



Contents & General Session



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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 A. Ansari
 Director Sustainability
 and Org. Capability
 PepsiCo Foods Canada

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 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.

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.

He 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.



ASABE Business Meeting



Tuesday, July 23 – 12:30PM-1:15PM
Century Ballroom – Westin



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 was chair of the first AETC meeting and served on the planning committee for ten years. 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.







Meetings & Sessions



SUNDAY, JULY 21

E #2

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



Robert A. Easter, Ph.D

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



Meetings & Sessions



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**

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 (CAAQES)
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 Senneff, 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 Botcher



Meetings & Sessions



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

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

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

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 interesting 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.



SILENT AUCTION

Sunday, July 21 thru
Wednesday, July 24

Bidding ends at 3:00PM Wednesday

Located in Sheraton Ballroom



Continuing Professional Development



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 grant universities looking for qualified candidates.



Continuing Professional Development



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





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.

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



Technical 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

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.

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





Preprofessional



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.)

Tour #2

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.



Preprofessional



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.

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

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. 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

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.

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.



Preprofessional



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.



Young Professional's Community



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.



Young Professional's Community



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



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



Young Professional's Community



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.



Young Professional's Community



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.



Spouse / Guest Program



Spouse Guest Lounge

Peppercorn Duck Club – Sheraton

Hours:

Monday – 8:00AM-5:00PM

Tuesday – 8:00AM-5:00PM

Wednesday – 8:00AM-3:00PM

Plan to arrive 15 minutes before departure for boarding of all tours.

Tours will depart from the bus staging area of the Sheraton

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.

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 Program



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, 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



Spouse / Guest Program



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: 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

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 I - 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 I - 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



Spouse / Guest Program



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.

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

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.



Spouse / Guest Program



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

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 #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

The
ASABE 
Foundation

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

Time	Paper #	Title/Authors
9:30AM		ADVANCES IN COTTON ENGINEERING - Sponsored by PM-23/7/3 Moderator: John D. Wanjura, USDA ARS CPPRU, Lubbock, TX LOCATION: NORTHRUP-SHERATON
9:35AM	131620851	Introduction Effect of Seed Cotton Cleaner Speeds on Machine Performance Robert G. Hardin, USDA-ARS, Stoneville, MS (R.G. Hardin)
9:50AM	131619528	Predicting Seed Cotton Moisture Content from Changes in Drying Air Temperature - Second Year 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 after 3rd Year of Field Testing Greg Holt, USDA-ARS, Lubbock, TX (G. Holt, J. Wanjura, M. Pelletier, J. Thomas, E. Barnes, G. Gamble, R. Baker)
10:50AM		Break
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	131591905	A Continuous-Flow, Pilot-Scale Cottonseed Dehulling Process to Yield Intact Seed Meats William B. Faulkner, Texas A&M University, College Station, TX PRESENTER: Ron Lacey (W.B. Faulkner, J. Nunneley, M. Shimek, T. Wedegaertner)
11:15AM	131562448	Estimating Cotton Stripper Harvest Power Requirements Wesley M. Porter, Oklahoma State University, Stillwater, OK (W.M. Porter, J. Wanjura, R.K. Taylor)
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, M.D. Buser, E. Barnes)
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)

Monday, July 22 - 9:30AM-12:00PM SESSION 151

Time	Paper #	Title/Authors
9:30AM		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
9:35AM	131593141	Introduction 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)
9:50AM	131597665	The Device of Forge 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)

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. Ucgul, C. Saunders)
10:20AM		Break
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)

Monday, July 22 - 2:30PM-5:00PM SESSION 102

Time	Paper #	Title/Authors
2:30PM		ALAN REECE MEMORIAL SESSION ON ADVANCES IN SOIL DYNAMICS - Sponsored by PM-45 Moderator: Santosh K. Pitla, Ohio State University, Columbus, OH LOCATION: EMPIRE B-SHERATON
2:35PM	131689029	Introduction Contributions of Dr. Alan Reece to Advances in Soil Dynamics Richard Godwin, Dick Godwin Associates Ltd, Silsoe, United Kingdom (R. Godwin)
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	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)
3:30PM		Break
3:40PM	131591250	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)
3:55PM	131597846	An investigation into the effect of traffic and tillage on soil properties and crop yields Richard Godwin, Harper Adams University College, Newport, Shropshire, United Kingdom (R. Godwin, E.K. Smith, K. Kristof, P.A. Misiewicz, K. Chaney, D. White)
4:10PM	131607895	Effect of Tractor Pass Frequency on Selected Soil Properties Under Conventional Tillage Seth I. Manuwa, The Federal University of Technology, Akure, Akure, Nigeria (S.I. Manuwa, M.A. Adebayo)
4:25PM	131620725	Soil-tire interface pressures of tractor drive tires of two aspect ratios Thomas R. Way, USDA-ARS National Soil Dynamics Lab, Auburn, AL (T.R. Way, T. Kishimoto)

Monday, July 22 - 9:30AM-12:00PM SESSION 103

Time	Paper #	Title/Authors
9:30AM		AUTOMATION SYSTEMS FOR AGRICULTURAL FIELD MACHINERY - PART 1 - Sponsored by PM-58 Moderator: Matthew J. Darr, Iowa State University, Ames, IA LOCATION: BENTON B-SHERATON
9:35AM	131562442	Introduction Laboratory Evaluation of a Turn Compensation Control System for a Low Pressure Ground Sprayer Wesley M. Porter, Oklahoma State University, Stillwater, OK (W.M. Porter, Y. Shi, J. Rascon, R.K. Taylor, P.R. Weckler)



Technical Sessions



- 9:50AM 131620209** **Testing the efficiency of a series hybrid drivetrain for use in agricultural equipment**
Joseph Jackson, University of Kentucky, Lexington, KY (J. Jackson, J. Dvorak)
- 10:05AM 131586740** **Design & Simulation of Automatic Control and Operation of Agricultural Wide-Span Implement Carrier (WSIC)**
Ahmad Mohsenimanesh, University of Ottawa, Ottawa, ON, Canada (A. Mohsenimanesh, C. Lague, C. Luo)
- 10:05AM 131588609** **Automatic guidance and operation of agricultural Wide-Span Implement Carrier (WSIC): kinematic modelling and simulation**
Chengming Luo, University of Ottawa, Ottawa, ON, Canada (C. Luo, A. Mohsenimanesh, C. Lague)

Monday, July 22 - 9:30AM-12:00PM
SESSION 105

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

Moderator: Dave Bjorneberg, USDA ARS, Kimberly, ID
LOCATION: CHICAGO A-SHERATON
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.

