST-WESTIN

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>2:30PM</td>
<td>131621205</td>
<td>Pilot-Scale Field Study for Ammonia Removal</td>
</tr>
<tr>
<td>2:35PM</td>
<td>131593820</td>
<td>Comparison of a biofilter and a biotrickling filter in the removal of n-butyric acid</td>
</tr>
<tr>
<td>4:15PM</td>
<td>131593820</td>
<td>Comparison of a biofilter and a biotrickling filter in the removal of n-butyric acid</td>
</tr>
<tr>
<td>4:30PM</td>
<td>131620712</td>
<td>Characterization of Acid Wet Scrubber Effluents as Fertilizer</td>
</tr>
</tbody>
</table>

#### Tuesday, July 23 - 2:30PM-5:10PM

**SESSION 244**  
**ADVANCES IN GESTATION SYSTEMS AND EMERGING SWINE HOUSING ISSUES**  
- Sponsored by SE-404, SE-413  
- Moderator: Jay D. Harmon, Iowa State University, Ames, IA  
- LOCATION: PENN VALLEY-WESTIN

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>2:30PM</td>
<td>131617270</td>
<td>Swine Welfare: The Integration of Various Perspectives</td>
</tr>
<tr>
<td>2:35PM</td>
<td>131617272</td>
<td>Conversion to Group Housing for Sows: Integrator's Perceptive</td>
</tr>
<tr>
<td>3:15PM</td>
<td>131617272</td>
<td>Conversion to Group Housing for Sows: Integrator’s Perceptive</td>
</tr>
<tr>
<td>3:55PM</td>
<td>131594308</td>
<td>A review of sow housing and its implications for gestating sows</td>
</tr>
</tbody>
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**Technical Sessions Title**  
5:00PM 131593740 **Optimal Design of Combine Harvester Multiple Target Control Model**  
Xin Wang, China Agricultural University, Beijing, China (X. Wang)
<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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</thead>
</table>
| 4:40PM  | 131609277   | Geostatistics analysis for the environmental variables assessment in pigs reared under wean to finish barn during weaning phase  
  Daniella J. Moura, State University of Campinas, Campinas, Brazil (D.J. Moura, A.A. Maia, B. Medeiros, J.M. Massari, T.M. Carvalho) |
| 6PM     | 131595121   | Augmenting a Biological Systems Engineering Course by Examining the Ethics of Energy - Initial Outcomes from a Student Project  
  Kurt A. Rosentrater, Iowa State University, Ames, IA (K.A. Rosentrater) |
| 7PM     | 131595860   | Comparison of optimal wavelengths selection methods for visible/near-infrared prediction of apple firmness and soluble solids content  
  Qibing Zhu, Key Laboratory of Advanced Process Control for Light Industry (Ministry of Education), Jiangnan University, Wuxi, China (Q. Zhu, M. Huang, R. Lu, F. Mendoza) |
| Tuesday, July 23 - 2:30PM-5:00PM SESSION 245 INNOVATIVE SYSTEMS AND RESOURCE SAVING STRATEGIES IN CONTROLLED ENVIRONMENTS - Sponsored by SE-303  
| 2:30PM  | Paper #     | Title/Authors                                                                                     |
| 2:35PM  | 131589488   | The optimum operation conditions of a pumpkin powder extrudate. (Poster session)  
  Fu-Liang Hong, National Chung-Hsing University, Taichung, Taiwan (F. Hong, J. Peng, W. Lu) |
| 3:30PM  | 131588333   | Wireless Control Network for Variable Environment Control in a Greenhouse  
  Sin-Woo Kang, Chungnam National University, Daejeon, Republic of Korea (S. Kang, S. Chung, D. Lee, Y. Zhang, S. Hur, K. Han, S. Ha) |
| 3:35PM  | 131591924   | Moisture Balance Model for the Greenhouse Airspace in Cold Regions  
  Jingjing Han, University of Saskatchewan, Saskatoon, SK, Canada (J. Han, H. Guo, R. Brad, D. Waterer) |
| 3:45PM  | 131596429   | Natural Ventilated Augment Cooling (NVAC) Greenhouse  
  Yanhua Liu, College of Engineering, South China Agricultural University, Guangzhou, China (Y. Liu) |
| 4:00PM  | 131596939   | The variation of gelatinization of ingredients for piglet feed based on the expanding and pelletizing technology  
  Jie Yang, China Agricultural University, Beijing, China (J. Yang, H. Li, H. Wang, L. Wang) |
| 4:40PM  | 131596079   | Measurement and Documentation of Grain Loss during Harvest, Transportation and Storage in Brazil  
| 5:00PM  | 131596116   | Effects of Grain Quality in the Dry Grind Ethanol Process  
  Lauren Delaney, University of Illinois, Urbana-Champaign, Urbana, IL (L. Delaney, D. Ramchandran, B.C. Vidal, R. Prata, K. Rausch, M.E. Tumbleson, V. Singh) |
| 5:20PM  | 131584484   | Analysis of Differently Roasted Arabica Coffee Samples by Electronic Tongue  
| 5:30PM  | 13158387    | Adhesion and physicochemical properties of soy protein adhesives modified by sodium bisulfate  
  Guangyan Qi, Kansas State University, Manhattan, KS (G. Qi, N. Li, D. Wang, X.S. Sun) |
| 5:45PM  | 131596051   | Detection of Sucrose Content of Sugar Beet by Visible/near-infrared Spectroscopy  
  Xinmiao Wang, Pennsylvania State University, University Park, PA (X. Wang, A. Demirci, V.M. Puri, R.E. Graves) |
| 6:00PM  | 131589482   | The Effect of Glucose on Electronic Taste Analyzer  
  Jie Yang, China Agricultural University, Beijing, China (J. Yang, H. Li, H. Wang, L. Wang) |
| 6:15PM  | 131591925   | The Optimum Operation Conditions of a GABA Tea Powder Extrudate  
  Jinchayu Peng, National Chung-Hsing University, Taichung, Taiwan (J. Peng, D. Tang, F. Hong) |
| 6:30PM  | 131589485   | Effects of fermentation time and seasons on the α-aminobutyric acid and glutamic acid contents of TTES-13 and Oolong GABA tea (Poster Session)  
  Ming-Yuan Lee, National Chung-Hsing University, Taichung, Taiwan (M. Lee, J. Peng) |
| 6:45PM  | 131596428   | The optimum operation conditions of a pumpkin powder extrudate. (Poster session)  
  Fu-Liang Hong, National Chung-Hsing University, Taichung, Taiwan (F. Hong, J. Peng, W. Lu) |
| 7:00PM  | 131596951   | Low-Moisture Anhydrous Ammonia (LMAA) Pretreatment of Corn Distillers Dried Grains with Solubles (DDGS)  
  Weiwei Zhang, Iowa State University, Ames, IA (W. Zhang, M. Yang, K.A. Rosentrater) |
| 7:15PM  | 131595145   | The Effect of Glucose on Electronic Taste Analyzer  
  Andras Fekete, Corvinus University of Budapest, Budapest, Hungary (A. Fekete, D. Szollosi, Z. Kovács, E. Várvolgyi) |
| 7:30PM  | 131595151   | Low-Moisture Anhydrous Ammonia (LMAA) Pretreatment of Corn Stover  
  Minliang Yang, Iowa State University, Ames, IA (M. Yang, W. Zhang, K.A. Rosentrater) |
| 7:45PM  | 131595139   | Bioprocessing of Soy Products to Improve Nutritional Value  
  Nitya Poovaiah, Iowa State University, Ames, IA (N. Poovaiah, B. Lamsal, K.A. Rosentrater) |
Technical Sessions

21 131619683 Diffusion of Sugar from Sweet Sorghum For Use in a Dual Feedstock Process
Naveen Pesessi, Oklahoma State University, Stillwater, OK (N. Pesessi, D. Bellmer, H.K. Aliyeh, G. Kakani)

22 131619710 Microwave-assisted hydrothermal treatment and modified atmosphere packaging to maintain postharvest quality of Saladette tomatoes
Maria E. Sosa-Morales, Universidad de las Americas Puebla, San Andres Cholula, Mexico (M.E. Sosa-Morales, C.M. Notario-Medellín)

23 131619922 Addition of spearmint essential oil as natural antioxidant in palm olein for repeated frying
Maria E. Sosa-Morales, Universidad de las Americas Puebla, San Andres Cholula, Mexico (M.E. Sosa-Morales, M.J. Sánchez-Dichi)

24 131620149 Demonstration of an Algae-based System for Carbon Sequestration
Carla Rodrigues, University of Kentucky, Lexington, KY (C. Rodrigues, M. Montross, S. Nokes, B. Lynn)

25 131620198 Field Measurement of Packing in Stored Grain

26 131620228 Challenges and opportunities in the use and industrial application of food dehydration pretreatments
Litha Sivanandan, West Virginia University, Morgantown, WV (L. Sivanandan, A. Smith, P. Mallikarjunan, B. Kenney)

27 131620346 Using Neutron Thermalization to Determine the Dry-Matter Content of Baled Biomass
William Adams, University of Kentucky, Lexington, KY (W. Adams, M. Montross, A. Turner, J. Jackson)

28 131620476 Demonstration of an Algae-based System for Carbon Dioxide Mitigation for a Coal-fired Power Plant
Czarena Crofcheck, University of Kentucky, Lexington, KY (C. Crofcheck, M. Montross, R. Andrews, M. Crocker, J. Groppo, M. Wilson)

29 131620893 Automatic Inspection System for Processing Tomatoes

30 131621248 Effects of biological pretreatment on pyrolysis behaviors of corn stalk by TG-TGIR technique
Tipeng Wang, North China Electricity Power University, Beijing, China (T. Wang, Z. Mao)

31 131668445 Hydration Characteristics of Different Varieties of Paddy Rice from West Africa
Chijioke K. Ejibe, McGill University, Montreal, QC, Canada (C.K. Ejibe, M.O. Ngadi)

32 131668457 Rheological Characterization of Some Selected West-African Rice Varieties
Chijioke A. Nwankpa, McGill University, Montreal, QC, Canada PRESENTER: Michael Ngadi (C.A. Nwankpa, M.O. Ngadi)

33 131618748 Performance and mechanism of H2S removal from biogas by biochar made from anaerobically digested dairy waste
Quanbao Zhao, Washington State University, Pullman, WA (Q. Zhao, J. Lu, M. Smith, C. Frear)

34 131618714 The Selective Removal of H2S over CO2 from Biogas in a Bubble Column Using Pretreated Digestor Effluent
Craig Frear, Washington State University, Pullman, WA (C. Frear, N. Kennedy, Q. Zhao)

35 131620804 Effect of pH and media composition on CO2 and H2 fermentation using Clostridium carboxidivorans
Mark R. Wilkins, Oklahoma State University, Stillwater, OK (M.R. Wilkins, X. Zhu, H.K. Aliyeh, R.S. Lewis, R.L. Huhnke)

36 131619931 A Preliminary Study of Helmholtz Resonant for Measurement of Watermelon Volume
Huani Chen, Zhejiang University, Hangzhou, China (H. Chen, H. Xu, X. Rao, N. Kondo, J. Bao)

37 131593409 Reducing Post-Harvest Grain Losses for Subsistence Farmers
Floyd Dowell, USDA ARS CGAHR, Manhattan, KS (F. Dowell)

38 131671220 Hyperspectral Imaging-based Classification and Wavebands Selection for Internal Defect Detection of Pickling Cucumbers
Haiyan Cen, Michigan State University, East Lansing, MI (H.C. Cen, R. Lu, F.A. Mendoza)

39 131586998 Influence of Distance between Optical Fiber Probe and Sample on Pork Quality Detection Results
Yuanyuan Liu, China Agricultural University, Beijing, China (Y. Liu, Y. Peng)

40 131586888 An Imaging System for Predicting Meat Yield of the Pig based on Optical Vision Technology
Jingjing Chen, China Agricultural University, Beijing, China (J. Chen, Y. Peng)

41 131586960 A Portable System for Prediction of Pork Freshness using Multispectral Imaging Technology
Culling Li, China Agricultural University, Beijing, China (C. Li, Y. Peng, X. Tang)

42 131587022 Nondestructive Detection of Pesticide Residue Concentration in Apple by Raman Spectral Technology
Sagar Dhakal, China Agricultural University, Beijing, China PRESENTER: Yankun Peng (S. Dhakal, Y. Li, Y. Peng, L. Guo)

43 131585729 Flow Behavior of Wheat with Impurities
Qi Bian, Kansas State University, Manhattan, KS (Q. Bian, K. Ambrose)

44 131673921 Effect of Acid Hydrolysis on Functional Properties of Starch Isolate from Banana (Musa paradisica)
Bhavnita Dhillon, Guru Nanak Dev University, Amritsar, India (B. Dhillon, N.S. Sohdi, M. Yadav, N. Singh)

45 131580866 Thermal Transition Characteristics of Crude Palm Oil0
Joseph S. Alakali, University of Agriculture, Makurdi, Makurdi, Nigeria (J.S. Alakali, M.O. Ngadi, S.O. Eze)

46 131647964 A Kinetic Model of Simultaneous Saccharification and Fermentation for Rice Wine Brewing with Whole Rice Flour under Oxygen-Limited Conditions
Dengfeng Liu, Univ of Missouri, Columbia, MO (D. Liu)

47 131596933 Spraying efficiency of slightly acidic electrolyzed water for reducing foodborne pathogens and natural microflora on shell eggs
Zhihui Yan, China Agricultural University, Beijing, China (Z. Yan, L. Ni, B. Li, W. Cao, W. Zheng)

48 131591346 Air impingement drying characteristics and model of Chinese jujube
Zheng Lou, China Agricultural University, Beijing, China (Z. Lou, H. Xiao, Z. Gao)

49 131591010 Application of VIS-SW-NIR Spectroscopy for Detecting Adulteration in Fresh Minced Beef
Xiaoyu Tian, China Agricultural University, Beijing, China PRESENTER: Yang Xu (X. Tian, Y. Xu, Y. Peng, X. Tang)

50 131596941 Optimization of bio-crude oil from hydrothermal liquefaction of microalgae using response surface methodology
Chao Gai, Shandong University, JINAN, China (C. Gai, Y. Zhang, W. Chen, P. Zhang, Y. Dong)

51 131597678 Near-infrared reflectance spectroscopy for predicting free water content of beef
Ming Tang, China Agricultural University, Beijing, China (M. Tang, Y. Xu, Y. Peng, X. Tian)

52 131590805 Characterization of beta cyclodextrin inclusion complexes of thymol and thymol oil for antimicrobial delivery applications
Feifei Tao, China Agricultural University, Beijing, China PRESENTER: Yankun Peng (F. Tao, L. Hill, Y. Peng, C.L. Gomes)
# Technical Sessions

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 247**

**FOOD SAFETY ENGINEERING: PART 1** - Sponsored by FPE-703

Moderator: Latha Sivanandan, West Virginia University, Morgantown, WV; Oliver K. Schlüter, Leibniz Institute for Agricultural Eng, Potsdam, Germany

**LOCATION: SHAWNEE-WESTIN**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Authors</th>
</tr>
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<tbody>
<tr>
<td>3:00PM</td>
<td>131592785</td>
<td>Disinfection of Synthetic Municipal Wastewater Effluent by Pulsed UV-Light Treatment</td>
<td>Gulsad Uslu, Firat University, Elazig, Turkey (G. Uslu, A. Demirci, J.M. Regan)</td>
</tr>
<tr>
<td>3:30PM</td>
<td>131594214</td>
<td>Evaluation of Electrolyzed Oxidizing Water for Cleaning-In-Place of On-Farm Milking Systems</td>
<td>Xinhua Wang, Pennsylvania State University, University Park, PA (X. Wang, S.R. Dev, A. Demirci, R.E. Graves, V.M. Puri)</td>
</tr>
<tr>
<td>3:45PM</td>
<td>131620817</td>
<td>Innovative concepts to inactivate microorganisms related to herbs and spices</td>
<td>Oliver Schlüter, Leibniz Institute for Agricultural Engineering Potsdam-Bomim, Potsdam, Germany (O. Schlüter, K. Reineke, B. Erdogdu, J. Ehlecke, A. Fröhling)</td>
</tr>
</tbody>
</table>

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 248**

**PHYSICAL PROPERTIES OF BIOMASS FOR PROCESSING AND SAFETY** - Sponsored by FPE-701, FPE-709, 1-11

Moderator: Lope G. Tabil, Univ of Saskatchewan, Saskatoon, SK, Canada

**LOCATION: MISSION-WESTIN**

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<tr>
<td>3:00PM</td>
<td>131592240</td>
<td>Effect of Processing Conditions on Yield of Screw Press Expressed Palm Oil</td>
<td>John C. Olajide, Ladoke Akintola university of Technology, Ogbomoso, Nigeria (J.O. Olajide, O.A. Adetola, A.P. Olalusi)</td>
</tr>
<tr>
<td>3:30PM</td>
<td>131595387</td>
<td>Effect Prediction Model and Process Optimization of the Cooling Processing of Pellet Fuel</td>
<td>Jie Yang, China Agricultural University, Beijing, China (J. Yang, H. Wang)</td>
</tr>
<tr>
<td>3:45PM</td>
<td>131619855</td>
<td>Thermal properties of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains</td>
<td>Ke Zhang, Kansas State University, Manhattan, KS (K. Zhang, L. Johnson, R. Nelson, W. Yuan, Z. Pei, D. Wang)</td>
</tr>
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</table>

**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 249**

**PRODUCTION, PROCESSING & CONVERSION OF ALGAE FOR BIOFUELS** - Sponsored by FPE-709, T-11, BE-28

Moderator: Kasiviswanath Muthukumarappan, Brookings, SD

**LOCATION: LIBERTY-WESTIN**

<table>
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<tr>
<td>2:30PM</td>
<td>131580735</td>
<td>Friction Coefficients of Alfalfa Grind as affected by Particle Size and Moisture Content</td>
<td>Lei Guo, China Agricultural University, Beijing, China (L. Guo, D. Lu, Y. You, D. Wang, G. Wang)</td>
</tr>
<tr>
<td>2:35PM</td>
<td>131594214</td>
<td>In situ Conversion of Microalgal Lipids for Biodiesel Synthesis</td>
<td>Zheting Bi, University of Idaho, Moscow, ID (Z. Bi)</td>
</tr>
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<td>3:05PM</td>
<td>131594752</td>
<td>Membrane Filtration of Bluegreen Algae by Flocculation</td>
<td>M. Ramanathan, Z. Gu, K. Muthukumarappan. Agricultural and Biosystems Engineering, South Dakota State University, Brookings SD 57007</td>
</tr>
<tr>
<td>3:20PM</td>
<td>131619775</td>
<td>Assessment of Converting Waste-fed Algae into Biocrude Oil via Hydrothermal Liquefaction: Product Distribution, Composition and Characterization</td>
<td>Xinmiao Wang, China Agricultural University, Beijing, China (X. Wang, S.R. Dev, A. Demirci, R.E. Graves, V.M. Puri)</td>
</tr>
<tr>
<td>3:45PM</td>
<td>131620238</td>
<td>An investigation into the efficacy of ozone for inactivation of microalgae cells in photobioreactors</td>
<td>Rachel Clarke, University College Dublin, Dublin, Ireland (R. Clarke, P. Solan, B. Tiwari, C. O'Donnell, T.P. Curran)</td>
</tr>
<tr>
<td>4:00PM</td>
<td>131619732</td>
<td>Cultivation of Nannochloropsis Salina in Diluted Anaerobic Digestor Effluent under Simulated Seasonal Climatic Conditions and in Open Raceway Ponds</td>
<td>Rachel Clarke, University College Dublin, Dublin, Ireland (R. Clarke, P. Solan, B. Tiwari, C. O'Donnell, T.P. Curran)</td>
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<tr>
<td>4:15PM</td>
<td>131590220</td>
<td>A Bench-scale study of biomass production by Chlorella pyrenoidosa cultivated in anaerobic poultry waste effluent</td>
<td>Yu Wu, China Agricultural University, Beijing, China (Y. Wu, W. Cao, M. Wang, B. Li, Y. Zhang)</td>
</tr>
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**Tuesday, July 23 - 2:30PM-5:00PM**

**SESSION 250**

**NON-DESTRUCTIVE TEXTURE EVALUATION OF HORTICULTURAL PRODUCTS** - FPE-701

Moderator: Izhak E. Shmulevich, Technion, Haifa, Israel

**LOCATION: CHICAGO A-SHERATON**

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<td>4:00PM</td>
<td>131619433</td>
<td>Hydraulic Conductivity of Baled Biomass</td>
<td>Neal A. Yancey, Idaho National Laboratory, Idaho Falls, ID (N.A. Yancey, C.T. Wright, J.S. Tumuluru)</td>
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<td>4:15PM</td>
<td>131620406</td>
<td>An empirical model to predict infiel thin layer drying rate of cut switchgrass</td>
<td>Amit Khanchi, Oklahoma State University, Stillwater, OK (A. Khanchi, C. Jones, R.L. Huhntie)</td>
</tr>
<tr>
<td>4:30PM</td>
<td>131620076</td>
<td>Research on Mechanics Models of Alfalfa Stem</td>
<td>Lei Guo, China Agricultural University, Beijing, China (L. Guo, D. Lu, D. Wang, G. Wang)</td>
</tr>
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</table>
Technical Sessions

Tuesday, July 23 - 4:00PM-6:30PM
SESSION 251

BIOENERGY DAY - SPECIAL PROGRAMMING

Moderator: Ray Huhnke, Oklahoma State University
LOCATION: CENTURY BALLROOM A&B-VESTIN

NEW FRONTIERS IN ENERGY - POSTER SESSION -
Sponsored by T-11, T-12, FPE-709, BE-28, SE-414
Moderator: Ganti S. Murthy, Oregon State University, Corvallis, OR
LOCATION: GILLHAM HALL-SHERATON

Poster # Paper # Title/Authors
53 131610492 The BioCentury Research Farm: Accelerating Biomass Production and Conversion Research, Development, and Outreach
Darren Jarboe, Iowa State University, Ames, IA (D. Jarboe, L.A. Johnson, A.A. Suby)
54 131592152 Consumer Awareness, Use, and Perceptions of Biodiesel
Don Johnson, University of Arkansas, Fayetteville, AR (D. Johnson, D.W. Edgar, L.D. Edgar)
55 131595840 Dairy Farm Retro-commissioning
Jennifer Brinker, GDS Associates, Inc., Madison, WI (J. Brinker, M. Bergum)
56 131580588 Demonstration Scale Roll Press Compaction of Corn Stover and Corn Cobs
Nalladurai Kaliyan, University of Minnesota, Saint Paul, MN (N. Kaliyan, R. Morey, D.R. Schmid)
57 131593871 Effect of process parameters on the densification of rice husk at medium pressures
Mohammed Bakari, McGill University, Ste-Anne-de-Bellevue, QC, Canada (M. Bakari, M.O. Ngadi)
58 131620783 Use of Standardized Work Elements Models vs. Discrete Event Simulation Models to Analyze Parallel and Multiphase Transportation Processes in Corn Silage Harvesting
Remigio Berruto, UNITO, Grugliasco, Italy (R. Berruto, P. Busato, K. Heitkäper, A. Wagner, M. Schick)
59 131620357 Scenario optimization approach for designing biomass supply chain
Bhavna Sharma, Oklahoma State University, Stillwater, OK (B. Sharma, R. Ingalls, C. Jones, R. Huhnke)
60 131594248 Pretreatment for the removal of manure fiber recalcitrance to enhance enzyme saccharification
Sasikumar Elumalai, University of Wisconsin-Madison, Madison, WI (S. Elumalai, A. Rosa-Espinosa, T. Runge, J. Markley)
61 131594253 Investigation of Alkaline Hydrogen Peroxide Pretreatment for its Use in an On-Farm Butanol Bioprocessing Facility
Kathryn Gray, University of Kentucky, Lexington, KY (K. Gray, S. Nokes, M. Montross, A. Modenbach, J. Jackson)
62 131608058 Advances in Woody Biomass Drying via improved Particle-Level Design Data
Christopher Lanning, Forest Concepts, LLC, Auburn, WA PRESENTER: David Lanning (C. Lanning, D. Lanning, J. Fridley)
63 131592305 A novel continuous oil seed extraction method by green solvent-assisted extrusion technology
Parisa Fallahi, South Dakota State University, Brookings, SD (P. Fallahi, K. Muthukumarapalan)
64 131618066 Effects of torrefaction and densification on quality of syrups generated from fluidized-bed gasification of switchgrass
Ajay Kumar, Oklahoma State University, Stillwater, OK (A. Kumar, M. Sarkar, J. Tumuluru, K.N. Patil, D. Bellmer, R.L. Huhnke)
65 131610317 Evaluation of operating condition and biomass type effects on an updraft biomass gasifier
Arthur M. James, North Carolina State University, Raleigh, NC (A.M. James, W. Yuan)

Abstracts for these presentations are available online at the ASABE website.
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<td>83</td>
<td>Impact of brilliant yellow on the synthesis and structure of Glucanocellulase xylinus cellulosae</td>
<td>Yuanyuan Weng, Penn State University, University Park, PA (Y. Weng, J.M. Catchmark)</td>
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<td>84</td>
<td>Immobilization of Trichoderma aureoviride in Ca-alginlate Gel Beads for Cellulase Production</td>
<td>Yannu Cui, Jili Academy of Agriculture Science, Changchun, China (Y. Cui, M. Zhang, X. Liu, R. Zhang, Y. Zang)</td>
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<td>85</td>
<td>Influence of Weak Acids on Butanol Fermentation by Clostridium Saccharoperbutylacetonicum</td>
<td>Quan Zhou, North Carolina State University, Raleigh, NC (Q. Zhou, W. Yuan)</td>
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<td>86</td>
<td>Effects of Silage Pretreatment on the Anaerobic Digestion of Different Parts of Water Hyacinth</td>
<td>Yehua Xia, Biosystems Engineering, Hangzhou, China (Y. Xia, S. Kuichuan, R. Klos, Z. Chen, R. Zhou)</td>
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<td>88</td>
<td>Multi-Utilization of Livestock Manures as a Bioenergy Feedstock</td>
<td>Keri Cantrell, USDA ARS, Florence, SC (K. Cantrell)</td>
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<td>89</td>
<td>Improved anaerobic digestion of municipal wastewater via routine bioaugmentation of the acid phase in a two-phase digestion system</td>
<td>Peng Li, University of Illinois at Urbana Champaign, Urbana, IL (P. Li, L. Schildeman)</td>
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<td>90</td>
<td>The Ketogenic Microbial Fuel Cell: Alternative Energy Production thru Biomimicry of a Dietary Epilepsy Therapy</td>
<td>Ingrid K. Loesch, The Ohio State University, Columbus, OH (I.K. Loesch)</td>
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<td>91</td>
<td>Electrical field amplified microbial fuel cells</td>
<td>Reed Walter, The Ohio State University, Columbus, OH (R. Walter, T.A. Bower, A.D. Christy)</td>
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<tr>
<td>92</td>
<td>Effect of Moisture Content and Storage Conditions on the Methanogenic Activity of Anaerobic Sludge</td>
<td>Jiajia Li, University of California, Davis, CA (J. Li, R. Zhang)</td>
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<tr>
<td>93</td>
<td>A new air-cathode design for use with microbial fuel cells</td>
<td>Andrew Miller, The Ohio State University, Columbus, OH (A. Miller, J. Adar, A. Culbertson, T.A. Bower, A.D. Christy, G. Kalentuc)</td>
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<tr>
<td>94</td>
<td>Optimization and Comparison of Growth of Bluegreen Algae in Coiled and Bubble Column Photobioreactor</td>
<td>M. Ramanathan, K. Muthukumarappan, Department of Agricultural and Biosystems Engineering South Dakota State University, Brookings, SD, 57007</td>
</tr>
<tr>
<td>95</td>
<td>Study of Audible Sound Effect on Algae Growth</td>
<td>Weiming Cai, Zhejiang University, Hangzhou, China (W. Cai, N. Wang, N.T. Dunford, S. Zhu, H. He)</td>
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<tr>
<td>96</td>
<td>Biomass element balancing and media calculations for cyanobacteria</td>
<td>Jayasurya Vijayakumar, South Dakota state university, Brookings, SD (J. Vijayakumar, G.A. Anderson, S. Gent, A. Rajendran)</td>
</tr>
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<td>97</td>
<td>The Impact of Air Flow Rate on Photobioreactor Sparger/Diffuser Bubble Size(s) and Distribution</td>
<td>Gary A. Anderson, South Dakota state university, Brookings, SD (G.A. Anderson, S. Gent, A. Komkareddy, G. Bari)</td>
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<tr>
<td>98</td>
<td>Light in a photobioreactor</td>
<td>Anand Rajendran, South Dakota State University, Brookings, SD (A. Rajendran, G.A. Anderson, S. Gent, X. Yan, J. Vijayakumar)</td>
</tr>
</tbody>
</table>
Tuesday, July 23 - 2:30PM-5:00PM
SESSION 252
INNOVATIVE INTEGRATION OF EXTENSION, EDUCATION, AND RESEARCH - Sponsored by ED-208
Moderator: Jason R. Vogel, Oklahoma State University, Stillwater, OK
LOCATION: GOVERNORS-WESTIN

Time | Paper # | Title/Authors
--- | --- | ---
2:30PM | 131619881 | Energy Biosciences Institute: Recent Advances in Biomass Feedstock Production Engineering  

Tuesday, July 23 - 3:05PM
SESSION 253
AGRICULTURAL SUSTAINABILITY ADVANCEMENT AND DEVELOPMENT OF SUSTAINABILITY INITIATIVES, STANDARDS AND POSSIBLE REGULATIONS -  
Moderator: Scott Cedarquist, ASABE, St Joseph, MI
LOCATION: CHICAGO B-SHERATON
There are several efforts by organizations across the agricultural supply chain attempting to define sustainability. Some groups are identifying metrics to track progress while others are prescribing practices. This session will review many of these efforts and conclude with open discussion about what role ASABE should play in the assessment of agricultural sustainability.

Time | Paper # | Title/Authors
--- | --- | ---
2:30PM | 131619881 | Introduction  
Ed Barnes, Director, Agricultural Research, Cotton Inc.

Tuesday, July 23 - 3:35PM
SESSION 254
ABET PEV REFRESHER WORKSHOP - RAP SESSION - Sponsored by ED-204
Moderator: STBA
LOCATION: SENATORS-WESTIN
Target Audience: Current ASABE ABET Program Evaluators (PEV’s).
Learning Objectives: This session is for current ABET program evaluators and evaluators in training. Updates and changes to the ABET criteria will be discussed along with best practices for PEV’s.
Benefits: PEV’s will be up-to-date for any ABET visits in the Fall of 2013.

Time | Paper # | Title/Authors
--- | --- | ---
9:30AM | 131590290 | Technology System of Paddy Mechanized Farming in Double-cropping Areas in South China  
Huang Huang, China Agricultural University, Beijing, China (H. Huang, M. Yang, C. Ye)

Tuesday, July 23 - 9:30AM-12:15PM
SESSION 255
TRENDS IN THE AGRICULTURAL AND BIOLOGICAL ENGINEERING PRACTICES IN DEVELOPING COUNTRIES - Sponsored by Intl-601
Moderator: Israel S. Dunmade, Mount Royal Univ Calgary, Calgary, AB, Canada
LOCATION: CHICAGO C-SHERATON

9:30AM | 131590290 | Energy Biosciences Institute: Recent Advances in Biomass Feedstock Production Engineering  

Tuesday, July 23 - 9:45AM-12:15PM
SESSION 301
HANDLING, STORAGE, TRANSPORT, AND PROCESSING OF BIOMASS FEEDSTOCK -  
Sponsored by PM-23/7/2, FPE-709, PM-43
LOCATION: NORTHRUP-SHERATON

Time | Paper # | Title/Authors
--- | --- | ---
7:30AM | 131539003 | Parametric Study of Machinery Management  
Yunick J. Cundiff, Virginia Tech, Blacksburg, VA (R. Grisso, E. Webb, J. Cundiff, S. Sokhansanj)

Wednesday, July 24 - 7:30AM-11:00AM
SESSION 301
Technical Sessions

SESSION 302  CROP AND SOIL SENSING FOR PRECISION AGRICULTURE - Sponsored by PM-54, SW-24, SW-244
Moderator: Kendall R. Kirk, Clemson University, Clemson, SC
LOCATION: FREMONT-SHERATON

8:35AM 131592087 Model of NDVI Changing for Soybean Based on Time Series
Yubin Lan, Aerial Application Technology, USDA-ARS, college station, TX (Y. Lan, Z. Zhang)

9:30AM 131596181 Effect of two binders at three rates on densification of switchgrass through in-field cubing
John W. Lowe, Mississippi State University, Mississippi State, MS (J.W. Lowe, G.D. Chesser, J.D. Davis, J.K. Ward)

9:45AM 131620215 Analysis of Storage Methods and Tapping Practices for Corn Stover Bales
Brittany Schon, Iowa State University, Ames, IA (B. Schon, M.J. Darr, K. Webster, A. Kissel, A. Shah)

10:00AM Break

10:30AM 131620254 Design and Performance of a Biomass Shredder
Shawn Ehlers, Purdue University, West Lafayette, IN (S. Ehlers, D.R. Buckmaster, D.S. Ess, K. Johnson)

10:45AM 131620957 Single Row vs. Twin Row Digging Losses for Two Virginia Type Peanut Varieties
Hunter F. Massey, Clemson University, Clemson, SC (H.F. Massey, K.R. Kirk, S. Monfort, J. Thomas, B. Jordan, B. Schmidt)

11:00AM 131620922 Estimating the Impact of Machine Mass on the Productivity of US Farms
Andrew A. Klopfenstein, The Ohio State University, Columbus, OH (A.A. Klopfenstein, R.K. Billman, S.K. Pitla, S. Shearer)

11:15AM Break

11:30AM 131596081 Collection and Analysis of Biomass Harvest data for Integrated Biomass Supply and Logistics Model
Ed Brokesh, Kansas State University, Manhattan, KS (E. Brokesh)

11:45AM 131596185 Effect of two binders at three rates on densification of switchgrass through in-field cubing
John W. Lowe, Mississippi State University, Mississippi State, MS (J.W. Lowe, G.D. Chesser, J.D. Davis, J.K. Ward)

12:00PM 131547497 Bioenergy from Sweet Sorghum- an economic, environmental, and energy assessment for evaluating system configuration (farm to bio-refinery)
Kevin Caffrey, North Carolina State University, Raleigh, NC (K. Caffrey, M. Veal, M. Chinn)

12:15PM 131592135 A new design method of micro-irrigation engineering
Shawn Ehlers, Purdue University, West Lafayette, IN (S. Ehlers, D.R. Buckmaster, D.S. Ess, K. Johnson)

12:30PM 131594563 Evaluation of a laser scanning sensor for variable-rate tree sprayer development
Hui Liu, The Ohio State University, Wooster, OH (H. Liu, H. Zhu, Y. Shen, Y. Chen, E. Ozkan)

12:45PM 131592304 Imaging riparian seepage zones using electrical resistivity: Linking hydrology and nitrogen transport
Mark Williams, Penn State University, University Park, PA (M. Williams, A. Buda, K. Singha, H. Elliott)

1:00PM 131659046 Economic Consideration of Infield Biomass Bales Aggregation Strategies
Igathinathane Cannayen, North Dakota State University, Fargo, ND (I. Cannayen, S. Shakya, D. Archer, J. Hendrickson, S. Kronberg, M. Sanderson)

1:15PM 131620082 The Design and Implementation of Forage Machinery Management System by Using WEB Database
Gao Jiansong, China Agricultural University, Beijing, China (G. Jiansong, W. Zhiqin, D. Wang, G. Wang)

1:30PM 131618397 Imaging riparian seepage zones using electrical resistivity: Linking hydrology and nitrogen transport
Mark Williams, Penn State University, University Park, PA (M. Williams, A. Buda, K. Singha, H. Elliott)

1:45PM 131618648 Nutrient runoff from non-agricultural areas - two catchments in Norway
Hakan Borch, Bioforsk, Aas, Norway (H. Borch)

2:00PM 131618476 Assessment of a Prototype Sweet Cherry Harvester
Peter A. Larbi, Washington State University, Prosser, WA (P.A. Larbi, M. Karkee, Q. Zhang, M.D. Whiting)

2:15PM 131620580 Design, Performance Prediction, and Validation of a Seed Orienting Corn Planter
Adrian Koller, Oklahoma State University, Stillwater, OK PRESENTER: Randy Taylor (A. Koller, R. Taylor, W. Raun, P.R. Weckler, M.D. Buser)

2:30PM 131620956 A soil penetrometer integrated with VisNIR for in-situ soil reflectance measurement
Yufeng Ge, Texas A&M University, College Station, TX (Y. Ge, C. Morgan)

2:45PM 131619277 The Analysis of Alfalfa Hay Mechanized Harvesting Socialized Service Patterns in China by Using the Theory of the Industry Chain
Donghui Lu, China Agricultural University, Beijing, China (D. Lu, G. Zeqi, W. Zhiqin, D. Wang, G. Wang)

3:00PM 131620082 The Design and Implementation of Forage Machinery Management System by Using WEB Database
Gao Jiansong, China Agricultural University, Beijing, China (G. Jiansong, W. Zhiqin, D. Wang, G. Wang)

3:15PM 131596640 Using laser sensor for measuring crop conditions in precision agriculture
Yongjun Zheng, China Agricultural University, Beijing, China (Y. Zheng, Y. Lan, F. Kang, C. Ma, H. Chen, Y. Tan)

3:30PM 131620956 A soil penetrometer integrated with VisNIR for in-situ soil reflectance measurement
Yufeng Ge, Texas A&M University, College Station, TX (Y. Ge, C. Morgan)

3:45PM 131618397 Imaging riparian seepage zones using electrical resistivity: Linking hydrology and nitrogen transport
Mark Williams, Penn State University, University Park, PA (M. Williams, A. Buda, K. Singha, H. Elliott)

4:00PM 131618648 Nutrient runoff from non-agricultural areas - two catchments in Norway
Hakan Borch, Bioforsk, Aas, Norway (H. Borch)

4:15PM 131620580 Design, Performance Prediction, and Validation of a Seed Orienting Corn Planter
Adrian Koller, Oklahoma State University, Stillwater, OK PRESENTER: Randy Taylor (A. Koller, R. Taylor, W. Raun, P.R. Weckler, M.D. Buser)

4:30PM 131620956 A soil penetrometer integrated with VisNIR for in-situ soil reflectance measurement
Yufeng Ge, Texas A&M University, College Station, TX (Y. Ge, C. Morgan)

4:45PM 131619277 The Analysis of Alfalfa Hay Mechanized Harvesting Socialized Service Patterns in China by Using the Theory of the Industry Chain
Donghui Lu, China Agricultural University, Beijing, China (D. Lu, G. Zeqi, W. Zhiqin, D. Wang, G. Wang)
### Technical Sessions