Monday, July 22 - 9:30AM-12:00PM
SESSION 104

SPECIALTY CROP ENGINEERING - PART 1 -

Sponsored by PM-48, FPE-712, FPE-702
Moderator: Manoj Karkee, Washington State Univ, Prosser, WA
LOCATION: VAN HORN A-SHERATON

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

- | Time | Paper # | Title/Authors |
|----------------|------------------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131732346 | 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 |
| 10:20AM | 131732353 | 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. |
| 11:05AM | 131732357 | 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. |

Monday, July 22 - 9:30AM-12:00PM
SESSION 106

SPECTROSCOPY AND SPECTROSCOPIC SENSING - PART 1 -

Sponsored by IET-348
Moderator: Kurt C. Lawrence, USDA ARS, Athens, GA
LOCATION: VAN HORN B-SHERATON

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



Technical Sessions



- 10:20AM 131593402 **Estimation of Bulk Deoxynivalenol and Moisture Content of Wheat Grain Samples by FT-NIR Spectroscopy**
Kamaranga S. Peiris, Kansas State University, Manhattan, KS (K.S. Peiris, Y. Dong, B. Bockus, F. Dowell)
Break
- 10:35AM 131593677 **Spectral Nondestruction Detection for Spoiled Pork Based on Partial Least Squares Regression**
Xiuying Tang, China Agricultural University, Beijing, China (X. Tang, H. Guo, Y. Peng, C. Wang, Y. Xu)
- 11:00AM 131596134 **Analysis and Prediction of Unreacted Starch with FT-NIR Spectroscopy**
Benjamin Plumier, University of Illinois at Urbana-Champaign, Urbana, IL (B. Plumier, M. Danao, V. Singh, K. Rausch)
- 11:15AM 131592957 **Determination Degrees of Insect Infestation in Triticale Seed Using NIR Spectroscopy**
Mahmoud K. Khedher Agha, University of Florida & University of Baghdad, Gainesville, FL (M.K. Khedher Agha, W. Lee, C. Wang, R.W. Mankin, N. Bliznyuk, R.A. Bukclin)

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

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 9:30AM | | Introduction |
| 9:35AM | 131612234 | Corn Stalk Diameter Measurements Using Two Machine Vision Approaches
Yeyin Shi, Oklahoma State University, Stillwater, OK (Y. Shi, N. Wang, R.K. Taylor, W. Raun) |
| 9:50AM | 131594189 | 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) |
| 10:05AM | 131620028 | 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) |
| 10:20AM | 131619471 | Test Methods for Precision Seed Singulation Systems
Yongbo Wan, Oklahoma State University, Stillwater, OK (Y. Wan, A. Koller, E. Miller, P.R. Weckler, R.K. Taylor)
Break |
| 11:00AM | 131591910 | Plant or Tree Reconstruction Based on Stereo Vision
Zhijiang Ni, University of Florida, Gainesville, FL (Z. Ni, T. Burks) |
| 11:00AM | 131591910 | 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) |
| 11:15AM | 131590540 | Estimation of pig weight by machine vision: a review
Li Zhuo, China Agricultural University, Beijing, China (L. Zhuo, L. Chen, T. Guang Hui) |

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

- | Time | Paper # | Title/Authors |
|--------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131598940 | Numerical Simulation of a Quarter Scale Tractor Pull
David I. Epp, University of Saskatchewan, Saskatoon, SK, Canada (D.I. Epp, J.R. Schuba, S.D. Noble) |
| 9:50AM | 131574280 | Dynamic distributed infield planning and steering system for autonomous harvesting
Max Reinecke, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany (M. Reinecke, H. Grothaus, G. Hembach, S. Scheuren, R. Hartanto) |

- 10:05AM 131586216 **Study on grain distribution in a cross-flow grain separation chamber based on the discrete element method**
Xiaoqiang Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, K. Ni, S. Chen, J. Chen, Y. Zhao)
- 10:20AM 131620093 **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)
- 10:35AM 131598524 **Analysis of Poultry Vocalizations for Age Estimation using Cepstral Coefficients and C4.5 Classification**
Nathan V. Parrish, Georgia Institute of Technology, Atlanta, GA (N.V. Parrish, D.F. Britton, D.V. Anderson, W. Daley, S. Harbert)
Break
- 11:00AM 131620743 **Cattle movement characterization and pattern identification for modeling cattle movement**
Tong Liu, University of Illinois, at Urbana-Champaign, Urbana, IL (T. Liu, L.F. Rodriguez, G.D. Maia, A.R. Green, D.W. Shike, B. Lehman, B.C. Ramirez, J. Segers)
- 11:15AM 131594744 **Mapping Potato Productivity over the U.S. Eastern Seaboard using a Geospatial Crop Model**
Jonathan P. Resop, USDA-ARS, Beltsville, MD (J.P. Resop, D.H. Fleisher, D.J. Timlin, V.R. Reddy)
- 11:30AM 131595114 **Rural Geo-Information Extraction Based on GNSS Data Mining**
Yaping Cai, Peking University, Beijing, China (Y. Cai, C. Wu, J. Zhao)
- 11:45AM 131620114 **A movable data acquisition and production management system for apple orchard**
Xiang Guo, China Agricultural University, Beijing, China
PRESENTER: Lihua Zheng (X. Guo, L. Zheng, M. Li, Y. Zhang, X. Deng, X. An)

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

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 9:30AM | | Introduction |
| 9:35AM | 131574922 | 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) |
| 9:50AM | 131593044 | 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) |
| 10:05AM | 131616311 | 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) |
| 10:20AM | 131606157 | Ventilation Rates, Environmental Conditions, and Air Emissions of Cage-Free Layer Houses in California
Xing Jun Lin, University of California-Davis, Davis, CA (X. Lin, R. Zhang, S. Jiang, H. Xin) |
| 10:35AM | 131620434 | Main Gases Within a Poultry Facility Heated by a Furnace
Cecilia D. Souza, Federal University of Vicosa, Vicosa, Brazil (C.D. Souza, W. Ferreira, K. Inoue, F. Leite, M. Sousa, I.F. Ferreira Tinoco)
Break |
| 10:50AM | | Characterizing Manure and Litter Properties and Their Carbon Dioxide Production in an Aviary Laying-Hen Housing System |
| 11:00AM | 131618601 | Yang Zhao, Iowa State University, Ames, IA (Y. Zhao, D. Zhao, W. Wang, H. Xin) |