#### Wednesday, July 24 - 7:30AM-10:00AM

**SESSION 305**  
**OPPORTUNITIES AND CHALLENGES IN LONG-TERM EXPERIMENTAL WATERSHED RESEARCH** - Sponsored by SW-21  
**LOCATION:** VAN HORN A-SHERATON  

- 8:45AM 131618951 **CHARACTERIZATION OF HIGH SPATIOTEMPORAL RAINFALL EVENTS IN THE UPPER WASHITA RIVER BASIN**  
  Jorge A. Guzman, ARS Grazinglands Research Laboratory, El Reno, OK (J.A. Guzman, J.M. Schneider, M. Chu, D.N. Moriasi, P.J. Starks, J.L. Steiner)  
- 9:00AM 131595968 **Dynamic Soil Moisture Model Using Satellite Data in the Framework of Geographic Information System**  
  Zhuping Sheng, Texas A&M University, Galveston, TX (Z. Sheng, X. Yang, Z. Xue)  
- 9:30AM 131619277 **Nutrient losses from an irrigated watershed in southern Idaho**  
  Dave Bjorneberg, USDA ARS, Kimberly, ID (D. Bjorneberg, J. Ippolito, A. Koehn)  

**SESSION 306**  
**NUTRIENT TRANSPORT AND CYCLING** - Sponsored by SW-22, SW-21, SW-25  
**LOCATION:** VAN HORN C-SHERATON  

- 7:50AM 131620585 **Using scaled physical models to measure the effects of runoff nutrient transport as affected by slurry application method, swine growth stage, and flow rate**  
  John Gilley, USDA-Agricultural Research Service, Lincoln, NE (J. Gilley)  
- 8:05AM 131621947 **Finite element modeling of phosphorus leaching through floodplain soils dominated by preferential flow pathways**  
  Ryan P. Freiberger, University of Nebraska - Lincoln, Lincoln, NE (R.P. Freiberger, D.M. Heeren, G.A. Fox)  
- 8:20AM 131621201 **Impact of Measurement Scale on Infiltration and Phosphorus Leaching in Ozark Floodplains**  
  Derek M. Heeren, University of Nebraska-Lincoln, Lincoln, NE (D.M. Heeren, G.A. Fox, D.E. Storm, B. Haggard, C. Perin, T. Halihan)  

**SESSION 307**  
**EVALUATING CLIMATE CHANGE IMPACTS ON WATER RESOURCES AND AGRICULTURE** - Sponsored by SW-21  
**LOCATION:** VAN HORN B-SHERATON  

- 7:50AM 131596290 **Development of a Prioritization Scheme for BMPs to Insure Water Quality Treatment Goals are Met: as part of a report for an EPA 319 Grant application**  
  John Gilley, USDA-Agricultural Research Service, Lincoln, NE (J.A. Guzman, J.M. Schneider, M. Chu, D.N. Moriasi, P.J. Starks, J.L. Steiner)  
- 8:05AM 131620917 **Using Dynamically-Downscaled Precipitation Data Intensity-Duration-Frequency (IDF) Curves in Alabama**  
  Mary Searing, Greenhorne and O’mara Engineering Consultants, Laurel, MD PRESENTER: Brett Schrey (B. Schrey)  
- 9:00AM 131596674 **Comparison of temperature, radiation and combination-based methods for estimating evapotranspiration in different climates**  
  Maria G. Arellano, University of Nebraska, Lincoln, NE (M.G. Arellano, R.A. Cooke, J.M. Schneider, M. Chu, D.N. Moriasi, P.J. Starks, J.L. Steiner)  
- 9:15AM 131620585 **Using scaled physical models to measure the effect of wetland shape, depth, and loading on hydraulic residence time**  
  Lindsay Kilpatrick, The Ohio State University, Columbus, OH (L. Kilpatrick, M. Wahl, L.C. Brown, A. Soboyejo, N.R. Fausey, B. Dong)  
- 9:30AM 131620070 **Research watersheds in the Central Mississippi River Basin: challenges and opportunities**  
  Derek M. Heeren, University of Nebraska-Lincoln, Lincoln, NE (D.M. Heeren, C. Perin, T. Halihan, B. Haggard, J.A. Guzman)  
- 9:45AM 131619770 **Nutrient losses from an irrigated watershed in southern Idaho**  
  Dave Bjorneberg, USDA ARS, Kimberly, ID (D. Bjorneberg, J. Ippolito, A. Koehn)  
- 10:00AM 131596699 **Characterization of high spatiotemporal rainfall events in the Upper Washita River Basins**  
  Jorge A. Guzman, ARS Grazinglands Research Laboratory, El Reno, OK (J.A. Guzman, J.M. Schneider, M. Chu, D.N. Moriasi, P.J. Starks, J.L. Steiner)
### Technical Sessions

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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title</th>
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<tbody>
<tr>
<td>8:20AM</td>
<td>131620711</td>
<td>Impacts of climate change and irrigation management strategies on soil moisture, evapotranspiration, irrigation water availability, and crop productivity</td>
<td>Keyvan Malek, Washington State University, Pullman, WA (K. Malek, C. Stockle, J. Adam, R. Nelson, K. Chinnayakanahalli)</td>
</tr>
<tr>
<td>8:35AM</td>
<td>131620968</td>
<td>Climate change impact assessment on risk of hydrological extremes</td>
<td>Manoj K. Jha, North Carolina A&amp;T State University, Greensboro, NC (M.K. Jha, S. Chattopadhyay)</td>
</tr>
<tr>
<td>8:50AM</td>
<td>131580500</td>
<td>Simulating climate change impacts on nitrate-nitrogen loss and crop yield in a subsurface drainage field</td>
<td>Zhiming Qi, McGill University, Sainte-Anne-de-Bellevue, QC, Canada (Z. Qi)</td>
</tr>
<tr>
<td>9:15AM</td>
<td>131593256</td>
<td>Evaluating the Effectiveness of BMPs with Future Climate Scenarios in a Forested Watershed in Mississippi</td>
<td>Abdullah O. Dakhaila, Mississippi State University, Starkville, MS (A.O. Dakhaila, P.B. Parajuli)</td>
</tr>
<tr>
<td>9:30AM</td>
<td>131562598</td>
<td>Climate change and associated risks to stream integrity</td>
<td>Sean Woznick, Michigan State University, East Lansing, MI (S. Woznick, A. Nejadhashemi, Y.A. Hamaann)</td>
</tr>
<tr>
<td>9:45AM</td>
<td>131598024</td>
<td>Impacts of Climate Variability on Sediment and Nutrients Loadings from Upper Pearl River Watershed (UPRW)</td>
<td>Prem B. Parajuli, Mississippi state university, Starkville, MS (P.B. Parajuli, B.P. Jayakody, T.P. Cathcart)</td>
</tr>
<tr>
<td>9:00AM</td>
<td>131619362</td>
<td>Reduction of Airborne Particulate Matter and Bacteria by Cyclone Energy: Impact of Inlet Velocity and Outlet</td>
<td>Sherry L. Hunt, Hydraulic Engineering Research Unit, Stillwater, OK (S.L. Hunt, K.C. Kadavy, G. Hanson)</td>
</tr>
<tr>
<td>9:15AM</td>
<td>131594897</td>
<td>Cyclone Energy: Impact of Inlet Velocity and Outlet Evaporative Designs</td>
<td>Paul Funk, USDA-ARS, Mesilla, NM (P. Funk, G. Holt)</td>
</tr>
<tr>
<td>9:45AM</td>
<td>131598024</td>
<td>Generalized Air Concentration Relationship for Stepped Spillways</td>
<td>Sherry L. Hunt, Hydraulic Engineering Research Unit, Stillwater, OK (S.L. Hunt, K.C. Kadavy, G. Hanson)</td>
</tr>
<tr>
<td>9:50AM</td>
<td>131619460</td>
<td>Field evaluation of Penman-Monteith canopy resistance for bell pepper evapotranspiration estimation</td>
<td>Olakide Aladenola, McGill University, Ste Anne de Bellevue, QC, Canada (O. Aladenola, C. Madramootoo)</td>
</tr>
<tr>
<td>10:05AM</td>
<td>131559786</td>
<td>Effects of Regulated Deficit Irrigation and Phosphorus Fertilizers on Water Use Efficiency, Yield and Total Soluble Solids of Tomato</td>
<td>Mohamed E. Abuaraab, Faculty of Agriculture - Cairo University, Giza, Egypt (M.E. Abuaraab, A.M. Hassan, M. Shahein)</td>
</tr>
<tr>
<td>10:20AM</td>
<td>131597701</td>
<td>Effect of Deficit Irrigation Water on the Productivity and Characteristics of Tomato</td>
<td>Mohamed E. Abuaraab, Faculty of Agriculture - Cairo University, Giza, Egypt (M.E. Abuaraab, A.M. Hassan)</td>
</tr>
</tbody>
</table>

### Location
- **SESSION 308** - EMPIRE A-SHERATON
- **SESSION 309** - EMPIRE C-SHERATON
- **SESSION 310** - EMPIRE B-SHERATON
- **SESSION 311** - EMPIRE A-SHERATON

### Session Details
- **Wednesday, July 24 - 7:30AM**: Opening Session
- **Wednesday, July 24 - 7:30AM-10:00AM**: Technical Sessions 308 and 309
- **Wednesday, July 24 - 7:30AM-10:00AM**: Technical Sessions 310 and 311

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**Wednesday, July 24 - 7:30AM-10:00AM**

**SESSION 308**

**MODEL SPECIFIC CALIBRATION AND VALIDATION**

- **LOCATION**: CHICAGO A-SHERATON
- **Moderator**: Daniel N. Moriasi
- **Target Audience**: Hydrologic and water quality model users and developers.

**Learning Objective**: To learn about model use, calibration and validation.

**Benefits**: Gain insights of proper calibration and validation of models presented.

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</tbody>
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**Wednesday, July 24 - 7:30AM-10:00AM**

**SESSION 309**

**DAM SAFETY: INSPECTION AND REHABILITATION**

- **LOCATION**: EMPIRE A-SHERATON
- **Moderator**: Ronald D. Tejral, USDA ARS, Stillwater, OK

<table>
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<th>Time</th>
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<tbody>
<tr>
<td>7:30AM</td>
<td>131595640</td>
<td>The Impact of Auxiliary Spillway Flows from Irene and Lee on NRCS Flood Control Dams in NY</td>
<td>Peter Wright, NRCS, Syracuse, NY (P. Wright, K. Junkins, J. Hock, M. Martin, T. Desiderio, C. Henry, J. Malone)</td>
</tr>
<tr>
<td>7:45AM</td>
<td>131595799</td>
<td>The use of seance pile walls in the rehabilitation of the Pohick Creek Dam No. 2 (Lake Barton) auxiliary spillway</td>
<td>Alicia J. Ketchum, USDA Natural Resources Conservation Service, Richmond, VA (A.J. Ketchum, M.J. Lyons, G.W. Wright)</td>
</tr>
<tr>
<td>7:55AM</td>
<td>131592018</td>
<td>Generalized Air Concentration Relationship for Stepped Spillways</td>
<td>Sherry L. Hunt, Hydraulic Engineering Research Unit, Stillwater, OK (S.L. Hunt, K.C. Kadavy, G. Hanson)</td>
</tr>
</tbody>
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**Wednesday, July 24 - 7:30AM-10:00AM**

**SESSION 310**

**CONTROLLED DEFICIT AND VARIABLE RATE IRRIGATION**

- **LOCATION**: EMPIRE B-SHERATON
- **Moderator**: Kenneth C. Stone, USDA-ARS, Florence, SC

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<th>Time</th>
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<tbody>
<tr>
<td>8:45AM</td>
<td>131620216</td>
<td>Flood Control Ability Changes of Dam Heightening Reservoirs Considering Climate Change</td>
<td>Sang Min Jun, Seoul National University, Seoul, Republic of Korea (S. Jun, M. Kang, I. Song, S. Hwang, J. Park)</td>
</tr>
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**Wednesday, July 24 - 7:30AM-10:00AM**

**SESSION 311**

**AIR QUALITY - PARTICULATE MATTER EMISSION FACTORS AND ABATEMENT STRATEGIES**

- **LOCATION**: EMPIRE C-SHERATON
- **Moderator**: Russell O. McGee, Texas A&M Univ, College Station, TX

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<th>Time</th>
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<tbody>
<tr>
<td>8:30AM</td>
<td>131596082</td>
<td>Generalized Air Concentration Relationship for Stepped Spillways</td>
<td>Sherry L. Hunt, Hydraulic Engineering Research Unit, Stillwater, OK (S.L. Hunt, K.C. Kadavy, G. Hanson)</td>
</tr>
<tr>
<td>8:45AM</td>
<td>131619353</td>
<td>Concentrations and Size Distributions of Airborne Particulate Matter and Bacteria in an Experimental Aviary Laying-Hen Housing System</td>
<td>Sang Min Jun, Seoul National University, Seoul, Republic of Korea (S. Jun, M. Kang, I. Song, S. Hwang, J. Park)</td>
</tr>
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</table>
Wednesday, July 24 - 7:30AM-10:00AM
SESSION 312
AIR QUALITY MODELING - Sponsored by SE-305
Moderator: Felipe Montes, Pennsylvania State Univ, State College, PA
LOCATION: CHOUTEAU A-SHERATON

Time | Paper # | Title/Authors |
--- | --- | --- |
7:30AM | 131596572 | A mass balance model based on total ammoniacal nitrogen for estimating ammonia volatilization from beef cattle manure management in Alberta Canada
Lilong Chai, Agriculture and Agri-Food Canada, Lethbridge, AB, Canada (L. Chai, R. Kroebel, H. Janzen, K. Beauchemin, S. McGinn, S. Bittrman, A. Alia, I. Edeogu) |
7:50AM | 131593399 | Influence of Suspended Solids Adsorption Properties on the Ammonia Volatilization Mechanism from Dairy Manure
Kedar Koirala, Washington State University, Pullman, WA (K. Koirala, H. Joo, P. Ndegwa, C. Frear, C. Stockle, J. Harrison) |
8:05AM | 131593184 | Influence of Anaerobic Digestion of Dairy Manure on Ammonia Volatilization Mechanism
Kedar Koirala, Washington State University, Pullman, WA (K. Koirala, H. Joo, P. Ndegwa, C. Frear, C. Stockle, J. Harrison) |
8:20AM | 131620732 | AERMOD Modeling of PM Dispersion after Emission from Concentrated Animal Feeding Operations (CAFOs)
Lara Jane S. Hadlocon, The Ohio State University, Columbus, OH (L.S. Hadlocon, L. Zhao) |
8:45AM | 131597912 | Modeling Dispersion of PM10 Emission from an Animal Feeding Operation Facility
Lingjuan W. Li, North Carolina State University, Raleigh, NC (L.W. Li, M. Ying) |

Wednesday, July 24 - 7:30AM-10:00AM
SESSION 313
ANIMAL HOUSING EVALUATION AND ENVIRONMENTAL CONTROL - PART 1 - Sponsored by SE-302, SE-301
Moderator: Brian D. Luck, Mississippi State Univ, Starkville, MS
LOCATION: CHOUTEAU B-SHERATON

Time | Paper # | Title/Authors |
--- | --- | --- |
7:30AM | 131620039 | Time delay correction to finite-order models of acoustic wave propagation in homogenous media
Timothy A. Shepherd, Iowa State University, Ames, IA (T.A. Shepherd, X. Chu, N. Zhang) |
7:50AM | 131593074 | Thermal and aereal (TA) comfort, variable to assess the internal environment of buildings with negative ventilation system in broiler production
Daniella J. Moura, State University of Campinas, Campinas, Brazil (D.J. Moura, R.A. Vercellino) |
8:05AM | 131593206 | Bioenergetics of Lohmann White Hens in Three Commercially Operated Housing Systems: Conventional Cage, Aviary, and Enriched Colony
Timothy A. Shepherd, Iowa State University, Ames, IA (T.A. Shepherd, H. Xin, Y. Zhao, H. Li, M.D. Hayes, J. Stinn) |
8:20AM | 131609319 | Fuzzy Logic tool for characterization of the internal environment of commercial broiler houses at the final stage
Daniella J. Moura, State University of Campinas, Campinas, Brazil (D.J. Moura, T.M. Carvalho, J.M. Massari, L.A. Sabino, A.S. Mendes) |
8:45AM | 131595210 | Effect of natural daylight intensity, overnight artificial LED light colors and duration on growth performance of female broilers
Mingli Zhang, Zhejiang University, Hangzhou, China (M. Zhang, J. Pan, Y. Yu) |

Wednesday, July 24 - 7:30AM-10:00AM
SESSION 314
ANIMAL MANURE MANAGEMENT SYSTEMS (PART 2) -
Moderator: Cherie E. LaFleur, USDA NRCS, Fort Worth, TX
LOCATION: CHICAGO B-SHERATON

Time | Paper # | Title/Authors |
--- | --- | --- |
7:30AM | 131596390 | Automating Management for a Vegetative Treatment System
Jason Gross, University of Nebraska Lincoln Extensie, Lincoln, NE (J. Gross, C.G. Henry) |
7:50AM | 131590575 | The Optimization Design of the Multilayer Scraper Manure Cleaning System Based on the Discrete Element Method
Jie Yang, China Agricultural University, Beijing, China (J. Yang, H. T. Li, H. Wang, B. Li) |
8:05AM | 131594626 | Feeding Cage without the Feedlot
Jason Gross, University of Nebraska Lincoln Extensie, Lincoln, NE (J. Gross, C.G. Henry) |
8:20AM | 131619798 | Performance of vegetative treatment systems for CAFOs in a northern subhumid climate
Todd Trooien, South Dakota State University, Brookings, SD (T. Trooien, A. Mathiowetz, S. Pohl, A. Boe, R. Gelderman) |
8:35AM | 131593617 | Gas emissions from dairy manure compost amended with biochar
Brendan Peachey, McGill University, Montreal, QC, Canada (B. Peachey, G. Clark) |
9:00AM | 131599107 | Analyzing the benefits of manure separation using mathematical optimization
Hongbo Dong, University of Wisconsin-Madison, Madison, WI (H. Dong, M.C. Ferris, T.L. Cox, J. Norman) |
9:15AM | 131690091 | Rapid Direct Testing of the Hydraulic Performance of Earthen Manure Impoundments
Cody R. Kurzer, NTH Consultants Ltd, Northville, MI (C.R. Kurzer, R.L. Burns, M. Olson, W. Reck) |

Wednesday, July 24 - 7:30AM-10:00AM
SESSION 315
MULTISPECTRAL AND HYPERSPECTRAL PROPERTIES OF AGRICULTURAL, BIOLOGICAL AND FOOD PRODUCTS - Sponsored by FPE-701
Moderator: Lamin S. Kassama, Alabama A&M Univ, Normal, AL
LOCATION: CHICAGO C-SHERATON

Time | Paper # | Title/Authors |
--- | --- | --- |
7:30AM | 131620440 | Methodology to compare efficiency of radiant brooders
John Linhoss, Mississippi State University, Mississippi State, MS (J. Linhoss, J.D. Davis, J.L. Purswell) |
7:30AM | 131599488 | Measurement of Degree of Milling for Rice Using Hyperspectral Imaging
Yan-Fu Kuo, National Taiwan University, Taipei, Taiwan (Y. Kuo, W. Chen) |
7:50AM | 131598657 | Classification of different level of Aflatoxin B1 on corn kernels surface using short-wave infrared reflectance hyperspectral imaging
Wei Wang, China Agricultural University, College of Engineering, Beijing, China (W. Wang, K.C. Lawrence, W. Windham, G. Heitschmidt, Y. Peng, X. Chu, N. Zhang) |
8:05AM | 131591627 | Time delay correction to finite-order models of acoustic wave propagation in homogeneous media
Niles V. Salvi, University of Missouri, Columbia, MO (N.V. Salvi, J. Tan) |
8:20AM | 131594617 | Methods for Differentiating Drainage oil and Normal Oil
Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan) |
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<tr>
<td>8:45AM</td>
<td>131596156</td>
<td>A rapid instrument designed for identifying the authenticity of agricultural products</td>
<td>Wenshen Jia, Jilin University, Changchun, China (W. Jia, J. Wang, Y. Lan, W. Wu, Z. Ma, D. Wang)</td>
</tr>
<tr>
<td>Wednesday, July 24 - 7:30AM-10:00AM</td>
<td>SESSION 316</td>
<td>VALUE-ADDED CHEMICALS AND PRODUCTS FROM BIOMASS - Sponsored by FPE-709, T-11, BE-28</td>
<td>Moderator: Sudhagar Mani, Univ of Georgia, Athens, GA LOCATION: PERSHING NORTH-WESTIN</td>
</tr>
<tr>
<td>7:30AM</td>
<td></td>
<td>Introduction</td>
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<tr>
<td>7:35AM</td>
<td>131587024</td>
<td>Environmentally Benign Pressure-Sensitive Adhesives from Soybean Oils</td>
<td>Yonghui Li, Kansas State University, Manhattan, KS (Y. Li, X.S. Sun)</td>
</tr>
<tr>
<td>7:50AM</td>
<td>131592132</td>
<td>Determination of optimum densification conditions for production of corn stover pellets</td>
<td>Virendra M. Puri, Pennsylvania State University, University Park, PA (V.M. Puri, A. Karamchandani, H. Yi)</td>
</tr>
<tr>
<td>8:05AM</td>
<td>131618553</td>
<td>Characterization and Enzymatic Hydrolysis of Soybean White Flakes and Soybean Meal Pretreated with Supercritical CO2-Assisted Extrusion</td>
<td>Bishnu Karki, South Dakota State University, Brookings, SD (B. Karki, K. Muthukumarapann, J. Kaur, W. Gibbons)</td>
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<tr>
<td>8:20AM</td>
<td>Break</td>
<td></td>
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<tr>
<td>8:30AM</td>
<td>131620425</td>
<td>Design, synthesis and characterization of soy protein - calcium silicate hydrate (C-S-H) biocomposites for adhesives</td>
<td>Min Jung Kim, Kansas State University, Manhattan, KS (M. Kim, X.S. Sun)</td>
</tr>
<tr>
<td>8:45AM</td>
<td>131620877</td>
<td>Soybean oil based resin for transparent flexible coatings in food packaging</td>
<td>Jonggeun Sung, Kansas State University, Manhattan, KS (J. Sung, Y. Li, X.S. Sun)</td>
</tr>
<tr>
<td>9:00AM</td>
<td>131620826</td>
<td>Epoxidation of camellia oil for biopolymer industry applications</td>
<td>Namhoon Kim, Kansas State University, Manhattan, KS (N. Kim, Y. Li, X.S. Sun)</td>
</tr>
<tr>
<td>Wednesday, July 24 - 10:15AM-12:45PM</td>
<td>SESSION 317</td>
<td>COMPUTATIONAL FLUID DYNAMICS (CFD) APPLICATIONS IN AGRICULTURE - Sponsored by IET-217, BE-22, SW-224, SE-303</td>
<td>Moderator: Christopher Y. Choi, Univ of Wisconsin, Madison, WI LOCATION: ROANOKE-WESTIN</td>
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<tr>
<td>10:15AM</td>
<td></td>
<td>Introduction</td>
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<tr>
<td>10:20AM</td>
<td>131619954</td>
<td>Evaluation of energy efficiency for anaerobic digestion using an integrated physical and biological model</td>
<td>Binxin Wu, Philadelphia Mixing Solutions, Palmyra, PA (B. Wu)</td>
</tr>
<tr>
<td>10:35AM</td>
<td>131598624</td>
<td>Computational model of ventilation systems in dairy structures</td>
<td>Mario Mondaca, University of Wisconsin, Madison, WI (M. Mondaca, N. Cook, K. Nordlund, C.Y. Choi)</td>
</tr>
<tr>
<td>10:50AM</td>
<td>131598901</td>
<td>Development and Validation of a Computational Fluid Dynamics Model of Algal Growth</td>
<td>Jessica Drewry, University of Arizona, Tucson, AZ (J. Drewry, C.Y. Choi)</td>
</tr>
<tr>
<td>11:05AM</td>
<td>131620744</td>
<td>Simulation of Airlflow in Broiler Houses for Salmonella Risk Reduction</td>
<td>Hubert Montas, University of Maryland, College Park, MD (H. Montas, J.R. Timmons, G. Felton, E. Mallinson)</td>
</tr>
<tr>
<td>11:20AM</td>
<td>131598937</td>
<td>An advanced conductive cooling design to relieve heat stress in modern dairies</td>
<td>Yifan Liang, University of Arizona, Tucson, AZ (Y. Liang, M. Mondaca, F. Rojano, C.Y. Choi)</td>
</tr>
<tr>
<td>11:35AM</td>
<td>131620673</td>
<td>Investigation of turbulence modeling for mechanical mixing in anaerobic digesters</td>
<td>Binxin Wu, Philadelphia Mixing Solutions, Palmyra, PA (B. Wu)</td>
</tr>
<tr>
<td>11:50AM</td>
<td>131586235</td>
<td>Numerical simulation of gas-solid flow in a cross-flow grain separation device</td>
<td>Xiaqiang Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, K. Ni, J. Chen, C. Wu, Y. Zhao)</td>
</tr>
<tr>
<td>Wednesday, July 24 - 7:30AM-10:00AM</td>
<td>SESSION 317</td>
<td>ADVANCES IN BIOMASS PREPROCESSING AND PRETREATMENT - Sponsored by FPE-709, T-11</td>
<td>Moderator: Sudhagar Mani, Univ of Georgia, Athens, GA LOCATION: PERSHING NORTH-WESTIN</td>
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<td>7:30AM</td>
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<td>Introduction</td>
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<tr>
<td>7:35AM</td>
<td>131598515</td>
<td>On-farm-Scale Biomass Pelletizer Performance</td>
<td>Daniel Ciolkosz, Penn State, University Park, PA (D. Ciolkosz, R. Hilton, D. Swomley, H. Yi, Y.M. Puri, G. Roth)</td>
</tr>
<tr>
<td>8:05AM</td>
<td>131620350</td>
<td>Pretreatment of Biomass Using an Alkaline Hydrogen Peroxide Spray</td>
<td>Josh Jackson, University of Kentucky, Lexington, KY (J. Jackson, M. Montross)</td>
</tr>
<tr>
<td>8:20AM</td>
<td>Break</td>
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<tr>
<td>8:30AM</td>
<td>131620770</td>
<td>Numerical simulation of cutting tool and biomass interactions during preprocessing</td>
<td>Bo Liu, University of Missouri, Columbia, MO (B. Liu, A.B. Koc)</td>
</tr>
<tr>
<td>8:45AM</td>
<td>131587920</td>
<td>Comparison of pretreatment methods for wheat straw pelletization by life cycle assessment study</td>
<td>Donghui Lu, China Agricultural University, Beijing, China (D. Lu, L.G. Tabil, D. Wang, X. Li, E. Mupondwa)</td>
</tr>
<tr>
<td>9:00AM</td>
<td>131594244</td>
<td>Effect of deep drying on grinding and moisture content of biomass</td>
<td>Manunya Phanphanich, Idaho National Laboratories, idaho falls, ID (M. Phanphanich)</td>
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<tbody>
<tr>
<td>8:45AM</td>
<td>131587024</td>
<td>A rapid instrument designed for identifying the authenticity of agricultural products</td>
<td>Wenshen Jia, Jilin University, Changchun, China (W. Jia, J. Wang, Y. Lan, W. Wu, Z. Ma, D. Wang)</td>
</tr>
<tr>
<td>Wednesday, July 24 - 7:30AM-10:00AM</td>
<td>SESSION 316</td>
<td>VALUE-ADDED CHEMICALS AND PRODUCTS FROM BIOMASS - Sponsored by FPE-709, T-11, BE-28</td>
<td>Moderator: Sudhagar Mani, Univ of Georgia, Athens, GA LOCATION: PERSHING NORTH-WESTIN</td>
</tr>
<tr>
<td>7:30AM</td>
<td></td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>7:35AM</td>
<td>131598515</td>
<td>On-farm-Scale Biomass Pelletizer Performance</td>
<td>Daniel Ciolkosz, Penn State, University Park, PA (D. Ciolkosz, R. Hilton, D. Swomley, H. Yi, Y.M. Puri, G. Roth)</td>
</tr>
<tr>
<td>8:05AM</td>
<td>131620350</td>
<td>Pretreatment of Biomass Using an Alkaline Hydrogen Peroxide Spray</td>
<td>Josh Jackson, University of Kentucky, Lexington, KY (J. Jackson, M. Montross)</td>
</tr>
<tr>
<td>8:20AM</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:30AM</td>
<td>131620770</td>
<td>Numerical simulation of cutting tool and biomass interactions during preprocessing</td>
<td>Bo Liu, University of Missouri, Columbia, MO (B. Liu, A.B. Koc)</td>
</tr>
<tr>
<td>8:45AM</td>
<td>131587920</td>
<td>Comparison of pretreatment methods for wheat straw pelletization by life cycle assessment study</td>
<td>Donghui Lu, China Agricultural University, Beijing, China (D. Lu, L.G. Tabil, D. Wang, X. Li, E. Mupondwa)</td>
</tr>
<tr>
<td>9:00AM</td>
<td>131594244</td>
<td>Effect of deep drying on grinding and moisture content of biomass</td>
<td>Manunya Phanphanich, Idaho National Laboratories, idaho falls, ID (M. Phanphanich)</td>
</tr>
</tbody>
</table>

Technical Sessions
### Technical Sessions

**SESSION 320**
**BIOPROCESSING FOR VALUE-ADDED PRODUCTS**
**Wednesday, July 24 - 7:30AM-10:15AM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00AM</td>
<td>131616261</td>
<td>Effects of drying techniques on qualities of different vegetables</td>
<td>PENN VALLEY-WESTIN</td>
</tr>
<tr>
<td>9:30AM</td>
<td>131620800</td>
<td>Alkali treatment to reduce the toxicity of acetic acid-rich bio-oil and enhance the biological utilization of lignocellulosic biomass through pyrolysis</td>
<td>PENN VALLEY-WESTIN</td>
</tr>
<tr>
<td>10:00AM</td>
<td>131595838</td>
<td>Extrusion Processing Effects on Protein Bioavailability</td>
<td>PENN VALLEY-WESTIN</td>
</tr>
<tr>
<td>10:30AM</td>
<td>131595849</td>
<td>Optimizing biohydrogen production from co-fermenting swine manure and sugar processing wastewater</td>
<td>PENN VALLEY-WESTIN</td>
</tr>
<tr>
<td>10:50AM</td>
<td>131596927</td>
<td>Review of Agricultural Engineering Construction</td>
<td>PENN VALLEY-WESTIN</td>
</tr>
<tr>
<td>11:15AM</td>
<td>131618699</td>
<td>Anaerobic Digestion of Whole and Lipid-Extracted Algal Biomass from Four Industrial Strains—Determination of Important Methane and Nutrient Information</td>
<td>PENN VALLEY-WESTIN</td>
</tr>
</tbody>
</table>

**SESSION 321**
**NUTRIENT REMOVAL, RECOVERY AND RECYCLE**
**Wednesday, July 24 - 7:30AM-10:15AM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>7:30AM</td>
<td>131594263</td>
<td>Optimization of Human Lysozyme Production by Kluyveromyces lactis K7 in Biofilm Reactors</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>7:50AM</td>
<td>131620880</td>
<td>Alkali treatment to reduce the toxicity of acetic acid-rich bio-oil and enhance the biological utilization of lignocellulosic biomass through pyrolysis</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>8:20AM</td>
<td>131592142</td>
<td>Polymer Based Dairy Manure Protein Separation Methodology</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>8:35AM</td>
<td>131547849</td>
<td>Optimizing biohydrogen production from co-fermenting swine manure and sugar processing wastewater</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>9:00AM</td>
<td>131618201</td>
<td>Hydrogen production by microbial electrolysis cells</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>9:15AM</td>
<td>131595838</td>
<td>Extrusion Processing Effects on Protein Bioavailability</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>9:30AM</td>
<td>131620857</td>
<td>Heat transfer analysis for bench and pilot scale production of epoxidized sucrose soyaate</td>
<td>NORTHRUP-SHERATON</td>
</tr>
</tbody>
</table>

**SESSION 322**
**INTERNATIONAL AGRICULTURAL STANDARDS DEVELOPMENT-EUROPE-SOUTH AMERICA, ASIA**
**Wednesday, July 24 - 10:15AM-10:50AM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15AM</td>
<td>131596516</td>
<td>Reclaiming Water from Anaerobic Digestion Effluent using Electrocoagulation Flotation (ECF) Treatment</td>
<td>SHAWNEE-WESTIN</td>
</tr>
<tr>
<td>10:30AM</td>
<td>131592977</td>
<td>Production of Granulated Dairy Manure Solids</td>
<td>SHAWNEE-WESTIN</td>
</tr>
<tr>
<td>10:45AM</td>
<td>131620719</td>
<td>The Rotating Photo-Bioreactor as a Method for Removing Soluble Nutrients from Waters</td>
<td>SHAWNEE-WESTIN</td>
</tr>
<tr>
<td>11:00AM</td>
<td>131613111</td>
<td>A hybrid absorbent-membrane photobioreactor for enhanced nutrient and organics recovery from wastewater during algal biomass production</td>
<td>NW-ORTHOPHOSPHORS</td>
</tr>
</tbody>
</table>

**SESSION 323**
**MACHINERY MANAGEMENT AND MECHANIZATION - PART 2**
**Wednesday, July 24 - 10:15AM-12:45PM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15AM</td>
<td>131620236</td>
<td>Mechanization Profit Portion in Plant Products Industry in Shaanxi Province</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>10:30AM</td>
<td>131595856</td>
<td>Modelling of Energy Requirement for Tillage Operation</td>
<td>SHAWNEE-WESTIN</td>
</tr>
<tr>
<td>10:45AM</td>
<td>131596927</td>
<td>Applicability evaluation of corn harvesting machinery in Northern China</td>
<td>SHAWNEE-WESTIN</td>
</tr>
<tr>
<td>11:00AM</td>
<td>131619264</td>
<td>Research on the Demand of Alfalfa Harvest Machine in China’s Northern and North-west Regions</td>
<td>NORTHRUP-SHERATON</td>
</tr>
<tr>
<td>11:15AM</td>
<td></td>
<td>Break</td>
<td>NORTHRUP-SHERATON</td>
</tr>
</tbody>
</table>
Technical Sessions

11:30AM 131595976 Mechanization of Production and Processing of Cassava for Value Addition in Nigeria
Kayode C. Oni, University of Ilorin, Ilorin, Nigeria (K.C. Oni, O.A. Oyelade)

11:45AM 131585152 A Study of Factors Influencing Agricultural Machinery Field Performance during Primary Tillage Operations
Mohammed Abdul Salam, Ahmado Bello University, Zaria, Nigeria (M. Abdul Salam, M.A. Gwaza, I.D. Babangida)

12:00PM 131578419 Field and Economic Performance of Three Tractor Models for Ploughing Operations in Sandy-clay soil of Nigeria
Adewale O. Adewoyin, University of Ibadan, Ibadan, Nigeria (A.D. Adewoyin, E.A. Ajay)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 324 ENGINEERING FOR FORAGE HARVEST, STORAGE AND PARTICLE SIZE ANALYSIS - LOCATION: FREMONT-SHERATON

Sponsored by PM-237/2
Moderator: Patrick T. Murphy, Purdue University, West Lafayette, IN

10:15AM Introduction

10:20AM 131578073 Particle size analysis by static and dynamic image analysis for processed biomass crops
Philippe Savio, Agriculture and Agri-Food Canada, Quebec, Canada (P. Savio, G. Pilon, S. Mani)

10:35AM 131591987 Improving the Bale Handling Logistics by Strategic Bale Placement
Kevin Shinners, Unv of Wisconsin, Madison, WI (K. Shinners, J. Friede, T. Kraus)

10:50AM 131593112 Secondary compression and bulk-stress-density relations of biomass feedstock pellets
Zewei Miao, University of Illinois at Urbana-Champaign, Urbana, IL (Z. Miao, T. Grift, K. Ting)

11:05AM 131619074 Bunker Silo Density as Affected by Layer Thickness and Packing Device
Richard E. Muck, USDA, Agricultural Research Service, Madison, WI (R.E. Muck, B.J. Holmes)

11:20AM Break

11:30AM 131620148 Chopped forage particle size analysis in one, two and three dimensions
Philippe Savio, Agriculture and Agri-Food Canada, Quebec, Canada (P. Savio, M. Audy-Dubé, C.L. St-Arnaud, R. Morissette)

11:45AM 131593061 Relationships between Biomass Feedstock Capacitance and Bulk Density During Compression
Yuesheng Tan, Beijing Forestry University, Beijing, China (Y. Tan, Z. Miao, T. Grift, K. Ting)

12:00AM 131619384 Optimization design and Analysis of the Unloading Mechanism of Round Baler
Wencheng Huang, China Agricultural University, Beijing, China (W. Huang, D. Wang, G. Wang, L. Wang)

10:35AM Introduction

10:40AM 131618760 Smart Tractor Approach to Variable Rate Technology
Vichasvul Adamchuk, McGill University, Ste-Anne-de-Bellevue, QC, Canada (V. Adamchuk, J. Lenz, P. Muench, M. Mastorakos)

11:05AM Break

11:15AM 131618578 Evaluation of Modified Variable Rate Granular Fertilizer Spreader for Spot-Specific Fertilization in Wild Blueberry Fields
Hassan S. Chattha, Dalhousie University, Faculty of Agriculture, Truro, NS, Canada (H.S. Chattha, Q. Zaman, A. Schumann, G. Brewster, Y. Chang, S. Read)

11:30PM 131668472 Sensor-Based Estimation of Cotton Plant Height: Potential for Site-Specific Plant Growth Management
Pedro Andrade-Sanchez, University of Arizona, Maricopa, AZ (P. Andrade-Sanchez)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 325 VARIABLE RATE TECHNOLOGY FOR PRECISION AGRICULTURE - LOCATION: BENTON A-SHERATON

Sponsored by PM-54
Moderator: Ajay Sharda, Washington State University, Prosser, WA; Ajay Sharda

10:15AM Introduction

10:20AM 131594025 Development and Performance Testing of a Light Source System on a Smart Sprayer for Spot-Application of Agrochemicals in Wild Blueberry Fields
Travis Esau, Dalhousie University Faculty of Agriculture, Truro, NS, Canada (T. Esau, Q. Zaman, Y. Chang, A. Schumann)

10:35AM 131620682 Evaluation of Pulse Width Modulation Sprays for Spray Quality
John P. Lang, Pentair, New Brighton, MN (J.P. Lang)

11:05AM 131620840 Smart Tractor Approach to Variable Rate Technology
Viacheslav Adamchuk, McGill University, Ste-Anne-de-Bellevue, QC, Canada (V. Adamchuk, J. Lenz, P. Muench, M. Mastorakos)