Technical Sessions



- 11:15AM 131605534 **Comparing semi-continuous air sampling versus 24-hour bag samples to monitor gas emissions and treatment from a swine nursery with biofilters**
Kevin A. Janni, University of Minnesota, St. Paul, MN (K.A. Janni, L.D. Jacobson, B.P. Hetchler, L.J. Johnston)
- 11:30AM 131580044 **Ammonia and Greenhouse Gas Emissions of a Midwestern Swine Breeding-Gestation-Farrowing Facility**
John Stinn, Iowa State University, Ames, IA (J. Stinn, H. Xin, T. Shepherd, H. Li, R.T. Burns)
- 11:45AM 131620564 **Ammonia and nitrous oxide fluxes from a novel swine housing**
Nanh Lovanh, usda-ars, Bowling Green, KY (N. Lovanh, J. Loughrin, K. Sistani)

Monday, July 22 - 9:30AM-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

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131620937 | A summary of farm energy audits in Kentucky
Doug Overhults, University of Kentucky, Princeton, KY (D. Overhults, M. Hagan, S.G. McNeill, M. Montross) |
| 9:50AM | 131586813 | Field Evaluation of LED and CCFL Lights in Poultry Houses
John W. Worley, University of Georgia, Athens, GA (J.W. Worley, B. Fairchild, M. Czarick) |
| 10:05AM | 131596092 | Monitoring Heat Transfer through the Thermal Envelope of a Commercial Broiler House
Gary D. Chesser, Mississippi State University, Mississippi State, MS (G.D. Chesser, J.D. Davis, J.L. Purswell, J.K. Ward, M.V. Bianchi, T. Tabler) |
| 10:20AM | | Break |
| 10:30AM | 131610092 | Heating energy consumption, heat losses and heating energy saving possibilities in case broiler house in Finland
Mari Rajaniemi, University of Helsinki, Helsinki, Finland (M. Rajaniemi, J. Tuure, J. Ahokas) |
| 10:45AM | 131620191 | Geothermal zone-cooling system for finishing hogs
Richard Currin, NC State University, Raleigh, NC (R. Currin, S.B. Shah, Z. Lentz, E. van Heugten, I. Singletary, S. Matthis) |

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

- | Time | Paper # | Title/Authors |
|--------|-----------|---|
| 9:30AM | | Introduction |
| 9:35AM | 131595267 | Evaluation of a Mechanical Foam Mitigation Device in Swine Deep-pit Manure Storages
Richard Gates, University of Illinois, Urbana, IL (R. Gates, G. Turner, L.M. Pepple, T.L. Funk) |
| 9:35AM | 131596496 | Field testing of bone screening and beneficial reuse of large animal mortality compost
Alica J. Ketchem, USDA Natural Resources Conservation Service, Richmond, VA (A.J. Ketchem, R.A. Clark, R. Peer, G. Evanylo) |
| 9:50AM | 131620016 | 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) |

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

SESSION 112

ANIMAL MANURE MANAGEMENT SYSTEM - PART 1

- Sponsored by SE-412
Moderator: Cherie E. LaFleur, USDA NRCS, Fort Worth, TX
LOCATION: CHOUTEAU B

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131546172 | Failures of Geomembrane Liners for Agricultural Waste Storage Ponds
Benjamin C. Doerge, USDA-NRCS, Forth Worth, TX (B.C. Doerge, C.E. LaFleur) |
| 9:50AM | 131594957 | Optimization design of aerated struvite-crystallizer for recovering phosphorus from swine manure using computational fluid dynamics
Zhiying Han, Institute of Agricultural Bio-environmental Engineering (IABE), Zhejiang University, Hangzhou, China
PRESENTER: Songming Zhu (Z. Han, R. Dong, S. Zhu, Z. Ye, S. Chen) |
| 10:20AM | | Break |
| 10:05AM | 131597306 | Effects of biomaterial on ammonia recovery during swine manure composting
Xiuping Tao, Institute of Environment & Sustainable Development in Agriculture, CAAS, Beijing, China
PRESENTER: Hongwei Xin (X. Tao, B. Shang, H. Dong, D. Guo) |
| 10:30AM | 131619771 | Survey on foaming deep-pit swine manure
Neslihan Akdeniz, University of Minnesota, St Paul, MN (N. Akdeniz, L.D. Jacobson, C.J. Clanton, B.P. Hetchler) |
| 10:45AM | 131620730 | The Potential Causes of Manure Pit Foaming in Pig Finishing Barns
Larry D. Jacobson, University of Minnesota, St. Paul, MN (L.D. Jacobson, B. Hu, N. Akdeniz, C. Clanton) |
| 11:00AM | 131594433 | Three-Phase Foam Analysis and the Development of a Lab-Scale Foaming Capacity and Stability Test for Swine Manures
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 114

PHYSICAL PROPERTIES AND EFFECTS ON DRYING, HANDLING, AND PROCESSING -

Sponsored by FPE-702, FPE-709
Moderator: Klein Illeleji, Purdue University, West Lafayette, Indiana
LOCATION: PERSHING SOUTH-WESTIN

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131592878 | Thickness Grading Impacts on Milling and Physicochemical Properties of Long-Grain Rice
Brandon C. Grigg, University of Arkansas, Fayetteville, AR (B.C. Grigg, T.J. Siebenmorgen) |
| 9:50AM | 131620333 | Equilibrium Moisture Content Equation for Triticale Seed
Mahmoud K. Khedher Agha, University of Florida & University of Baghdad, Gainesville, FL (M.K. Khedher Agha, W. Lee, R.A. Bukclin, A.A. Teixeira, A. Blount) |
| 10:05AM | 131592972 | Estimating the effects of kernel dimensions on drying rates of individual kernels
Maria A. Billiris, University of Arkansas, Fayetteville, AR (M.A. Billiris, T.J. Siebenmorgen, T. Thurow, A. Mauroumoustakos) |
| 10:20AM | 131596474 | Structure characterization of bacterial cellulose during dehydration and rehydration proces
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 (Ismailia-Egypt) and, Davis, CA
PRESENTER: Griffiths Atungulu (R.K. Gebreil, G.G. Atungulu, C. Ding, Z. Pan) |



Technical Sessions



- 11:00AM 131621817 **Effect of Mechanical Treatments on Creep Behavior of Potato Tubers**
Ahmed Rady, Michigan State University, East Lansing, MI (A. Rady, S.N. Soliman)
- 11:15AM 131621826 **Evaluation of Surface Effect, On Mechanical Damage of Potato Tubers Using Different Methods**
Ahmed Rady, Michigan State University, East Lansing, MI (A. Rady, S.N. Soliman)
- 11:30AM 131622139 **Research on thermal characteristics of whey powder, milk replacer and lactose**
Jie Yang, China Agricultural University, Beijing, China (J. Yang, L. Zhao, D. Kong, R. Gao, H. Wang)