11:15AM Break

11:20AM 131618578 Evaluation of Modified Variable Rate Granular Fertilizer Spreader for Spot-Specific Fertilization in Wild Blueberry Fields
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Pedro Andrade-Sanchez, University of Arizona, Maricopa, AZ (P. Andrade-Sanchez)
Wednesday, July 24 - 10:15AM-12:45PM
SESSION 327  TRANSPORT AND FATE: MICROORGANISMS, COLLOIDS, ENGINEERED NANOPARTICLES, AND EMERGING CONTAMINANTS IN THE ENVIRONMENT  - Sponsored by SW-21
Moderator: Wei Zhang, East Lansing; Philip L. Barnes, Kansas State Univ, Wamego, KS
LOCATION: VAN HORN A-SHERATON

11:30AM 131619691 Response of six ecosystem services to different hydroperiods in stormwater treatment wetlands
Anita Thompson, University of Wisconsin, MADISON, WI (A. Thompson, S. Prellwitz, J. Doherty, J. Miller, S. Loheide, J. Zedler)

Wednesday, July 24 - 10:15AM-1:15PM
SESSION 329  DRAINAGE MANAGEMENT FOR AGRICULTURAL SUSTAINABILITY  - Sponsored by SW-23, BE-22
Moderator: Srinivasulu Ale, Texas A&M AgriLife Research, Vernon, TX
LOCATION: VAN HORN B-SHERATON

11:05AM 131609396 Edge-of-field and watershed scale transport of phosphorus in tile drainage discharge
Kevin King, USDA-ARS, Columbus, OH (K. King, N.R. Fausey)

11:30AM 131619207 SWAT Model Application for Phosphorus Simulation of the Grand Lake St. Mary’s Watershed
Yongping Yuan, U.S. EPA, Las Vegas, NV (Y. Yuan, M. Anderson)

11:50AM 131620637 Laboratory Comparison of Four Iron-Based Filter Materials for Drainage Water Phosphate Treatment
Barry J. Allred, USDA/ARS, Columbus, OH (B.J. Allred, R. Racharakas)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 328  ECOSYSTEM SERVICES: MEASUREMENTS, MODELING, AND TRADE-OFF ANALYSES  - Sponsored by SW-22, SW-224, BE-22, SW-26
Moderator: Sanjay Shukla, University of Florida, Immokalee, FL
LOCATION: PERSHING NORTH-WESTIN

10:15AM Introduction

10:20AM 131606450 Reducing Sediment Oxygen Demand in Eutrophic Lakes
Grace Richardson, University of Arkansas, Fayetteville, AR (G. Richardson, G.S. Osborn)

10:35AM 131620977 Evaluating Cover Crop Evapotranspiration using Field Measurements and Remote Sensing Techniques
Christopher Hay, South Dakota State University, Brookings, SD (C. Hay, B. Hankerson, J. Kjaersgaard)

10:50AM 131598526 Characterizing the effect of hydrothermal liquefaction on fate and transport of bio-active compounds in animal waste
Maipham, University of Illinois at Urbana-Champaign, Urbana, IL (M. Pham, B. Sharma, M. Plewa, L. Schideman)

11:05AM 131620716 Hard x-ray fluorescence microscopy techniques for investigations of aquatic systems of soil colloids
Sophie C. Gleber, Argonne National Laboratory, Argonne, IL (S.C. Gleber)

11:30AM 131619289 Sorption and Desorption of Oxytetracycline on a Biochar-Amended Soil in the Presence of a Nonionic Surfactant
Eman EL-SAYED, McGill University, Ste Anne de Bellevue, QC, Canada (E. EL-SAYED, S.O. Prasher)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 329  ECOSYSTEM SERVICES: MEASUREMENTS, MODELING, AND TRADE-OFF ANALYSES  - Sponsored by SW-22, SW-224, BE-22, SW-26
Moderator: Sanjay Shukla, University of Florida, Immokalee, FL
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Moderator: Sanjay Shukla, University of Florida, Immokalee, FL
LOCATION: PERSHING NORTH-WESTIN

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Eman EL-SAYED, McGill University, Ste Anne de Bellevue, QC, Canada (E. EL-SAYED, S.O. Prasher)
Technical Sessions

10:50AM 131598432 Do Cover Crops Increase or Decrease Nitrous Oxide Emissions in Agroecosystems? A Meta-Analysis
Andrea D. Basche, Iowa State University, Ames, IA (A.D. Basche, F.E. Miguez)

11:05AM 131618649 Biofuel production stability: effect of drought on ethanol yields from prairie- and corn-based systems
Virginia Nichols, Iowa State University, Ames, IA (V. Nichols, F.E. Miguez)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 331 SUBSURFACE AND DRAINAGE WATER MANAGEMENT - Sponsored by SW-24, SW-242
Moderator: TBA
LOCATION: EMPIRE A-SHERATON

10:15AM Introduction

10:20AM 131618991 Evaluation of In-Shell Kernel Moisture Content Using a 3D ToF Sensor
Weilin Wang, University of Georgia, Athens, GA (W. Wang, R. Liu, C. Li, E.W. Tollner, M.A. Haidekker)

10:35AM 131594612 Effects of Bedding and Feeding High Crude Protein on the Performance of Dairy Cows
Shafiqur Rahman, North Dakota State University, Fargo, ND (S. Rahman, S. Trabelsi, J. Ammons, C. Jones, S. Bakaletz)

11:05AM Microwave Moisture Meter for In-Shell Almonds
Meng Zhan, China Agricultural University, Beijing, China (M. Zhan, S. Shi, X. An, Z. Zhong, H. Zhang)

11:30AM 131619287 Automatic Creep Feeder Based on RFID Technology
Jiaoyue Pu, Northwest A&F University, Yangling, China (J. Pu, H. Zhang)

10:20AM 131612287 Automatic Creep Feeder Based on RFID Technology
Yeyin Shi, Oklahoma State University, Stillwater, OK (Y. Shi, N. Wang, C. Richards, D. Tiley)

10:35AM 131593538 Mobile, Cloud-Based Farm Management: A Case Study with Trello on My Farm
Aaron Ault, Purdue University, West Lafayette, IN (A. Ault, D.R. Buckmaster, J. Krogmeier)

10:50AM A Virtual Earth Globe Examination of a Minesoil Survey
Robert Freeland, Univ. of Tenn., Knoxville, TN (R. Freeland, J. Ammons, C. Jones, S. Bakaletz)

11:05AM Agricultural products traceability system with autonomous multiple enterprises management supported
Jiaoyue Pu, Northwest A&F University, Yangling, China (J. Pu, H. Zhang)

10:20AM 131588801 Dielectric properties of grain and seed and their usefulness in sensing physical properties

10:35AM 131618472 Engineering Considerations for Dielectric On-Line Grain Moisture Measurement

10:50AM 131618991 Evaluation of In-Shell Kernel Moisture Content Monitoring With a Microwave Moisture Meter During Peanut Drying
Micah A. Lewis, USDA ARS, Athens, GA (M.A. Lewis, S. Trabelsi, S.O. Nelson)

11:05AM Microwave Moisture Meter for In-Shell Almonds
Stuart O. Nelson, ARS-USDA, Athens, GA (S.O. Nelson, S. Trabelsi)

11:15AM Break

11:30AM Real-time measurement of leaf temperature and humidity
Meng Zhan, China Agricultural University, Beijing, China (M. Zhan, M. Li, L. Zheng, H. Sun, X. An, Z. Zhong)

11:05AM 131620769 Machine Vision-Based Indirect Estimation of the Position and Attitude of Mobile Robots
Ji Li, Iowa State University, Ames, IA (J. Li, L. Tang)

11:20AM Break

11:30AM 131593519 Automated identification of neck/root and orientation of onions using 3D imaging
Weilin Wang, University of Georgia, Athens, GA (W. Wang, C. Li, E.W. Tollner, M.A. Haidekker)

11:45PM 131596717 Using an UGV System for measuring crop conditions in precision aerial application
Yongjun Zheng, China Agricultural University, Beijing, China (Y. Zheng, Y. Lan, C. Wang, H. Chen, Z. Wang, Y. Tan, S. Wang)

12:00AM 131620182 Background Segmentation based on Adaptive Fusion of Multi-spectral image
Yongliang Qiao, Northwest A&F University, Yangling, China (Y. Qiao, D. He, P. Li)

10:20AM 131612287 Automatic Creep Feeder Based on RFID Technology
Yeyin Shi, Oklahoma State University, Stillwater, OK (Y. Shi, N. Wang, C. Richards, D. Tiley)

10:35AM 131593538 Mobile, Cloud-Based Farm Management: A Case Study with Trello on My Farm
Aaron Ault, Purdue University, West Lafayette, IN (A. Ault, D.R. Buckmaster, J. Krogmeier)

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Stuart O. Nelson, ARS-USDA, Athens, GA (S.O. Nelson, S. Trabelsi)

11:15AM Break

11:30AM Real-time measurement of leaf temperature and humidity
Meng Zhan, China Agricultural University, Beijing, China (M. Zhan, M. Li, L. Zheng, H. Sun, X. An, Z. Zhong)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 332 MACHINE VISION AND SENSORS FOR AUTONOMOUS VEHICLES AND ROBOTICS - Sponsored by IET-312
Moderator: Weilin Wang, University of Georgia, Athens, GA (W. Wang, R. Liu, C. Li, E.W. Tollner, M.A. Haidekker)

10:15AM Introduction

10:20AM 131620787 Real-time Plant Recognition for Robotic Weeding Using a 3D ToF Sensor
Ji Li, Iowa State University, Ames, IA (J. Li, L. Tang)

10:35AM 131619696 An Advanced Real-time Plant Species Identification System
George E. Meyer, University of Nebraska, Lincoln, NE (G.E. Meyer, G. Coffman, K. Conroy, S.L. Young)

10:50AM 131597654 A Real-Time Stereo Vision System for Obstacle Recognition and Motion Estimation
Ta-Te Lin, National Taiwan University, Taipei, Taiwan (T. Lin, K. Chuang, A. Tsai, Y. Chen)

11:05AM 131620769 Machine Vision-Based Indirect Estimation of the Position and Attitude of Mobile Robots
Ji Li, Iowa State University, Ames, IA (J. Li, L. Tang)

11:20AM Break

11:30AM 131593519 Automated identification of neck/root and orientation of onions using 3D imaging
Weilin Wang, University of Georgia, Athens, GA (W. Wang, C. Li, E.W. Tollner, M.A. Haidekker)

11:45PM 131596717 Using an UGV System for measuring crop conditions in precision aerial application
Yongjun Zheng, China Agricultural University, Beijing, China (Y. Zheng, Y. Lan, C. Wang, H. Chen, Z. Wang, Y. Tan, S. Wang)

12:00AM 131620182 Background Segmentation based on Adaptive Fusion of Multi-spectral image
Yongliang Qiao, Northwest A&F University, Yangling, China (Y. Qiao, D. He, P. Li)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 333 EMERGING INFORMATION TECHNOLOGIES - Sponsored by IET-254, IET-217, IET-312, IET-318
Moderator: Acushla Antony, Purdue University, West Lafayette, IN
LOCATION: EMPIRE C-SHERATON

10:15AM Introduction
**Technical Sessions**

**SESSION 336**

**ANIMAL HOUSING EVALUATION AND ENVIRONMENTAL CONTROL - PART 2 -**

- **10:00AM** 131605247
  A New Method to Continuously Measure Pit Fan Ventilation at a Swine Experimental Building
  Igor M. Lopes, Purdue University, West Lafayette, IN (I.M. Lopes, D. Kaelin, J. Ni, C.A. Diehl, J.S. Raddcliffe, B. Richert)

- **10:30AM** 131619935
  Thermal Environments, Production Efficiency, and Energy Consumption of Swine Finishing Facilities with Natural and Mechanical Ventilation Systems
  Lingying Zhao, The Ohio State University, Columbus, OH (L. Zhao, J. Funk)

- **11:05AM** 131585272
  Validating an Averaging Pitot Tube System for Measuring Fan Air Flows

- **11:45AM** 131619651
  Sampling Frequency Selection and Diurnal Patterns of Methane Production from Beef Cattle

- **12:00PM** 131620099
  Water temperature and spraying interval may affect the cooling effect of the sprinkler system in dairy farm
  Zhizhao Yan, College of Water Resources and Civil Engineering, China Agricultural University, Beijing, China (Z. Yan, Z. Shi, B. Li, C. Wang, H. Li, H. Wang)

**SESSION 337**

**GREENHOUSE AND NURSERY TECHNOLOGY APPLICATIONS - Sponsored by SE-303**

- **10:15AM** 131594695
  Design of a simple heat recovery ventilator for agricultural buildings
  David R. Bohnhoff, UW-Madison, Madison, WI (D.R. Bohnhoff, J. Styx)

- **10:30AM** 131619682
  Overview and Application of a Metabolic Chamber for Quantification of Greenhouse Gas Generation from Enteric Fermentation

- **11:05AM** 131554865
  Design, Construction and Operation of a Demonstration Rainwater Harvesting System for Greenhouse Irrigation at McGill University, Canada
  David R. Bohnhoff, University of Wisconsin-Madison, Madison, WI (D.R. Bohnhoff)

- **11:20AM** 131555820
  The design and fabrication of a Rotatable Guarded Hot Box (RGHB) Capable of Static Pressure Application
  David R. Bohnhoff, University of Wisconsin-Madison, Madison, WI (A.J. Holstein, D.R. Bohnhoff)

**SESSION 338**

**DESIGN, ANALYSIS, TESTING AND ASSEMBLY OF STRUCTURES - Sponsored by SE-20, SE-204, FPE-702, SE-07/1**

- **10:00AM** 131578832
  The Design and Fabrication of a Rotatable Guarded Hot Box (RGHB)
  David R. Bohnhoff, University of Wisconsin-Madison, Madison, WI (A.J. Holstein, D.R. Bohnhoff)

- **10:30AM** 131594695
  Design of a simple heat recovery ventilator for agricultural buildings
  David R. Bohnhoff, UW-Madison, Madison, WI (D.R. Bohnhoff, J. Styx)

- **11:05AM** 131620180
  Design and evaluation of a novel greenhouse for vegetable production at Ningxia’s wind-sand and arid belt
  Wenzhong Guo, National Research Center of Intelligent Equipment for Agriculture, Beijing, China PRESENTER: Bin Li (W. Guo, J. Qu, H. Feng, B. Li)

- **11:20AM** 131620180
  Design and evaluation of a novel greenhouse for vegetable production at Ningxia’s wind-sand and arid belt
  Wenzhong Guo, National Research Center of Intelligent Equipment for Agriculture, Beijing, China PRESENTER: Bin Li (W. Guo, J. Qu, H. Feng, B. Li)

**LOCATION: CHICAGO C-SHERATON**

**LOCATION: PERSHING SOUTH-WESTIN**

**LOCATION: PERSHING EAST-WESTIN**

**LOCATION: PERSHING EAST-WESTIN**
Technical Sessions

10:35AM 131592137 Utilization of Degraded Wood Chips in a Combined Heat and Power System
Jason K. Ward, Mississippi State University, Mississippi State, MS (J.K. Ward, J.D. Davis, C.S. Rylas)

10:50AM 131620089 Net-energy-ratio of Charcoal Production from Agricultural Biomass
Amit Kumar, University of Alberta, Edmonton, AB, Canada (A. Kumar, J. Thakkar)

11:05AM 131620095 Hydrogenation-Derived Renewable Diesel Production from Bio-oil: A review
Madhumita Patel, University of Alberta, Edmonton, AB, Canada (M. Patel, A. Kumar)

11:20AM Break

11:30AM 131713244 Specific Energy Consumption and Corn Stover Pellets
Jaya Shankar Tumuluru, Idaho National Laboratory, Idaho Falls, ID (J. Tumuluru, C.T. Wright)

11:35AM 131582166 Investigation of oil extraction from non-food sunflower seeds and meats for future jet fuel production
Pushpak Bhandari, Oklahoma State University, Stillwater, OK (P. Bhandari, A. Kumar, R.L. Huhnke)

10:35AM 131618086 Structural characterization of biochar by spectroscopy techniques
Kezhen Qian, Oklahoma State University, Stillwater, OK (K. Qian, A. Kumar, R.L. Huhnke)

10:50AM 131607893 Mechanical Properties of Bacterial Cellulose Microfibril Bundles in Tensile Loading
Mohammad S. Zamil, The Pennsylvania State University, University Park, PA PRESENTER: Virenra Puri (M.S. Zamil, Y. Weng, H. Yi, J.M. Catchmark, V.M. Puri)

11:05AM 131620763 Characterization of yellow passion fruit pectin enzymatically extracted
Juliana Vasco Correa, Universidad Nacional de Colombia, Sede Medellín, Medellín, Colombia (J. Vasco Correa, A.D. Zapata Zapata)

10:35AM 131609916 Development of low cost defined medium for ethanol production from syngas using Clostridium ragsdalei
Hasan K. Atiyeh, Oklahoma State University, Stillwater, OK (H.K. Atiyeh, M. Devarapalli, J.R. Phillips, J.J. Orgill, R.S. Lewis, R.L. Huhnke)

10:50AM 131620612 Summary of Auger-related Entanglements Occurring Simultaneously with Neurotransmitter Release
Hasan K. Atiyeh, Oklahoma State University, Stillwater, OK (H.K. Atiyeh, M. Devarapalli, J.R. Phillips, J.J. Orgill, R.S. Lewis, R.L. Huhnke)

11:05AM Break

11:15AM 131618077 Comparison of syngas fermentation in trickle bed, continuously stirred tank and hollow fiber membrane reactors using Clostridium ragdalei
Hasan K. Atiyeh, Oklahoma State University, Stillwater, OK (H.K. Atiyeh, M. Devarapalli, J.R. Phillips, J.J. Orgill, R.S. Lewis, R.L. Huhnke)

11:20AM 131668436 Thermal and Physiochemical Properties of Waste Temperature Gas Streams
Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan)

11:25AM 131618086 Structural characterization of biochar by spectroscopy techniques
Kezhen Qian, Oklahoma State University, Stillwater, OK (K. Qian, A. Kumar, R.L. Huhnke)

11:30AM 131590979 High Static Pressure and Heat Assisted Milling for Preparing Superfine Bone Powders
Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan)

11:35AM 131593819 Some physical and nutritional properties of Leymus chinensis (Trin.) Tzvel. seeds
Yang Gao, China Agricultural University, Beijing, China (Y. Gao)

12:00PM 131593632 Some nutritional and physical properties of alfalfa (Medicago sativa Linn) seeds
Yang Gao, China Agricultural University, Beijing, China (Y. Gao)

12:15PM 131713241 Decision Support Software Update: Transporting Seed Cotton from the Field to Gin
Jordan Grier, Texas A&M Univ, College Station, TX (J. Grier, C.B. Parnell, R.O. McGee)

Tuesday, July 24 - 10:15AM-12:45PM

SESSION 340 OCCUPATIONAL SAFETY & HEALTH WITHIN BIOMASS SYSTEMS AND AGRICULTURAL CONFINED SPACES - Sponsored by FPE-707

10:15AM Introduction

Aaron M. Yoder, The Pennsylvania State University, University Park, PA (A.M. Yoder, D.J. Murphy, A.F. Dehart)

10:35AM 131579935 Effects of selected predictors on Utah Farm Owner/Operators' agricultural confined space hazard perceptions
Michael L. Pate, Utah State University, Logan, UT (M.L. Pate, X. Dai)

10:50AM 131620612 Summary of Auger-related Entanglements Occurring Inside Agricultural Confined Spaces
Yuan-Hsin Cheng, Purdue University, West Lafayette, IN (Y. Cheng, W.E. Field)

11:05AM 131620596 Experienced Air Quality and Symptoms in Persons Working with Dairy Cows and Cattle
Sven Nimmermark, Swedish Univ Agric Sciences, Alnarp, Sweden (S. Nimmermark)

11:20AM Break

11:30AM 131582166 Investigation of oil extraction from non-food sunflower seeds and meats for future jet fuel production
Xianhua Zhao, South Dakota State University, Brookings, SD (X. Zhao, L. Wei, J. Juslen, C. Shi, W. Qu)

12:15PM 131668436 Thermal and Physiochemical Properties of Waste Temperature Gas Streams
Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan)

Wednesday, July 24 - 10:15AM-12:45PM

SESSION 341 PHYSICAL AND CHEMICAL PROPERTIES OF BIORESOURCE PRODUCTS, CO-PRODUCTS, AND WASTE PRODUCTS - Sponsored by FPE-707

10:15AM Introduction

10:20AM 131615874 Specific Energy Consumption and Corn Stover Pellets Properties Produced Using a Flat Die Pellet Mill
Jaya Shankar Tumuluru, Idaho National Laboratory, Idaho Falls, ID (J. Tumuluru, C.T. Wright)
Wednesday, July 24 - 10:15AM-12:45PM
SESSION 343
FOOD SAFETY ENGINEERING: PART 2
Moderator: Litha Sivanandan, West Virginia University, Morgantown, WV; Oliver K. Schluter, Leibniz Institute for Agricultural Eng, Potsdam, Germany
LOCATION: MISSION-WESTIN

10:15AM 131578676 Motivation, Verification and Monitoring of Hand Hygiene Compliance for Food Handlers
Yongbo Wan, Oklahoma State University, Stillwater, OK (Y. Wan, N. Wang, P. Crandall, D. Babu)

11:05AM 131590856 High-pressure inactivation kinetics of Staphylococcus aureus in Chinese soybean paste
Minsheng Zhou, Key Laboratory of Equipment and Informatization in Environment Controlled Agriculture, Ministry of Agriculture, P.R. China; College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (M. Zhou, G. Su, Y. Yu, J. He, S. Zhu)

11:20AM 131594589 Physical and Chemical Characteristics of Drainage oil
Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan)

11:35AM Break

11:45AM 131594589 Risk Assessment Modeling of Microwave Cooking of Frozen, Not-Ready-to-Eat Food Products
Edel Summers, University of Nebraska-Lincoln, Lincoln, NE (E. Summers, J. Subbiah, D. Jones, B. Tameru)

12:00PM 131595733 Development of SCC counter
Peter Tongel, Animal Production Research Centre, Nitra, Slovakia (P. Tongel, J. Broucek)

12:15PM 131595733 Development of Rapid electronic mastitis test
Peter Tongel, Animal Production Research Centre, Nitra, Slovakia (P. Tongel, J. Broucek)

12:30PM 131620444 Improving antimicrobial activity of cinnamonaldehyde by nanoencapsulation for active food packaging
Rupali Choudhary, southern illinois university, Carbondale, IL (R. Choudhary, S. Makwana, N. Dogra, P. Kohli, J. Haddock)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 344
DRIYING, HANDLING, AND STORAGE OF CROPS
Funded by FPE-703, FPE-712
Moderator: Jason K. Ward, Mississippi State Univ, Mississippi State, MS
LOCATION: LIBERTY-WESTIN

10:15AM Break

10:20AM 131620955 Paper Microfluidics Detection of Salmonella Using a Smartphone
Pei-Shih Liang, University of Arizona, Tucson, AZ (P. Liang, J. Yoon)

10:35AM 131620941 Rapid Detection of Foodborne Pathogens within Meat Utilizing a Smartphone
Pei-Shih Liang, University of Arizona, Tucson, AZ (P. Liang, J. Yoon, T. Park, W. Li)

10:50AM 131620707 Evaluation of the effect of combined storage techniques on the preservation of industrial sugars from sugar beets for bioproducts
Juan M. Vargas-Ramirez, North Dakota State University, Fargo, ND (J.M. Vargas-Ramirez, D.M. Haagenson, D.P. Wiesenbom)

11:05AM 131620073 Pipeline Hydro-Transportation of Agricultural Biomass: An Experimental Study
Mahdi Vaezi, University of Alberta, Edmonton, AB, Canada (M. Vaezi, A. Kumar)

11:15AM 131597797 Experimental study of air impingement blanching pretreatment and hot air drying of Lycium Qin Ma, China Agriculture University, Beijing, China (Q. Ma, L. Xie, Z. Gao, J. Bai, H. Ju)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 345
APPLICATION OF ECOLOGICAL ENGINEERING - Sponsored by BE-22
Moderator: Gregory S. Osborn, Univ of Arkansas, Fayetteville, AR
LOCATION: AMBASSADORS-WESTIN

10:15AM Break

10:20AM 131620955 Are Concentration-Discharge Relations Influenced by Ampicillin, florfenicol, sulfamethazine, and tylosin effect on biogas production and their degradation efficiency during anaerobic digestion
Janie D. McClurkin, Purdue University, West Lafayette, IN (R. Choudhary, S. Makwana, N. Dogra, P. Kohli, J. Haddock)

10:35AM 131599331 Dynamics of Deicing Salt and Trace Metals in Compost-Amended Tree Pit Soil
Maryam Kargar, McGill University, Montreal, QC, Canada (M. Kargar, W. Hendershot, G. Clark, P. Jutras, S.O. Prashe)

10:50AM 131618717 Ampicillin, florfenicol, sulfamethazine, and tylosin effect on biogas production and their degradation efficiency during anaerobic digestion
Shannon Mitchell, Washington State University, Pullman, WA (S. Mitchell, J. Ullman, A. Teel, R. Watts, C. Frear)

11:05AM 131620951 Are Concentration-Discharge Relations Influenced by Ampicillin, florfenicol, sulfamethazine, and tylosin effect on biogas production and their degradation efficiency during anaerobic digestion
Janie D. McClurkin, Purdue University, West Lafayette, IN (R. Choudhary, S. Makwana, N. Dogra, P. Kohli, J. Haddock)

11:15AM 131620073 Pipeline Hydro-Transportation of Agricultural Biomass: An Experimental Study
Mahdi Vaezi, University of Alberta, Edmonton, AB, Canada (M. Vaezi, A. Kumar)

11:20AM Break

11:30AM 131620707 Evaluation of the effect of combined storage techniques on the preservation of industrial sugars from sugar beets for bioproducts
Juan M. Vargas-Ramirez, North Dakota State University, Fargo, ND (J.M. Vargas-Ramirez, D.M. Haagenson, D.P. Wiesenbom)

11:45AM 131631155 Shelf-Life Improvement of Distillers Wet Grains with Solubles (DWGS) through Ionization
Janie D. McClurkin, Purdue University, West Lafayette, IN (R. Choudhary, S. Makwana, N. Dogra, P. Kohli, J. Haddock)

12:00PM 131619320 Mathematical modeling and polysaccharide content of ganoderma lucidum by hot air impingement drying
Jun-Wen Bai, China Agricultural University, Beijing, China (J. Bai, H. Xiao, Z. Lou, Z. Gao)

12:15PM 131608866 Experimental study of air impingement blanching pretreatment and hot air drying of Lycium Qin Ma, China Agriculture University, Beijing, China (Q. Ma, L. Xie, Z. Gao, J. Bai, H. Ju)
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<tr>
<th>Time</th>
<th>Paper #</th>
<th>Title/Authors</th>
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<tbody>
<tr>
<td>10:15AM</td>
<td>Introduction</td>
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<tr>
<td>10:20AM</td>
<td>131591334</td>
<td>Thermal Treatment of Huanglongbing Infected Trees using In-Field Solar Heating System</td>
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<td>Lav Khot, University of Florida, Lake Alfred, FL (L. Khot, S.E. Jones, P. Trivedi, R. Ehsani, N. Wang, J. Reyes-De-Corcuera)</td>
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<td>10:35AM</td>
<td>131620898</td>
<td>Novel Antimicrobial Combinations against Methicillin-resistant Staphylococcus pseudintermedius Biofilms using Microfluidic Platforms</td>
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<td>Suresh R. Neethirajan, University of Guelph, Guelph, ON, Canada (S.R. Neethirajan, M. DiCicco)</td>
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<td>10:50AM</td>
<td>131621949</td>
<td>Distributed Gene-Based Agricultural Diagnostics: Engineering an Inexpensive Handheld System for Field Use</td>
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<td>Daniel M. Jenkins, University of Hawaii, Honolulu, HI (D.M. Jenkins, R. Kubota, M. Keremane, W. Mahaffee)</td>
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<tr>
<td>11:05AM</td>
<td>131620911</td>
<td>Microfluidic Wound Model for Investigating Efficacy of Antimicrobial Agents Against Staphylococcus Pseudintermedius Biofilms</td>
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<td>Suresh R. Neethirajan, University of Guelph, Guelph, ON, Canada (S.R. Neethirajan, J. Terry)</td>
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<td>11:20AM</td>
<td>Break</td>
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<td>11:30AM</td>
<td>131592856</td>
<td>Parameters Associated with Fecal Indicator Bacteria Concentrations in the Water Column and Bottom Sediments of Stroubles Creek, Virginia, USA</td>
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<td>Hehuan Liao, Virginia Tech, Blacksburg, VA (H. Liao, L. Krometis, C. Hession, K. Kline, L. House, B. Badgely)</td>
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<td>12:00PM</td>
<td>131620318</td>
<td>Assessing relationships between in-stream water, sediment, and bank soil E. coli levels during storm events</td>
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<td>Michelle L. Soupir, Iowa State University, Ames, IA (M.L. Soupir, P. Pandey, R. Purvis, J. Litwiller)</td>
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SATURDAY, JULY 20

Tour #1
Kansas City Royals Baseball Game - YPC Social Event
Saturday, July 20 – 6:00PM-11:00PM
Location: Ball Park
Come on out and enjoy the All-American pastime...baseball! Relax in outfield box seats on the right field line while watching the KC Royals play the Detroit Tigers, and socialize with the Young Professionals of the Society. This event ticket includes transportation from the hotel and back, Outfield Box seating at the Kansas City Royals vs. Detroit Tigers game, and Loaded Value on your ticket to use as you wish for stadium food or merchandise. All meeting participants and guests are invited to this YPC planned event.
Cost: $59.00 includes entry to the game, $20 food coupon and bus transportation

SUNDAY, JULY 21

Event #1
YPC FUN RUN/WALK
Sunday, July 21 – 7:30AM-9:00AM
Location: ASABE Registration Desk - Sheraton
The Young Professional Community is sponsoring its eighth annual YPC Fun Run/Walk. Come join us for a 5k run or a 1 mile walk in a park across from the Westin Kansas City at Crown Center in downtown Kansas City! All proceeds will go towards supporting future YPC events focused on young member retention during the transition from student to professional. Please come out and show your support for the young members of ASABE while staying active. Don’t forget to register early because space is limited. All participants will receive a gift. We will meet at 7:30 AM at the registration desk. We will then walk to the start of the race and begin the event at 8:00 AM. A map of the running route can be found in the program. Prizes will be awarded to winners.
Cost: $20.00

ASABE FOUNDATION SILENT AUCTION
Sunday, July 21 thru Wednesday, July 24
Location: Sheraton Grand Ballroom - Sheraton
The ASABE Foundation Silent Auction will be opened for bidding beginning at 10:00AM on Sunday, July 21 and daily 8:00AM-5:00PM through Wednesday, July 24. Bidding ends at 3:00PM on Wednesday.

ALPHA EPSILON ANNUAL MEETING
Sunday, July 21 – 4:00PM-5:00PM
Location: Pershing East - Westin
Annual meeting for the honor society recognizing outstanding Agricultural and Biological Engineering students. Join us as we discuss the society’s latest activities and announce the recipients of this year’s chapter awards. Meeting attendees will be entered into a drawing for door prizes.

ASABE WELCOME RECEPTION
Sunday, July 21 – 4:30PM-6:00PM
Location: Sheraton Grand Ballroom - Sheraton
All meeting registrants are invited to attend our welcome reception. This is a good time to network with other attendees and to make further plans for dinner after the reception. The Kansas City Convention and Visitors Bureau will have a representative available to assist you in making your dining reservations.

ALUMNI RECEPTION OF COLLEGE OF BIOSYSTEMS ENGINEERING AND FOOD SCIENCE, ZHEJIANG UNIVERSITY
Sunday, July 21 – 6:30PM-10:30PM
Location: Pershing East - Westin
Alumni and visiting professors of College of Biosystems Engineering and Food Science, Zhejiang University are invited to enjoy a reception at the convention center and catch up with the old friends. Please send email to shaojin_wang@wsu.edu by July 19 if you plan to attend.

Event #3
WOMEN IN ASABE SOCIAL
Sunday, July 21 – 6:30PM-7:30PM
Location: Chouteau 1&2 - Sheraton
The Women in ASABE social is an informal mixer open to all female ASABE members. Hosted by Past-President Sonia Maassel Jacobsen, this event will provide a unique opportunity to meet, socialize and network with other women from across ASABE. Refreshments will be served. Registration is required but there is no charge for this event.
Cost: Preregistration is required.

Event #4
OKLAHOMA STATE UNIVERSITY BAE ALUMNI AND FRIENDS
Sunday, July 21 – 6:00PM-9:00PM
Location: Florella's Jack Stack Freight House Restaurant, 101 W 22nd St., Kansas City, MO
Alumni and friends of the Biosystems and Agricultural Engineering Department at Oklahoma State University are invited to gather for an informal barbeque dinner scheduled at Florella's Jack Stack's Freight House Restaurant, 101 W 22nd Street, within walking distance of the Crowne Center. Space is limited so reservations and prepayments are required. No online reservations accepted after July 15. Contact Nancy Rogers at nancy.rogers@okstate.edu or 405.744.8430 or see http://biosystems.okstate.edu for additional information.
Cost: $25.00
MONDAY, JULY 22

Event #5
PRAYER BREAKFAST
Monday, July 22 – 6:30AM-8:00AM
Location: Signboard 1 - Westin
The Fellowship of Christian Agricultural Engineers invites all meeting registrants, spouses and guests to the interdenominational prayer breakfast. The continental breakfast will begin promptly at 6:30AM and end at 8:00AM. Pre-registration and ticket is required.
COST: $30.00

ASABE GENERAL SESSION / RECOGNITIONS
KEYNOTE SPEAKER
Monday, July 22 – 8:00AM-9:30AM
Location: Century Ballroom - Westin
ASABE President Tony Kajewski welcomes each of you to the ASABE Annual International Meeting. Our keynote speaker is Helmi Ansari who is the director of Sustainability and Org. Capability at PepsiCo Foods Canada. The title of his presentation is “Sustainability & our efforts at PepsiCo Foods Canada”.

Event #6
SPOUSE / GUEST LUNCH
Monday, July 22 – 11:00 AM-2:30 PM
Location: Bus will depart from the Sheraton
A short ride via deluxe motor coach will bring you to the beautifully restored Webster House for a social gathering of old friends and new acquaintances. This 100+ year old building once served as a schoolhouse and is now a masterpiece of total renovation. You will have the opportunity to browse the first floor that is filled with boutiques and gift shops that feature a multitude of linens, tableware, ladies boutiques with accessories and jewelry, and children’s clothing, books and gifts. Two magnificent wide staircases (or the elevator) will bring you to the 2nd floor and charming restaurant where a light lunch will be served.

This event is open to anyone interested in this opportunity to connect with other guests of attendees and we welcome you.
COST: Included with the Spouse/Guest Registration Fee.
Additional guests may attend at an inclusive cost of $60.00.

FOUNTAIN WARS COMPETITION
Monday, July 22 – 2:00PM-8:30PM
Location: Pool - Westin
Fountain Wars is a competition aimed at students in their sophomore and junior years of study. It provides students with hands on experience in engineering design and most importantly the students have a great time. Teams are given two and a half hours to build a fountain that completes two technical tasks and provides an aesthetic display.

| Team Check in              | 2:00PM-2:30PM |
| Construction of Fountains  | 2:30PM-4:30PM |
| Final Construction and     |               |
| Safety Inspection          | 4:30PM-5:00PM |
| Team Test / Adjustment     |               |
| In Fountain                | 5:00PM-5:30PM |
| Competition                | 5:30PM-7:30PM |

Event #8
ASSOCIATION OF AGRICULTURAL, FOOD AND BIOLOGICAL ENGINEERS OF INDIAN ORIGIN (AABFEIO) MEETING
Monday, July 22 – 5:30PM-9:30PM
Location: Chicago A - Sheraton
The 2013 Annual Business meeting for the Association of Agricultural, Biological and Food Engineers of Indian Origin (AABFEIO) will be held from 5:30PM to 6:30PM on Monday, July 22 at the ASABE conference venue. Following the meeting, the association will have its annual dinner at a local restaurant from 7:00PM to 9:30PM.
COST: $25.00 Member / $15.00 Students

Event #9
ASSOCIATION OF KOREAN AGRICULTURAL, BIOLOGICAL AND FOOD ENGINEERS (AKABFE) MEETING
Monday, July 22 – 6:30PM-8:00PM
Location: Chicago B - Sheraton
Association of Korea Agricultural, Biological and Food Engineers (AKABFE) will have an annual meeting. A business meeting will take place and the association dinner will follow at a nearby restaurant.
COST: $30.00
ASSOCIATION OF OVERSEAS CHINESE AGRICULTURAL, BIOLOGICAL, AND FOOD ENGINEERS (AOCABFE) ANNUAL BUSINESS MEETING
Monday, July 22 – 5:15PM-6:30PM
Location: Chicago C
The AOCABFE annual meeting provides a platform for promoting and facilitating research and educational exchanges among researchers with Chinese origin or associations in the areas of agricultural, biological and food engineering. The ASABE meeting attendees with international collaboration interests are invited to attend the meeting as well. The AOCABFE activities in 2012-2013 will be reviewed and plans of action for 2013-2014 will be discussed. The AOCABFE Award Banquet will follow the business meeting from 6:30PM to 10:30PM at the New Peking Chinese Restaurant, 540 Westport Road, Kansas City, Missouri. Recognition and awards will be presented at the banquet.
COST: $65.00 Member; $20.00 Student Member.

IPC SOCIAL – FINNIGAN’S
Monday, July 22 – 6:00PM-10:00PM
Location: Finnegan’s
Gather with your fellow attendees and friends for an exciting evening at one of the most versatile and fun entertainment centers in Kansas City. Finnigan’s teams up with the adjacent AMF facility to offer this Summer Evening Picnic! Enjoy a picnic buffet of burgers & chicken breasts with all the fixings, and salads. Also included are activities available to you throughout the night. You can bowl, play a 19-hole miniature golf course, and ride a Go-Kart! You are welcome to do all three activities during the event.
This event is open to anyone interested in this opportunity to connect with other attendees and we welcome you. To keep the price down, we are suggesting you group together and take taxis to Finnigan’s and back. It is located in North Kansas City, about 4 ? miles from the hotel.
COST: Includes full buffet, activities, and all taxes and gratuities: $20.00 per person

IOWA STATE UNIVERSITY ABE RECEPTION
Monday, July 22 – 7:00pm-9:00PM
Location: Governors-Westin
Meet your old friends and make new friends and find out what is happening in the Department of Agricultural and Biosystems Engineering at Iowa State University.