Monday, July 22 - 9:30AM-12:00PM SESSION 115

ADVANCES IN NONDESTRUCTIVE TESTING OF AGRICULTURAL, BIOLOGICAL, AND FOOD PRODUCTS - Sponsored by FPE-701
Moderator: Yankun Peng, China Agricultural Univ, Beijing, China
LOCATION: PERSHING NORTH-WESTIN

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131587037 | Spoilage Detection of Chilled Meat during Shelf Life by Using Hyperspectral Imaging Technique
Leilei Zhang, China Agricultural University, Beijing, China (L. Zhang, Y. Peng, S. Dhakal, F. Tao) |
| 9:50AM | 131619253 | Detection of fish freshness based on computer vision and near-infrared spectroscopy technique
Xingyi Huang, Jiangsu University, Zhenjiang, China (X. Huang, L. Wu, F. Xu, R. Ding) |
| 11:05AM | 131599335 | Nondestructive Detection of Pear Firmness Using a Laser Doppler Vibrometer
Wen Zhang, Zhejiang University, Hang Zhou, China (W. Zhang, D. Cui, Y. Ying) |
| 10:20AM | 131620863 | Measuring and Modeling of Radiofrequency Dielectric Properties of Chicken Breast Meat
Stuart O. Nelson, ARS-USDA, Athens, GA (S.O. Nelson, S. Trabelsi) |

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
Moderator: Conly L. Hansen, Utah State University, Logan, UT
LOCATION: PERSHING EAST-WESTIN

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 9:30AM | | Introduction |
| 9:35AM | 131596881 | Selection of Co-digestate Feedstocks Based on Evaluation of a Full-Scale Biomass Energy Mass Balance
Mary Kay Camarillo, University of the Pacific, Stockton, CA (M. Camarillo, W.T. Stringfellow, C.L. Spier, J.S. Hanlon, J.K. Domen) |
| 9:50AM | 131599056 | Egg Waste and Grape Pomace as Co-digestates for Biogas Production in Anaerobic Digestion
Mary Kay Camarillo, University of the Pacific, Stockton, CA (M. Camarillo, J.K. Domen, M. Ebia, W.T. Stringfellow) |
| 10:05AM | 131619080 | Characterizing Food Waste Substrates for Co-Digestion through Anaerobic Toxicity Assays (ATA) and Biochemical Methane Potential (BMP)
Stephanie A. Lansing, University of Maryland, College Park, MD (S.A. Lansing, M. Lisboa) |
| 10:20AM | 131619760 | Enhancement of Methane Production from Solid-state Anaerobic Digestion (SS-AD) of Yard Trimmings by Fungal Pretreatment
Jia Zhao, The Ohio State University, Wooster, OH (J. Zhao, Y. Li) |
| 10:35AM | 131620409 | Investigating Routine Bioaugmentation for Improved Anaerobic Digestion of a Cellulosic Waste
Ana Martin-Ryals, University of Illinois at Urbana-Champaign, Urbana, IL (A. Martin-Ryals, L. Schideman) |

- 10:50AM **Break**
- 11:00AM 131620509 **Nutrients recycling strategies for microalgae-based CO2 bio-mitigation system**
Xinyi Ee, University of Kentucky, Lexington, KY
PRESENTER: Czar Crofcheck (X. Ee, C. Crofcheck, J. Aurandt)
- 11:15AM 131604035 **Enhance volatile fatty acid (VFA) and bio-methane productivity by pretreatment of lawn grass**
Jingwei Ma, Washington State University, Pullman, WA (J. Ma, L. Yu, Q. Zhao, C. Frear, S. Chen)
- 11:30AM 131669191 **The Economical A2 Digester - Anaerobic Digestion Followed by Composting**
Conly L. Hansen, Utah State Univ, Logan, UT (C.L. Hansen, S.B. Johnson, R.V. Davis)
- 11:45AM 131593762 **Effects of harvest time and ensilage on anaerobic digestion of corn stover**
Xiang Chen, Department of Biosystems Engineering, Zhejiang University, Hangzhou, China (X. Chen, F. Liang, W. Yan, R. Kloss, S. Kuichuan, X. Bao)

Monday, July 22 - 9:30AM-12:00PM SESSION 117

BIOMASS FEEDSTOCK SUPPLY LOGISTICS AND MODELING - Sponsored by FPE-710, T-11, PM-23/7/2
Moderator: Igathinathane Cannayen, North Dakota State University, Fargo, ND
LOCATION: PERSHING WEST-WESTIN

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131619404 | Evaluation of Feasible Scenarios for Bioethanol Blending Regulations in South Korea
Kyo Suh, Seoul National University, Seoul, Republic of Korea (K. Suh, T. Kim, L.J. Jae, S. Lee, T.M. Smith) |
| 9:50AM | 131620059 | Biomass Delivery Cost through Pipeline based on Experimental Measurement
Mahdi Vaezi, University of Alberta, Edmonton, AB, Canada (M. Vaezi, A. Kumar) |
| 10:05AM | 131621954 | Temporal and spectral analysis of power input for grinding cellulosic fibrous biomass
Ladan J. Naimi, University of British Columbia, Vancouver, BC, Canada (L.J. Naimi, S. Sokhansanj, J. Lim, M. Emami) |
| 10:20AM | 131594309 | Gaseous Emissions from Agricultural Biomass Combustion: a Prediction Model
Sébastien Fournel, Université de Sherbrooke, Sherbrooke, QC, Canada (S. Fournel, S. Godbout, M. Heitz, B. Marcos) |
| 10:35AM | | Break |
| 10:45AM | 131618390 | Feasibility of Forest Industry Depots for Collection and Distribution of Biomass
Ralph Cavalieri, Washington State University, Pullman, WA (R. Cavalieri, M. Wolcott, N. Martinkus, K. Olsen, C. Poor) |
| 11:00AM | 131620974 | Effect of field distance, shape on energy balance of high-tonnage energy crops
Remigio Berruto, UNITO, Grugliasco, Italy (R. Berruto, P. Busato, D. Bochtis, E. Rodias) |
| 11:15AM | 131621074 | Field-scale switchgrass and energy sorghum harvesting: OSU BRDI project update
Michael D. Buser, Oklahoma State University, Stillwater, OK (M.D. Buser, E. Miller, R.L. Huhnke) |
| 11:30AM | 131621076 | Performance of large bale switchgrass and energy sorghum storage stacks: Oklahoma State University BRDI project overview
Michael D. Buser, Oklahoma State University, Stillwater, OK (M.D. Buser, E. Miller, R.L. Huhnke, K. Kenney) |