KANSAS STATE UNIVERSITY ALUMNI RECEPTION
Monday, July 22 – 7:00PM-9:00PM
Location: Signboard 1 - Westin
Alumni and friends are invited to renew friendships, revisit design legacies, and learn about some unique opportunities within the Biological and Agricultural Engineering Department. Faculty and students will be available to provide departmental updates and share happenings at Kansas State University and in Manhattan (Aggieville).

TEXAS A&M UNIVERSITY RECEPTION
Monday, July 22 – 7:00PM-9:00PM
Location: Milano Italian Dining, 2450 Grand, Crown Center Lower Level
The Biological and Agricultural Engineering Department invites you to join us in a reception for all Aggies and their supporters. We will meet at 7:00 p.m. at Milano Italian Dining, 2450 Grand, Crown Center Lower Level (816-398-4825) for complimentary appetizers and a cash bar. For those who wish, we will dine together off the menu at 8:00 p.m. Gather with us to enjoy an update on the department!

VIRGINIA TECH ALUMNI & FRIENDS SOCIAL
Monday, July 22 – 8:00PM-10:00PM
Location: Signboard 2 - Westin
The Biological Engineering Department at Virginia Tech cordially invites alumni and friends to this gathering on Monday evening. Come enjoy some refreshments and catch up on the latest happenings in the department and at Virginia Tech!

UNIVERSITY OF ILLINOIS ALUMNI AND FRIENDS RECEPTION
Monday, July 22 – 8:30PM-10:30PM
Location: Bentons - Westin
Alumni and friends of the University of Illinois are invited to attend. We will feature a hosted bar and snacks. Please come and share this opportunity to visit and hear what is new with the Orange and blue I-L-L-I-N-I!

TUESDAY, JULY 23

PURDUE BREAKFAST
Tuesday, July 23 – 7:00AM-8:00AM
Location: Signboard 1 - Westin
Purdue University’s Dean of Agriculture, the Agricultural and Biological Engineering Department, and the Engineering Alumni Association invite all alumni and friends to their complimentary breakfast. Reservations are required!! Call 765-494-1162, fax 765-496-1115, or email peerb@purdue.edu

SILENT AUCTION
Place your bids now!
Auction closes 3:00PM Wednesday
ASABE BUSINESS MEETING
Tuesday, July 23 – 12:30PM-1:30PM
Location: Century Ballroom - Westin
President Tony Kajewski and President-Elect Lalit Verma will preside over the society’s update and business meeting.

ORDER OF THE ENGINEER INDUCTION CEREMONY
Tuesday, July 23 – 3:00PM-5:00PM
Location: Century Ballroom - Westin
Engineering graduates and registered engineers are invited to accept the Obligation of the Engineer and a stainless steel ring, which is worn on the little finger of the engineer’s working hand. All graduates of ABET accredited engineering programs; seniors in ABET accredited programs within two academic years of graduation; licensed PEs; and members of the Canadian Calling by reciprocity are invited to join the Order. All inductees must be present to accept their certificate and ring at the induction ceremony. The cost of entering the Order is $10.00 and inductees may register with Tina Schultz at schultz@asabe.org before the meeting or in person at the membership booth at the meeting. Learn more about the Order here - http://www.order-of-the-engineer.org/.

ASABE FELLOWS INDUCTION CEREMONY/RECEPTION
Tuesday, July 23 – 6:00PM-7:30PM
Location: Century Ballroom - Westin
All registrants are invited to this special recognition ceremony and reception honoring the 2013 ASABE Fellows. ASABE defines a Fellow as a member of unusual professional distinction, with outstanding and extraordinary qualifications and experience in, or related to, the field of agricultural, food, or biological systems engineering.

ASABE ROBOTICS STUDENT DESIGN COMPETITION
Tuesday, July 23 – 8:00AM-12:00PM
Location: Sheraton Grand Ballroom - Sheraton
The American Society of Agricultural & Biological Engineers Robotics Competition is a student design competition that was conceived in 2006. The aim of the competition is to encourage undergraduate as well as graduate students to develop innovative robotic solutions to real life problems in the agricultural arena. The competition travels with the Annual International Meeting, and hence, the solutions must allow transportation in airplanes. The challenge will be communicated through the website and digital flyers describing the rules, requirements, limitations, deadlines and demonstration procedures.

The competition is open to students in one or more departments from a single University. There is no maximum number of team members per team, so multiple teams from a single university are allowed.

<table>
<thead>
<tr>
<th>Demonstrations</th>
<th>8:00AM-10:00AM</th>
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<tr>
<td>Competition</td>
<td>10:00AM-12:00PM</td>
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ASABE Career Fair
Tuesday, July 23
9:30AM-12:00PM
Sheraton Ballroom
Event #15  
**ASABE FOUNDATION DINNER AT THE AMERICAN JAZZ MUSEUM**  
**Tuesday, July 23 – 7:15PM-10:00PM**  
**Location:** Offsite. Bus transportation is provided. Buses will depart from the Westin  
Located in the historic 18th & Vine Jazz District of Kansas City, this distinctive museum showcases the sights and sounds of American jazz. The development and heyday of this exceptional American art form becomes genuine through four Masters. See Charlie Parker’s saxophone, one of Louis Armstrong’s trumpets, the sequined gown worn by Ella Fitzgerald, and memorabilia from Duke Ellington. While we will enjoy a typical Kansas City barbecue buffet in the beautiful atrium area, the museum will be open for us to view and experience the multiple exhibits on display. Docents will help us fully appreciate the compelling collections of rare photos, sheet music, posters, costumes, artifacts, album covers and listening kiosks. Interactive exhibits will bring American jazz to life. The American Jazz Museum is significant in the community, hosting thousands of world-class live jazz performances and countless educational programs as it promotes the historic and cultural relevance of jazz music and arts. This is a uniquely typical Kansas City Experience!  
Dinner and transportation to and from the Jazz Museum—and the company of some great folks—are all included  
**COST:** $100.00/person

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**WEDNESDAY, JULY 24**  
Event #16  
**ASABE AWARDS LUNCHEON**  
**Wednesday, July 24 – 12:30PM-2:30PM**  
**Location:** Century Ballroom - Westin  
Plan to attend the most important recognition event of the year. The installation of ASABE’s 2013 President, Lalit Verma, will immediately follow the awards presentation.  
Awards to be presented are:  
**COST:** Included with full meeting registration  
$40.00 additional tickets

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Event #17  
**GALE A. HOLLOWAY MEMORIAL GOLF OUTING**  
**Wednesday, July 24 – 3:00PM-??**  
**Location:** Offsite – Meet at ASABE Registration Desk  
The Gale A. Holloway Memorial Golf Outing will be on Wednesday, July 24 at 3:00PM. Prepare yourself for an unparalleled golfing experience! Hillcrest Golf and Country Club provides fun, but challenging play to golfers of all skill levels. With rolling fairways, strategic water hazards and white-sand bunkers, we have everything you need to test your game. Be sure to add this fun event to your AIM registration form.  
**COST:** $100.00 per person
Tour #1
KANSAS CITY ROYALS BASEBALL GAME - YPC SOCIAL EVENT
Saturday, July 20 – 6:00PM-11:00PM
Location: Ball Park
Come on out and enjoy the All-American pastime...Baseball! Relax in the Outfield Box seats on the Right Field line while watching the KC Royals play the Detroit Tigers, and socialize with the Young Professionals of the Society. This event includes transportation from the hotel and back, Outfield Box seating at the Kansas City Royals vs. Detroit Tigers game, and Loaded Value on your ticket to use as you wish for stadium food or merchandise. All meeting participants and guests are invited to this YPC planned event.
Cost: $59.00 includes entry to the game, $20 food coupon and bus transportation. Please plan on arriving 15 minutes prior to departure time at Bus Staging area of the Sheraton.

Tour #2
KANSAS CITY HIGHLIGHTS TOUR
Sunday, July 21 – 1:00PM-4:00PM
Location: Bus departs from the Sheraton
Everything is up to date in Kansas City! The city is a lively mix of beautiful old architecture and newly completed state-of-the-art projects in the downtown area. Enjoy the sights, learn a little history and marvel at the hidden treasures on this downtown driving tour. See the Federal Courthouse, the Power and Light Entertainment District, the Culture Center for Performing Arts and the Sprint Arena. Stop at Lewis and Clark Point for the opportunity to visit the monument celebrating the 150th anniversary of the explorers in Kansas City where they viewed the convergence of the Kaw and Missouri Rivers. See the Crown Center (home of Hallmark Cards), the office and entertainment center adjacent to Union Station – a magnificent Beaux Arts building recently restored to house shops, restaurants and Science City – and drive through Country Club Plaza with its unique Spanish architecture and 14 blocks of shopping! The fountains and gardens throughout the city will be spectacular at this time of year, as is the drive along Ward Parkway, the city’s most beautiful boulevard, where you can view the stately homes and estates of the city’s most prominent citizens. This tour will give you an invaluable overview of the city and introduce you to places you may want to go back and visit in more depth during your stay.
Cost: $35 includes deluxe coach bus and guide

Tour #3
IPC SOCIAL – FINNIGAN’S
Monday, July 22 – 6:00PM-10:00PM
Location: Finnegan’s
Gather with your fellow attendees and friends for an exciting evening at one of the most versatile and fun entertainment centers in Kansas City. Finnigan’s teams up with the adjacent AMF facility to offer this Summer Evening Picnic! Enjoy a picnic buffet of burgers & chicken breasts with all the fixings, and salads. Also included are activities available to you throughout the night. You can bowl, play a 19-hole miniature golf course, and ride a Go-Kart! You are welcome to do all three activities during the event.
This event is open to anyone interested in this opportunity to connect with other guests of attendees and we welcome you.
COST: Includes full buffet, activities, and all taxes and gratuities: $20.00 per person

Tour #4
HARLEY DAVIDSON TOUR
Tuesday, July 23 – 9:00AM-12:00PM
Location: Bus departs from the Sheraton
Tour the Harley-Davidson Plant near Kansas City to observe how sportsters, dynaglides and v-rods are assembled. The Harley-Davidson Vehicle & Powertrain Operations plant has the distinction of being the only Harley-Davidson facility to produce an entire motorcycle on site – the groundbreaking VRSCA V-Rod®. The tour center features a series of displays that guide you through the various manufacturing and assembly processes and illustrate the individual and collaborative skills necessary to produce each motorcycle. You may also have the chance to sit on current production motorcycles. Wear closed toe shoes.
Government issued ID (driver’s license or passport) is required.
COST: $38.00 per person to cover transportation

Event #6
SPOUSE / GUEST LUNCH
Monday, July 22 – 11:00 AM-2:30 PM
Location: Bus transportation will be provided to the Webster House
A short ride via deluxe motor coach will bring you to the beautifully restored Webster House for a social gathering of old friends and new acquaintances. This 100+ year old building once served as a schoolhouse and is now a masterpiece of total renovation. You will have the opportunity to browse the first floor that is filled with boutiques and gift shops that feature a multitude of linens, tableware, ladies boutiques with accessories and jewelry, and children’s clothing, books and gifts. Two magnificent wide staircases (or the elevator) will bring you to the 2nd floor and charming restaurant where a light lunch will be served.
This event is open to anyone interested in this opportunity to connect with other guests of attendees and we welcome you.
COST: Included with the Spouse/Guest Registration Fee. Additional guests may attend at an inclusive cost of $60.00.

SILENT AUCTION
Place your bids now!
Auction closes 3:00PM Wednesday
Auction closes 3:00PM Wednesday
THE HALLMARK VISITOR’S CENTER  
Wednesday, July 24 – 9:30AM-??
This is a casual tour for anyone who wishes to make a group visit to the Hallmark Center and take advantage of having a guided tour. The center is near our hotel and we plan to meet around 9:30 AM to be there when it opens at 10:00 AM. T. Joyce C. Hall arrived in Kansas City in 1910 with two shoeboxes full of postcards and a dream. Today, the company he founded produces more than 2 billion greeting cards each year in more than 30 languages for more than 100 countries. The Hallmark Visitors Center at Crown Center tells the story behind the world’s largest greeting card company with 14 remarkable exhibits. See historical artifacts that reflect various eras and trends throughout 20th century America into the new millennium.
Cost: Free admission, however if you do not want to walk you can take a short taxi ride for about $10

Tour #6
INDEPENDENCE – A VISIT WITH THE PRESIDENT  
Wednesday, July 24 – 2:30PM-6:00PM
Location: Offsite – Tour departs from the Sheraton
Before departing Kansas City, take this opportunity for the short drive to visit Independence, home of Harry Truman, the 33rd President of the United States. See the Old Square noted for the lovely 1880’s Court House, and the starting location of the western trails. One of the highlights of this tour is a stop at the Truman Library and Museum, one of only 13 Presidential Libraries in the United States. This museum has exhibits from the Truman Presidential era and a reproduction of the Oval Office as it was during Truman’s presidential term. Also learn the story of the Thomas Hart Benton mural, Independence and the Opening of the West.
COST: $45.00 per person includes transportation, guide, and admission with guided tour of the museum

Tour #7
GRAIN INSPECTION & INDUSTRY TOUR  
Wednesday, July 24 – 2:30PM-6:00PM
Location: Buses depart from the Sheraton
This technical tour includes two stops to observe grain inspection procedures and systems at a bakery where grain products are produced for food service providers. Visit the Technology and Science Division (TSD) at the National Grain Center in Kansas City, MO where all reference standards established by the Federal Grain Inspection Service (FGIS) for facilitating the marketing of grains, rice, and commodities produced within the USA are maintained. TSD provides technical leadership, training and support services, inspection methods development, specialized analytical tests, national quality assurance and standardized processes, and final appeal inspections for field based testing services. Divisions within TSD include analytical chemistry, biotechnology and analytical services, inspection instrumentation, and board of appeals and review.

The second stop will be at Best Harvest Bakeries which produces baked goods that supply nearly 700 McDonald’s Restaurants in six states through the Midwestern USA, the U.S. Military, Kansas Speedway and many other food service providers. Their products include white, egg-flavored, wheat, rye, sourdough, potato roll, hoagie roll, hot dog bun, Kaiser, and sausage rolls with many different customer specific treatments. They produce up to 22 million dozen buns each year using 20 million pounds of flour and 2.5 million pounds of sugar in their 29,000 square feet high-speed bakery. Closed toe shoes are required.
COST: $38.00 per person includes transportation

Feeling lucky? Even if you aren’t, a modest donation to the Foundation could win one or more of three great new iPads (either an iPad mini or one of two iPads with Retina display). They are being raffled off in the Silent Auction area in the Sheraton Grand Ballroom. What a fun way to support the ASABE Foundation.

The first drawing will be held, Tuesday July 23rd at noon in the Silent Auction area. The winner will choose between the iPad with Retina display or the iPad mini. The following two drawings will be held after the Awards Luncheon (again in the Silent Auction area) on Wednesday, July 24, with the second winner choosing between the remaining iPads.
Tickets are $10 each or three for $25. You need not be present to win. See Linda Young in the Silent Auction area at the Sheraton Grand Ballroom to purchase your tickets today.

ASABE Foundation
THREE-DRAW RAFFLE
Win one of three iPads!
These committees are scheduled to meet in conjunction with the 2013 ASABE Annual International Meeting. An asterisk (*) by a specific committee indicates that the committee is meeting in closed session. Interested persons are welcome to all other committee meetings. Note that the schedule is subject to change. Meetings will be held at the Sheraton Kansas City at Crown Center and Westin Kansas City at Crown Center in Kansas City, Missouri. Committees are listed by day, time and then room and hotel.

UPDATED June 28, 2013

EXECUTIVE

ASABE Board of Trustees
SUNDAY, 10:30am-1:30pm – Pershing South-Westin
THURSDAY, 10:00am-3:00pm – Benton A&B-Westin

Foundation Board of Trustees
WEDNESDAY, 9:00am-12:00am – Signboard 1-Westin

Foundation Board of Trustees Orientation
MONDAY, 12:15pm-2:15pm – Chicago B-Sheraton

E-02 Constitution and Bylaws
Not Meeting –

E-05 Marketing and External Communications
MONDAY, 12:15pm-2:15pm – Penn Valley-Westin

E-05/1 E-Week Coordinating Committee
TUESDAY, 11:00am-12:00pm – Governors-Westin

E-05/2 FFA Coordinating Committee
TUESDAY, 12:15pm-2:15pm – Governors-Westin

E-07 Issues Management & Social Action
TBA

E-08 Fellows
TUESDAY, 7:00am-8:00am – Penn Valley-Westin

E-20 Finance Committee
SUNDAY, 9:00am-10:00am – Pershing East-Westin

*Nominating Committee 2013
MONDAY, 12:15pm-2:15pm – Benton B-Sheraton
WEDNESDAY, 8:00am-9:15am – Mission-Westin

MEETINGS COUNCIL

SUNDAY, 1:30pm-3:30pm – Pershing West-Westin
THURSDAY, 7:00am-10:00am – Van Horn B-Sheraton

MEMBERSHIP DEVELOPMENT COUNCIL

SUNDAY, 1:30pm-3:30pm – Pershing North-Westin
THURSDAY, 8:00am-10:00am – Van Horn A-Sheraton

M-102 Awards Coordinating
WEDNESDAY, 4:00pm-5:00pm – Northrup-Sheraton

M-111 John Deere/McCormick-Case Gold Medal
Not Meeting

*M-112 Massey-Ferguson Gold Medal
Not Meeting

*M-113 Engineering Concept of the Year
Not Meeting

M-114 Young Researcher (New Holland)
Not Meeting

M-115 Young Educator (A.W. Farrall)
Not Meeting

M-116 Young Designer (Sunkist)
Not Meeting

M-117 Young Extension Worker
Not Meeting

M-122 Stewart Engineering Humanities
Not Meeting

*M-131 Fellows Screening
Not Meeting

*M-151 Henry Giese ASABE Structures & Environment
Not Meeting

M-152 ADS/Hancor Soil & Water Engineering
Not Meeting

*M-154 International Food Engineering Award
Not Meeting

*M-155 Gunlogson Countryside Engineering
Not Meeting

*M-156 Kishida International
Not Meeting

M-157 SMV Technologies Ergonomics, Safety and Health
Not Meeting

M-158 Mayfield Cotton Engineering
Not Meeting

M-159 Award for the Advancement of Surface Irrigation
Not Meeting

M-160 Evelyn E. Rosentreter Standards Award
Not Meeting

M-161 PEI Professional Engineer of the Year
Not Meeting

M-162 Heermann Sprinkler Irrigation Award
Not Meeting

M-163 Gale A. Holloway Professional Development Award
Not Meeting

M-164 Yoerger Preprofessional Engineer of the Year Award
Not Meeting

M-165 Pharos of Alexandria Global Learning Award
Not Meeting

M-166 James R. and Karen A. Gilley Academic Leadership Award
Not Meeting

M-170 Historic Commemoration
MONDAY, 5:15pm-7:00pm – Benton B-Sheraton

INTERNATIONAL AFFAIRS

INTL-601 International Affairs
TUESDAY, 5:15pm-7:00pm – Empire A-Sheraton

SECTION STEERING COMMITTEE

MDC-S02 SECTION STEERING
MONDAY, 5:15pm-7:00pm – Shawnee-Westin

STUDENT ORGANIZATION AND AWARDS

P-120 Student Organizations
TUESDAY, 8:00am-9:15am – Empire A-Sheraton

P-121 G.B. Gunlogson Student Environ Design Competition
WEDNESDAY, 7:30am-9:30am – Governors-Westin

P-122 Boyd-Scott Graduate Research Award
TBA

P-123 Student Paper Competition (K.K. Barnes)
TBA

P-124 AGCO National Student Design Competition
Not Meeting

P-125 AEM Student Trophies Competition
TUESDAY, 7:00am-8:00am – Van Horn C-Sheraton