Technical Sessions



Monday, July 22 - 9:30AM-12:00PM
SESSION 118

Time	Paper #	Title/Authors
9:30AM		BIOMASS CATALYTIC AND THERMOCHEMICAL CONVERSIONS - PYROLYSIS & LIQUEFACTION - Sponsored by FPE-709, T-11 LOCATION: PENN VALLEY-WESTIN
9:35AM	131594788	Introduction Carbon Catalysts from Corn Stover and its Application to Catalytic Microwave Pyrolysis Lei Zhu, Washington State University, Richland, WA (L. Zhu, H. Lei, L. Wang, Q. Bu, Y. Wei, Y. Liu, J. Liang)
9:50AM	131594800	Catalytic upgrading of Douglas fir sawdust pellet vapors over Zn/ZSM-5 catalysts in a packed-bed catalysis reactor Lu Wang, Washington State University, Richland, WA (L. Wang, H. Lei, Q. Bu, L. Zhu, J. Liang, Y. Liu, J. Lee, S. Chen, J. Tang)
10:05AM	131612715	Biomass Catalytic Pyrolysis using Zeolite Catalysts Sushil Adhikari, Engineering, Auburn, AL (S. Adhikari, V. Srinivasan)
10:20AM	131619058	Production of Bio-Oil by Pyrolysis Using Induction Heating Mechanism Charles E. Henkel, Louisiana State University, Baton Rouge, LA (C.E. Henkel, D. Boldor)
10:35AM		Break
10:45AM	131620983	Catalytic tar reforming performance of bio-char in two-stage biomass pyrolysis Xinxin Ma, Beijing University of Chemical Technology, Beijing, China (X. Ma, B.M. Jenkins, R. Zhang)
11:00AM	131618083	Influence of operation conditions on fast pyrolysis of eastern red cedar Zixu Yang, Oklahoma State University, Stillwater, OK (Z. Yang, A. Kumar, M.D. Buser, R.L. Huhnke)
11:15AM	131594738	Optimization of Bio-oil Production from Pyrolysis of Whole Algal Biomass Monet Concepcion C. Maguyon, Texas A&M University, College Station, TX (M.C. Maguyon, S.C. Capareda)
11:30AM	131620854	Secondary Vapor Phase Reactions of Lignin Derived Oligomers Obtained by Fast Pyrolysis of Pine Wood Shuai Zhou, Washington State University, Pullman, WA (S. Zhou, B. Pecha, M. Garcia-Perez, A. McDonald, S. Kersten, R. Westerhof)

Monday, July 22 - 9:30AM-12:00PM
SESSION 119

Time	Paper #	Title/Authors
9:30AM		EMERGING TECHNOLOGIES IN FOOD PROCESSING: PART 1 - Moderator: Kevin Keener, Purdue University, West Lafayette, IN LOCATION: ROANOKE-WESTIN
9:35AM	131581465	Introduction Design and Evaluation of a Pilot Scale Infrared Dry-Peeling System for Tomatoes Zhongli Pan, Western Regional Research Center USDA-ARS, Albany, CA PRESENTER: Griffiths Atungulu (Z. Pan, G.G. Atungulu, X. Li, R. Khir, M. Delwiche, T. McHugh)
9:50AM	131595069	Polymeric-Based Multilayer Packaging Films for Microwave-Assisted and Pressure-Assisted Thermal Sterilization Kanishka Bhunia, Washington State University, Pullman, WA (K. Bhunia, S. Dhawan, S.S. Sablani, J. Tang, G.V. Barbosa-Canovas)
10:05AM	131595542	Effect of Slightly Acidic Electrolyzed Water for Inactivation of <i>Escherichia coli</i> on White Shrimp (<i>Litopenaeus vannamei</i>) Fanyu Qi, College of Biosystems Engineering & Food Science, Zhejiang University, Hangzhou, China (F. Qi, Q. Zheng, N. Yang, P. Liu, J. He, S. Zhu, Z. Ye)

10:20AM	131595592	The Sensory Quality of Cucumber Juice after High Pressure Processing and Heat Treatment Chunfang Wang, College of Biosystems Eng. & Food Sci., Zhejiang University, Hangzhou, China (C. Wang, F. Hu, Y. Zhan, Y. Yu, J. He, S. Zhu)
10:35AM		Break
10:45AM	131597720	Astaxanthin Extracts From Shrimp (<i>Litopenaeus Vannamei</i>) Discards Assisted By High Pressures Processing Jirui Du, Zhejiang University, Hangzhou, China (J. Du, J. He, Y. Yu, S. Zhu, J. Li)
11:00AM	131599005	Optimizing plant production with narrow spectrum LEDs' Konstantin Daiev, McGill, Montreal, QC, Canada (K. Daiev, M. Lefrud)

Monday, July 22 - 9:30AM-12:00PM
SESSION 120

Time	Paper #	Title/Authors
9:30AM		MODELING BIOLOGICAL PROCESSES - PART 1 - Sponsored by BE-2, BE-4 Moderator: Israel S. Dunmade, Mount Royal Univ Calgary, Calgary, AB, Canada LOCATION: SHAWNEE-WESTIN
9:35AM	131577046	Introduction Development of Fast-Hardening Calcium Phosphate Cements using Micro/Nano Horse Bone Powders Jangho Kim, Seoul National University, Seoul, Republic of Korea (J. Kim, K. Lim, B. Soo Jung, J. Chung)
9:50AM	131587129	Investigation of the plant cell wall's molecular structure models using the finite element modeling Hojae Yi, The Pennsylvania State University, University Park, PA PRESENTER: Virendra Puri (H. Yi, S. Zamil, V.M. Puri)
10:05AM	131590255	Numerical simulation design and actual cultivation of <i>Chlorella vulgaris</i> in a 30L cylindrical bubble column photobioreactor (PBR) for microalgae mass production Jessie Pascual P. Bitog, Nueva Vizcaya State University, Nueva Vizcaya, Philippines (J.P. Bitog)
10:20AM	131592072	Techno-Economic Modeling of a Degummed Soybean Oil Biorefinery in 2005 & 2012 Bailey A. Richardson, Iowa State University, Ames, IA (B.A. Richardson, K.A. Rosentrater)
10:35AM		Break
10:45AM	131610840	Monte Carlo Simulation of Prompt and Delayed Chlorophyll Fluorescence from Photosystem II Ya Guo, University of Missouri, Columbia, MO (Y. Guo, J. Tan)
11:00AM	131618715	Psychrophilic anaerobic sequencing batch reactor with biofilm supported by solids from dairy manure Jingwei Ma, Washington State University, Pullman, WA (J. Ma, B. Zhao, Q. Zhao, L. Yu, C. Frear, S. Chen)

Monday, July 22 - 9:30AM-12:00PM
SESSION 121

Time	Paper #	Title/Authors
9:30AM		CHALLENGES IN LIGNOCELLULOSIC CONVERSION - Sponsored by BE-28, FPE-709 Moderator: Hasan K. Atiyeh, Oklahoma State University, Stillwater, OK LOCATION: MISSION-WESTIN
9:35AM	131620784	Introduction The Ammonium Bicarbonate Explosion Process Dennis A. Burke, Environmental Energy & Engineering Co., Olympia, WA (D.A. Burke)
9:50AM	131594570	Towards improving enzymatic hydrolysis of sodium hydroxide pretreated corn stover at high-solids loadings Alicia Modenbach, University of Kentucky, Lexington, KY (A. Modenbach, S. Nokes)
10:05AM	131592773	Optimization of acid bisulfite pretreatment of Eastern redcedar using response surface methodology Mark R. Wilkins, Oklahoma State University, Stillwater, OK (M.R. Wilkins, K. Ramachandriya, C. Goad, N.T. Dunford, H.K. Atiyeh, S. Hizioglu)



Technical Sessions



- 10:20AM 131596392 **Quantifying Xylulose Uptake Kinetics and Enzymatic Utilization Bottlenecks**
William E. Hohenschuh, Oregon State University, Corvallis, OR (W.E. Hohenschuh, R. Hector, G.S. Murthy)
- 10:35AM **Break**
- 10:45AM 131591566 **Developing a hybrid control approach for fed-batch enzymatic hydrolysis of pretreated lignocellulosic biomass**
Chao Tai, University of Nebraska-Lincoln, Lincoln, NE (C. Tai, D.R. Keshwani)
- 11:00AM 131590908 **Characterization and quantification of monomer, oligomers, and by-products from xylan during biomass pretreatment**
Ching-Shuan Lau, Kansas State University, Manhattan, KS (C. Lau, D. Carrier, G. Thoma, E. Clausen)
- 11:15AM 131600238 **The adsorption of xyloglucan and pectin to model crystalline and amorphous cellulose substrates**
Jin Gu, Penn State University, University Park, PA (J. Gu, J.M. Catchmark)
- 11:30AM 131609897 **Production of drop-in biofuels by mixed culture syngas fermentation**
Kan Liu, Oklahoma State University, Stillwater, OK (K. Liu, H.K. Atiyeh, B.S. Stevenson, R. Tanner, M.R. Wilkins, R.L. Huhnke)

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

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131597541 | The Effect of Carbonization Conditions on Characteristics of Corn-Stalk and Rice-Straw Derived Biochar
Lin Yanhui, College of biosystems engineering and food science, Hangzhou, China (L. Yanhui, S. Kuichuan, Y. Xia, S. Qian, T. Scilley) |
| 9:50AM | 131594593 | Renewable phenols and fuel production from catalytic pyrolysis of lignin using microwave irradiation heating
Quan Bu, Washington State University, Richland, WA (Q. Bu, H. Lei, L. Wang, Q. Zhang, J. Tang) |
| 10:05AM | 131619709 | Effects of Pretreatment Conditions for Enzymatic Hydrolysis of Pelleted Switchgrass
Nurun Nahar, North Dakota State University, Fargo, ND (N. Nahar, S. Pryor) |
| 10:20AM | 131618916 | Improvement of biofuel production by fungal pretreatment and periodic flushing system
Wanying Yao, University of Kentucky, Lexington, KY (W. Yao, S. Nokes, M. Flythe, B. Knutson, B. Lynn, S. Rankin, M. Montross) |
| 10:35AM | 131618131 | Alkali-Ultrasonication, Hot Liquid Water and Lignolytic Enzymes Pretreatments for Bioethanol Production from Cotton Gin Trash (CGT)
Jersson Placido, Texas A&M University, College Station, TX (J. Placido, S.C. Capareda) |
| 10:50AM | | Break |
| 11:00AM | 131595011 | Rational design of optimal enzyme mixture for deconstruction of cellulose for ethanol production
Deepak Kumar, Oregon State University, Corvallis, OR (D. Kumar, G.S. Murthy) |
| 11:15AM | 131620546 | Addition of Biochar Nano-Particles to Packaging Film
David DeVallance, West Virginia University, Morgantown, WV PRESENTER: N. Nan (D. DeVallance, N. Nan) |
| 11:30AM | 131590716 | Moderate Electric Field (MEF) Treatment Increases Enzymatic Hydrolysis of Filter Paper for Ethanol Production
Emily K. Durham, The Ohio State University, Columbus, OH (E.K. Durham, S. Sastry) |

- 11:45AM 131621179 **Pyrolysis Kinetics of Physical Components of Wood and Wood-Polymers using Isoconversion Method**
Wenjia Jin, West Virginia University, Morgantown, WV (W. Jin, K. Singh, J. Zondlo)
- 12:00PM 131590984 **Non-isothermal Crystallization Behavior of Biocomposites from Poly(lactic acid) and Bamboo Fiber**
Shaoping Qian, Zhejiang University, Hangzhou, China (S. Qian, M. Hailiang, S. Kuichuan, L. Yifan, L. Jun, L. Yanhui)

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

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 9:30AM | | Introduction |
| 9:35AM | 131575514 | Compact Power Equipment Troubleshooting Training: Formative Assessment using Think-Aloud Pair Problem Solving
Michael L. Pate, Utah State University, Logan, UT (M.L. Pate, C. Young) |
| 9:50AM | 131594010 | A comparative analysis of ABE Bachelor of Science programmes in European and US Universities
Francisco Ayuga, Universidad Politecnica de Madrid, Madrid, Spain (F. Ayuga, J. Fuentes, A. Ramirez, A. Garcia, P. Aguado) |
| 10:05AM | 131595712 | Peer Review of Teaching Project: a model for improvement in teaching and student learning
Deepak R. Keshwani, University of Nebraska-Lincoln, Lincoln, NE (D.R. Keshwani) |
| 10:20AM | | Break |
| 10:30AM | 131609206 | Assessing a University's Environmental Profile: Challenges and Opportunities
Israel S. Dunmade, Mount Royal University, Calgary, Calgary, AB, Canada (I.S. Dunmade) |
| 10:45AM | 131620814 | Mapping, Validation and Quantification of Surface Energy Fluxes using SEBS (Surface Energy Balance System) in south Central Nebraska
Vivek Sharma, UNL, Lincoln, NE (V. Sharma, D. Mutiibwa, S. Irmak) |