P-126 Rules Subcommittee
TBA
Committees to Convene

P-127 Robotics Student Design Competition
TBA

PUBLICATIONS COUNCIL
SUNDAY, 1:30pm-3:30pm – Pershing East-Westin
THURSDAY, 8:00am-10:00am – Chouteau A&B-Westin

P-511 Refereed Publications
WEDNESDAY, 2:30pm-3:30pm – Fremont-Sheraton

P-513 Resource Editorial Board
MONDAY, 12:15pm-2:15pm – Fremont-Sheraton

P-515 Textbooks and Monographs
TUESDAY, 8:00am-9:15am – Fremont-Sheraton

STANDARDS COUNCIL
SUNDAY, 1:30pm-3:30pm – Pershing South-Westin
THURSDAY, 8:00am-10:00am – Fremont-Sheraton

T-01 Standards (Policy & Adoption)
WEDNESDAY, 4:30pm-6:30pm – Pershing East-Westin

T-13 International Standardization
MONDAY, 6:30pm-7:30pm – Regents-Westin

BIOLOGICAL ENGINEERING DIVISION
BE-01 Executive/BE-02 Steering
TUESDAY, 5:15pm-7:00pm – Fremont-Sheraton

BE-05 Publications
Not Meeting –

BE-22 Ecological Engineering
MONDAY, 12:15pm-2:15pm – Mission-Westin

BE-23 Biosensors
MONDAY, 12:15pm-2:15pm – Shawnee-Westin

BE-24 Soil and Groundwater Remediation
TUESDAY, 12:15pm-2:15pm – Fremont-Sheraton

BE-26 Modeling Biological Processes
TUESDAY, 8:00am-9:15am – Chouteau B-Sheraton

BE-28 Bioconversion and Bioprocesses
TUESDAY, 7:00pm-9:00pm – Fremont-Sheraton

EDUCATION DIVISION
ED-01 Executive/Steering
WEDNESDAY, 6:00am-7:30am – Penn Valley-Westin

ED-04 Refereed Publications Review and Paper Awards
TBA

ED-203 Undergraduate & Graduate Instruction
TUESDAY, 5:15pm-7:00pm – Senators-Westin

ED-204 Engineering & Technology Accreditation
TUESDAY, 8:00am-9:15am – Senators-Westin

ED-205 Engineering Technology & Management Education
TUESDAY, 5:15pm-7:00pm – Penn Valley-Westin

ED-206 Agr Tech & Mgmt Curriculum Review & Program Recog
TUESDAY, 5:15pm-7:00pm – Penn Valley-Westin

ED-208 Extension
TBA

ED-210 Academic Program Administrators
MONDAY, 5:45pm-7:00pm – Fremont-Sheraton

ED-210/1 Steering
MONDAY, 5:15pm-5:45pm – Fremont-Sheraton

ED-211 Undergraduate Engineering Prog & Instructional Chairs
TUESDAY, 7:00am-8:00am – Roanoke-Sheraton

ED-412 Professional Ethics
TUESDAY, 7:00am-8:00am – Governors-Westin

ED-414 Engineering Licensure
MONDAY, 12:15pm-2:15pm – Roanoke-Sheraton

ED-416 Continuing Professional Development
MONDAY, 5:15pm-6:00pm – Pershing West-Westin

ERGONOMICS, SAFETY AND HEALTH
ESH-01 Executive / Oversight
TBA

ESH-02 Policy and Forward Planning
WEDNESDAY, 8:00am-9:30am – Signboard 2-Westin

ESH-03 Standards
TUESDAY, 6:30pm-8:00pm – Regents-Westin

ESH-03/1 External Standard Development
TUESDAY, 6:30pm-8:00pm – Regents-Westin

ESH-03/2 Internal Standard Development
TUESDAY, 6:30pm-8:00pm – Regents-Westin

ESH-04 Technology Exchange
TBA

ESH-04/1 Journal of Agricultural Safety and Health
TBA

ESH-04/2 Farmers With Disabilities Technology Exchange
TBA

ESH-05 Nominations
TBA

FOOD AND PROCESS ENGINEERING INSTITUTE
FPE-01/02 Executive & Steering
SUNDAY, 3:30pm-5:30pm – Pershing South-Westin

FPE-01/02 Executive & Steering
WEDNESDAY, 2:30pm-5:00pm – Mission-Westin

FPE-02/2 Nominating
TBA

FPE-03 Standards Group
MONDAY, 5:15pm-7:00pm – Chouteau B-Sheraton

FPE-04 Publications Group/Refereed Publication
WEDNESDAY, 3:30pm-5:00pm – Pershing South-Westin

FPE-06 General Program
TBA

FPE-701 Physical Properties of Ag & Biological Products
MONDAY, 6:30am-7:30am – Van Horn A-Sheraton

FPE-702 Crop & Feed Processing & Storage
TUESDAY, 12:15pm-2:15pm – Benton A-Sheraton

FPE-703 Food Processing
TUESDAY, 5:15pm-7:00pm – Shawnee-Westin

FPE-707 Food and Organic Waste Management & Utilization
TUESDAY, 7:00am-8:00am – Shawnee-Westin

FPE-709 Biomass Energy & Industrial Products
TUESDAY, 8:00am-9:15am – Shawnee-Westin

FPE-712 Speciality Crop Post-harvest Engineering
TUESDAY, 8:00am-9:15am – Roanoke-Westin
<table>
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### INFORMATION AND ELECTRICAL TECHNOLOGIES DIVISION

**IET-01 Executive**  
SUNDAY, 1:30pm-3:30pm – Regents-Westin

**IET-02 Steering**  
WEDNESDAY, 2:30pm-5:00pm – Pershing North-Westin

**IET-03 Standards**  
MONDAY, 6:30am-7:30am – Benton A-Sheraton

**IET-04 Publications Review and Paper Awards**  
TUESDAY, 7:00am-8:00am – Chouteau A-Sheraton

**IET-06 Programs**  
TBA

**IET-07 Forward Planning & Structure**  
MONDAY, 12:15pm-2:15pm – Van Horn B-Sheraton

**IET-217 Computational Methods, Simulations, and Applications**  
TUESDAY, 5:15pm-7:00pm – Pershing South-Westin

**IET-254 Emerging Information Systems**  
TUESDAY, 12:15pm-2:15pm – Pershing South-Westin

**IET-312 Machine Vision**  
TUESDAY, 8:00am-9:15am – Chouteau A-Sheraton

**IET-318 Mechatronics and Biorobotics**  
MONDAY, 5:15pm-7:00pm – Van Horn C-Sheraton

**IET-348 Electromagnetics and Spectroscopy**  
MONDAY, 5:15pm-7:00pm – Empire A-Sheraton

**IET-353 Instrumentation & Controls**  
MONDAY, 7:00pm-9:00pm – Empire A-Sheraton

**IET-343 Electrical Utilization & Energy Apps**  
TBA

**IET-343/1 ASABE-IES Ag Lighting Group**  
MONDAY, 12:15pm-2:15pm – Van Horn C-Sheraton

**IET-343/2 Electric Fence Controller**  
TBA

**IET-343/3 Fan Testing**  
TBA

**IET-343/4 Standby Electric Power**  
TBA

**IET-345 Electrical Code for Agriculture**  
TBA

**IET-441 Milk Handling Equipment**  
TBA

### POWER AND MACHINERY DIVISION

**PM-01 Executive/ PM-02 Steering**  
SUNDAY, 6:00pm-8:00pm – Van Horn C-Sheraton

**PM-01 Executive/ PM-02 Steering**  
WEDNESDAY, 7:00am-8:00am – Mayors-Westin

**PM-03 Standards**  
WEDNESDAY, 8:00pm-10:00pm – Pershing East-Westin

**PM-03/2 Farm Materials Handling**  
TBA

**PM-03/3 Farm Materials Transport**  
TBA

**PM-04 Publications Review**  
TUESDAY, 7:30am-8:45am – Pershing East-Westin

**PM-05 Nominating**  
TBA

**PM-23 & US TAG ISO/TC23**  
WEDNESDAY, 7:00pm-8:00pm – Pershing East-Westin

MONDAY, 4:30pm-5:30pm – Regents-Westin

**PM-23/19 Agricultural electronics and US TAG ISO/TC23/SC19**  
TUESDAY, 2:30pm-4:30pm – Regents-Westin

**PM-23/19/1 Electronics for Mobile Equipment (ISOBUS)**  
TBA

**PM-23/19/3 Electronics for Identification (Animal)**  
TBA

**PM-23/19/5 Standards for Wireless Communication in Agriculture**  
TBA

**PM-23/19/7 Testing Proc for Positioning & Guidance Sys in Ag**  
TBA

**PM-23/2 Ag Machinery - Common Tests and US TAG ISO/TC23/SC2**  
TUESDAY, 4:30pm-6:30pm – Mayors-Westin

**PM-23/2/1 Environment Within Ag Vehicle Enclosures**  
TBA

**PM-23/2/2 ATSC ROPS Subcommittee**  
MONDAY, 9:30am-10:30am – Regents-Westin

**PM-23/3 Ag Machinery - Operator Comfort & US TAG ISO/TC23/SC3**  
TUESDAY, 10:30am-12:30pm – Regents-Westin

**PM-23/3/1 Implement Jacks [PM-03/5]**  
Not Meeting

**PM-23/4 Tractors and US TAG ISO TC23/SC4**  
WEDNESDAY, 8:00am-12:00pm – Regents-Westin

**PM-23/4/1 Agricultural Equipment Braking**  
TUESDAY, 2:30pm-4:30pm – Mayors-Westin

**PM-23/4/3 Lighting & Marking**  
MONDAY, 2:30pm-4:30pm – Mayors-Westin

**PM-23/4/4 Tractor and Implement Hydraulics**  
TUESDAY, 10:30am-12:30pm – Mayors-Westin

**PM-23/4/5 Tractor Implement Interface/PTO**  
TUESDAY, 8:00am-10:00am – Regents-Westin

**PM-23/6 Application Sys & US TAG ISO/TC23/SC6**  
MONDAY, 5:30pm-6:30pm – Mayors-Westin

**PM-23/6/1 Liquid Materials Application**  
MONDAY, 4:30pm-5:30pm – Mayors-Westin

**PM-23/6/2 Aviation**  
TBA

**PM-23/6/3 Dry Materials**  
TBA

**PM-23/6/4 Spray Modeling and Application Techniques**  
TUESDAY, 5:15pm-7:00pm – Governors-Westin

**PM-23/7 Harvest and US TAG ISO/TC23/SC7**  
WEDNESDAY, 8:00am-9:30am – Mayors-Westin

**PM-23/7/1 Grain Harvesting**  
TBA

**PM-23/7/2 Forage & Biomass Engineering**  
TUESDAY, 4:30pm-6:30pm – Regents-Westin

**PM-23/7/3 Cotton Engineering**  
TUESDAY, 12:30pm-2:15pm – Regents-Westin

**PM-42 Cultural Practices Equipment**  
TBA

**PM-43 Farm Machinery Management**  
TBA

**PM-45 Soil Dynamics Research**  
MONDAY, 5:15pm-7:00pm – Empire B-Sheraton

**PM-47 Distinguished Lecture Series**  
TBA

**PM-48 Specialty Crop Production Engineering**  
TUESDAY, 8:00am-9:15am – Roanoke-Westin
Committees to Convene

PM-52 Turf & Landscape Equipment Systems
TBA

PM-54 Precision Agriculture
MONDAY, 5:15pm-7:00pm – Penn Valley-Westin

PM-58 Agricultural Equipment Automation
TUESDAY, 6:30pm-8:00pm – Mayors-Westin

STRUCTURES AND ENVIRONMENT DIVISION
SE-01 Executive
SUNDAY, 3:30pm-5:30pm – Regents-Westin

SE-02 Steering
WEDNESDAY, 5:15pm-7:00pm – Chouteau A-Sheraton

SE-03 Standards
TUESDAY, 5:15pm-7:00pm – Pershing Westin

SE-04 Paper Awards
TBA

SE-05 Publications Review
TBA

SE-06 Program
TBA

SE-07/1 Agri-Industrial Facility Design and Operation
MONDAY, 5:15pm-7:00pm – Empire C-Sheraton

SE-20 Structures Group
MONDAY, 7:00pm-9:00pm – Empire C-Sheraton

SE-20/4 Bulk Solids Handling and Storage
MONDAY, 5:15pm-7:00pm – Empire C-Sheraton

SE-30 Environmental Quality & Control Group
WEDNESDAY, 2:30pm-5:00pm – Chouteau A-Sheraton

SE-301 Environmental Physiology
TUESDAY, 7:00am-8:00am – Pershing South-Westin

SE-302 Environment of Animal Structures
MONDAY, 5:15pm-7:00pm – Chouteau A-Sheraton

SE-303 Environment of Plant Structures
MONDAY, 12:15pm-2:15pm – Chouteau A-Sheraton

SE-305 Environment Air Quality
TUESDAY, 7:00pm-9:00pm – Pershing South-Westin

SE-40 Facilities & Systems Group
WEDNESDAY, 2:30pm-5:00pm – Chouteau B-Sheraton

SE-402 Beef Facilities
MONDAY, 12:15pm-2:15pm – Chouteau B-Sheraton

SE-403 Dairy Housing
TUESDAY, 12:30pm-2:15pm – Pershing North-Westin

SE-404 Swine Housing
TUESDAY, 7:00am-8:00am – Pershing North-Westin

SE-405 Poultry Housing
MONDAY, 12:15-2:15pm – Empire C-Sheraton

SE-412 Agric. Byproduct & Animal Mortality Mgmt Systems
MONDAY, 5:15pm-7:00pm – Roanoke-Westin

SE-413 Animal Welfare & Care
TUESDAY, 7:00am-8:00am – Pershing South-Westin

SE-414 Renewable Power Generation Committee
TUESDAY, 5:15pm-7:00pm – Pershing East-Westin

SOIL AND WATER DIVISION
SW-01 Executive
SUNDAY, 3:30pm-5:30pm – Pershing North-Westin

SW-02 Steering
WEDNESDAY, 7:00pm-9:00pm – Empire B-Sheraton

SW-03 Standards
WEDNESDAY, 6:00am-7:30am – Empire B-Sheraton

SW-03/2 US TAG ISO/TC/23/SC18
WEDNESDAY, 2:30pm-5:00pm – Empire B-Sheraton

SW-04 Program
SUNDAY, 3:30pm-5:30pm – Pershing North-Westin

SW-05 Publications Review
MONDAY, 5:15pm-7:00pm – Van Horn B-Sheraton

SW-06 Paper Awards
TUESDAY, 7:00pm-9:00pm – Van Horn B-Sheraton

SW-07 Nomenclature
MONDAY, 5:15pm-7:00pm – Benton A-Sheraton

SW-09 Forward Planning
SUNDAY, 7:00am-8:00am – Van Horn A-Sheraton

SW-21 Hydrology Group
TUESDAY, 5:15pm-8:00pm – Empire B-Sheraton

SW-22 Erosion Control Group
MONDAY, 7:00pm-9:00pm – Liberty-Westin

SW-223 Erosion Control Research
MONDAY, 7:00pm-9:00pm – Liberty-Westin

SW-224 Pollution by Sediment
MONDAY, 7:00pm-9:00pm – Liberty-Westin

SW-225 Conservation Systems
MONDAY, 7:00pm-9:00pm – Liberty-Westin

SW-23 Drainage Group
TUESDAY, 5:15pm-7:00pm – Empire B-Sheraton

SW-24 Irrigation Group
MONDAY, 6:30am-7:30am – Empire A-Sheraton

SW-24 Irrigation Group
WEDNESDAY, 2:30pm-5:00pm – Empire A-Sheraton

SW-241 Sprinkler Irrigation
TUESDAY, 7:00AM-8:00AM – Benton A-Sheraton

SW-242 Surface Irrigation
MONDAY, 5:15pm-7:00pm – Van Horn A-Sheraton

SW-243 Irrigation Water Supply & Conveyance
MONDAY, 5:15pm-7:00pm – Van Horn B-Sheraton

SW-244 Irrigation Management
TUESDAY, 5:15pm-7:00pm – Van Horn B-Sheraton

SW-245 Microirrigation
TUESDAY, 8:00am-9:15am – Benton B-Sheraton

SW-246 Turf & Landscape Irrigation
MONDAY, 12:15pm-2:15pm – Van Horn A-Sheraton

SW-25 Streams, Reservoirs, and Wetlands Group
TUESDAY, 5:15pm-7:00pm – Empire C-Sheraton

SW-251 Hydraulic Structures
TBA

SW-252 Geomorphgy, Stmbnk Stblty, and In-Stream Procs
TBA

SW-253 Riparian Zones, Floodplains, and Wetlands
TBA

SW-26 Sustainable Land Resources
TUESDAY, 7:00am-8:00am – Van Horn A-Sheraton

SW-262 Home Sewage Disposal
TUESDAY, 7:00am-8:00am – Van Horn B-Sheraton

SW-263 Land Application of Wastes
TUESDAY, 7:00pm-9:00pm – Van Horn C-Sheraton
Committees to Convene

NON-DIVISIONAL
TECHNICAL GROUPS

T-07 Liaison to Aquacultural Engineering Society
TBA

T-9 Environmental Quality Coordinating
MONDAY, 12:15pm-2:15pm – Penn Valley-Westin

T-11 Energy
WEDNESDAY, 2:30pm-5:00pm – Shawnee-Westin

T-12 Forest Engineering
TUESDAY, 5:15pm-7:00pm – Benton A-Sheraton

T-16 Engineering for Sustainability
TBA

PROFESSIONAL ENGINEERING INSTITUTE

PEI Professional Engineers Institute
MONDAY, 12:15pm-2:15pm – Roanoke-Westin

OTHER COMMITTEES

ABET (254)
TUESDAY, 2:30pm-5:00pm – Senators-Westin

ABET (347)
WEDNESDAY, 9:00am-10:00am – Mayors-Westin

ABET (348)
WEDNESDAY, 10:00am-11:00am – Mayors-Westin

AEM ROPS (China/India) Ad Hoc Meeting
MONDAY, 7:30pm-9:00pm – Regents-Westin

African Network Group
MONDAY, 5:15pm-7:00pm – Mission-Westin

Alpha Epsilon
SUNDAY, 4:00pm-5:00pm – Pershing East-Westin

CEAP Business Meeting
WEDNESDAY, 2:30pm-7:00pm – Pershing West-Westin

BEEM Project
MONDAY, 12:15pm-2:15pm – Governors-Westin

Evapotranspiration 2014-Committee Meeting
MONDAY, 5:30pm-6:30pm – Ambassadors-Westin

FE Review
TUESDAY, 1:30pm-2:30pm – Van Horn A-Sheraton

NRCS
MONDAY, 5:15pm-7:00pm – Pershing North-Westin

Past Presidents Roundtable
TUESDAY, 9:30am-12:00pm – Senators-Westin

1/4 Scale Tractor Design Competition
TUESDAY, 12:15pm-2:15pm – Chouteau B-Sheraton

SDC for X564
MONDAY, 1:00pm-2:30pm – Regents-Westin

Unmanned Aircraft Systems in Agriculture
TUESDAY, 8:00pm-10:00pm – Benton A-Sheraton

X610
MONDAY, 9:30am-11:00am – Mayors-Westin

X635 SprayerBoom Height
TUESDAY, 8:00am-9:30am – Mayors-Westin

Young Professionals Community
TUESDAY, 5:15pm-7:00pm – Van Horn A-Sheraton

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<tr>
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