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: NORTHRUP-SHERATON

- | Time | Paper # | Title/Authors |
|--------|-----------|---|
| 2:30PM | | Introduction |
| 2:35PM | 131589600 | Determination of Working Pressure Range for A Centralized Pneumatic Metering Device for Maize
Bing Qi, China Agricultural University, Beijing, China PRESENTER: Dongxin Zhang (B. Qi, D. Zhang, A.N. Osman) |



Technical Sessions



2:50PM	131589598	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)	3:45PM	131596934	Transversal Vibration Analysis of Mono Chain Ropeway System Jun Li, South China Agricultural University, Guangzhou, China (J. Li, T. Hong, Z. Yang, Y. Zhu)
3:05PM	131618197	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)	4:00PM	131619406	Hydraulic Control System Design of Hay Bale Recompactor Wencheng Huang, China Agricultural University, Beijing, China (W. Huang, D. Wang, G. Wang, L. Wang)
3:20PM	131620912	Evaluation of Corn Singulation Meters Randy Taylor, Oklahoma State University, Stillwater, OK (R. Taylor, Y. Wan, A. Koller, M. Oldham, E. Miller, P.R. Weckler)	Monday, July 22 - 2:30PM-5:00PM		
3:35PM	131619661	Evaluation of a Corn Singulation System for a Hand Planter Randy Taylor, Oklahoma State University, Stillwater, OK (R. Taylor, A. Koller, P. Omara, W. Raun)	SESSION 128		
3:50PM		Break	Time	Paper #	Title/Authors
4:00PM	131584905	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)	2:30PM		Introduction
4:15PM	131586344	Parameter-Guided Optimization Algorithm and Its Application in Designing a Rice Transplanting Mechanism Xiaoqiang Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, Y. Zhao)	2:35PM	131595609	Experimental Study on Mechanical Properties of Some Deep-rhizome Chinese Herbal Medicines Guorui Chen, South China Agricultural University, Guangzhou, China (G. Chen, X. Ma, L. Qi, Z. Zheng, J. Xie, C. Lin)
4:30PM	131620844	Novel Engineering Device to Reduce Combine Fire Risk Joseph P. Polin, South Dakota State University, Brookings, SD (J.P. Polin, D. Humburg, Z. Gu, K. Dalsted)	2:50PM	131596473	Harvest Management Information System for Specialty Crops Yiannis G. Ampatzidis, Washington State University, Prosser, WA (Y.G. Ampatzidis, R. Haley, R. Wortman, L. Tan, M.D. Whiting)
4:45PM	131596530	A Remotely Controlled Bin-Dog for Transferring Bins in Orchard Environments Yunxiang Ye, Washington State University, Prosser, WA (Y. Ye, L. He, J. Zhou, M. Wang, Q. Zhang, K. Lewis)	3:05PM	131616259	Harvest-assist technologies for improving efficiency in apple production Paul Heinemann, Penn State, University Park, PA (P. Heinemann, J. Liu, Z. Zhang, S. Pysker, J. Schneider, J. Schupp, T. Baugher)
5:00PM	131620291	Anti-Friction Rollers Evaluation of Roselle Harvester Federico F. Hahn, Universidad Autonoma Chapingo, Chapingo, Texcoco, Mexico (F.F. Hahn, E.S. Poblano)	3:20PM	131620688	Pressure dynamics in solid set canopy spray application system for tree fruit orchards Ajay Sharda, Washington State University, Prosser, WA (A. Sharda, M. Karkee, Q. Zhang)
5:15PM	131592710	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)	3:35PM		Break
5:30PM	131620136	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)	3:45PM	131620377	Evaluation of Unmanned Aerial Vehicle (UAV) Flight Altitude on Counting Accuracy of Plants in Open-Field Nursery Josue N. Leiva-Lopez, University of Arkansas, Fayetteville, AR (J. N. Leiva-Lopez, D. Saraswat, J. Robbins)
Monday, July 22 - 2:30PM-5:00PM			4:00PM	131591861	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)
SESSION 127			4:15PM	131593595	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)
Time	Paper #	Title/Authors	4:30PM	131619227	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)
2:30PM		Introduction	4:45PM	131608939	Design and Experiment of Intelligent Monorail Cucumbers Harvester System Zhenyu Yang, China Agricultural University, Beijing, China (Z. Yang, W. Zhang, J. Zhang, C. Zhang, C. Ji, W. Li)
2:35PM	131593561	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)	Monday, July 22 - 2:30PM-5:00PM		
2:50PM	131596410	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)	SESSION 129		
3:05PM	131591760	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)	Time	Paper #	Title/Authors
3:20PM		Break	2:30PM		Introduction
3:30PM	131596843	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)	2:35PM	131595609	Experimental Study on Mechanical Properties of Some Deep-rhizome Chinese Herbal Medicines Guorui Chen, South China Agricultural University, Guangzhou, China (G. Chen, X. Ma, L. Qi, Z. Zheng, J. Xie, C. Lin)



Technical Sessions



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
2:35PM	131596295	Application of an Ag Leader Cotton Yield Monitor for Measuring Peanut Yield: A Multi-State Investigation Kendall R. Kirk, Clemson University, Clemson, SC (K.R. Kirk, W.M. Porter, J.K. Ward, R.K. Taylor, J. Fravel, C. Godsey)
2:50PM	131598681	Initial Results Utilizing a Commercially Available Ultrasonic Sensor for Forage Yield Measurement Kent Shannon, University of Missouri, Columbia, MO (K. Shannon, J. Lory, R. Kallenbach, T. Lorenz, J. Harper, G. Schmitz, W. Rapp, B. Carpenter, D. England)
3:05PM	131620739	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
3:30PM	131620969	Development and Testing of an Impact Plate Yield Monitor for Peanuts Jacob Fravel, Clemson University, Clemson, SC (J. Fravel, K.R. Kirk, S. Monfort, J. Thomas, W. Henderson, H.F. Massey, J.P. Chastain)
3:45PM	131619056	Sensing Light Absorption by Crop Canopy for Estimating Yield in Almonds and Walnuts Francisco Rojo, UC Davis, Davis, CA (F. Rojo, R.S. Dhillon, J. Roach, S. Upadhyaya, S. Metcalf, B. Lampinen)

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)
2:50PM	131598217	Real-time Moisture Measurement of Broiler Litter using Capacitance and Near-Infrared Techniques Simerjeet S. Virk, Auburn University, Auburn, AL (S.S. Virk, J.P. Fulton, O. Fasina, T.P. McDonald)
3:05PM	131619952	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 café 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. Kaleita)
	131620926	Identifying Riparian Hotspots Using Automated Tool Dharmendra Saraswat, University of Arkansas Division of Agriculture Cooperative Extension Service, Little Rock, AR (D. Saraswat, 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. Amata)
	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)
	131598650	Mobile Applications for Agricultural and Urban Irrigation Schedule Support Jose H. Andreis, University of Florida, Gainesville, FL (J.H. Andreis, C.W. Fraise, K. Migliaccio, K. Morgan, G. Vellidis)
	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. Laffen, W. Krajewski, J. Opsomer)
	131621419	Developing a Model Irrigation Dissemination Program in the North Texas Municipal Water District Charles Swanson, Texas A&M Agrilife Extension Service, College Station, TX (C. Swanson, G. Fipps)

Monday, July 22 - 2:30PM-5:00PM
SESSION 132

SOIL & WATER DIVISION POSTER SESSION- LOCATION: GILLHAM HALL

Poster #	Paper #	Title/Authors
1	131561886	Integrating high-resolution spatiotemporal climate change data for modeling irrigation demand Sean Woznicki, Michigan State University, East Lansing, MI (S. Woznicki, A. Nejadhashemi, M. Parsinejad)
2	131581692	Comparison of application strategies for fixed-media treatment of Turkey processing wastewater Chen Wang, The Ohio State University, Columbus, OH PRESENTER: Karen Mancl (C. Wang, K. Mancl, O. Tuovinen)
3	131583136	Cold temperature impacts on treatment of meat processing wastewater Karen Mancl, Ohio State University, Columbus, OH (K. Mancl, R. Gaur, O. Tuovinen)
4	131583409	Performance of Vegetated Treatment Areas for Treating Runoff from Small Swine Operations in Central Texas Kori Higgs, USDA-ARS, Temple, TX PRESENTER: Daren Harmel (K. Higgs, D. Harmel, K. Wagner, P. Smith)
5	131585943	Vegetation Establishment: The Impact of Erosion Control Blankets on Hillside Revegetation Taylor Leahy, UIUC, Urbana, IL (T. Leahy)



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. Liu, 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, Q. 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 Bioenergy 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 Ralstonia eutropha Gulsad Uslu, Firat University, Elazig, Turkey (G. Uslu, I. Ozdemir Atay, 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. Tyrrel, 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 Diogenes L. Antille, Teagasc, Wexford, Ireland (D.L. Antille, L. Gallar-Redondo, R. Godwin)
13	131593667	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 (<i>Triticum aestivum</i> 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 (<i>Lolium perenne</i> 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. Balmos, C. Bowman, A. Ault, B. Engel, J. Frankenberger, I. Chaubey, J. Krogmeier, D.C. Flanagan)
16	131595048	Effect of Irrigating Slightly Acidic Electrolyzed Water on Lettuce Photosynthesis under Mild Water Stress Chennan 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. Ernfors, K. Richards, S. Lalor)
17	131598762	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 Kyle Hornvedt, North Dakota State University, Fargo, ND (K. Hornvedt, X. Jia, T. Scherer, D. Steele, T. DeSutter)	34	131620402	Fate and Transport of Tylosin-Resistant Bacteria and Genes in Tile-Drained Agricultural Fields Amended with Swine Manure 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 Kelsey Regan, Iowa State University, Ames, IA (K. Regan, D.S. Andersen)	36	131620658	Assessing the Feasibility and Effectiveness of Vehicle Tracking with Low-Cost GPS to Map Military Training Impacts on the Landscape 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 PRESENTER: Aaron Mittelstet (B.C. Rogers)



Technical Sessions



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)	54	131621392	Climate change impacts on Irrigation and horticultural crop yields in Niger Glenn Brown, Oklahoma State University, Stillwater, OK (G. Brown, A. Sita)
39	131561946	Analysis of Best Management Practice Effectiveness and Spatiotemporal Variability Based on Different Targeting Strategies Subhasis Giri, Michigan State University, East Lansing, MI (S. Giri, A. Nejadhashemi, S. Woznicki, Z. Zhang)	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)
40	131597820	Regional Trends in Groundwater Levels and Quality as Affected by Irrigational Use in the Southern High Plains of Texas Sriroop Chaudhuri, Texas A&M AgriLife Research and Extension Center, Vernon, TX (S. Chaudhuri, S. Ale)	56	131595082	Evaluation of DRAINMOD Model to study Groundwater table dynamics and N load in western Pampas, Argentina Gabriel Vazquez-Amabile, AACREA, Buenos Aires, Argentina (G. Vazquez-Amabile, N. Bosch, A.P. Ricca, M.L. Ortiz-de-Zarate, D. Rojas, J. Lascombes, V. Parra, G. Duarte, F. Feiguin)
41	131618756	Cost-Effectiveness Analysis of Agricultural Pollution Reduction at the Farm Scale Using APEX Dat Q. Tran, North Carolina Agricultural and Technical State University, Greensboro, NC (D.Q. Tran, L.A. Kurkalova, M.R. Reyes, D. Line, G. Hoyt, D. Osmond, L.N. Kieu, J. Edgell)	57	131619229	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)
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)	58	131619712	Modeling Cover Crop Effectiveness for the Choptank River Watershed, a Tributary of the Chesapeake Bay along Maryland's Eastern Shore Greg W. McCarty, USDA-ARS/HRSL, Beltsville, MD (G.W. McCarty, A.M. Sadeghi, P.C. Beeson, S. Lee, I.Y. Yeo, D. Hively, W. Kustas)
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)	59	131595922	An Alternative Approach to the Actual Brazilian Maize Crop Zoning Jéssica S. Paixão, Federal University of Sao Joao del Rei, Sete Lagoas, Brazil PRESENTER: Camilo de Andrade (J.S. Paixão, C.T. Andrade, A. Garcia y Garcia, T.A. Amaral, A.S. Neto, F.R. Marin, M.B. Alves, D.F. Silva, C.F. Rodrigues, T.C. Teixeira)
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)	60	131668614	Watershed Diagnostics for Improved Adoption of Management Practices: Integrating Biophysical and Social Factors in Urban and Agricultural Landscapes Paul Leishnam, University of Maryland, College Park, MD (P. Leishnam, H. Montas, A. Shirmohammadi, V. Chanse, D. Lansing, A. Rockler, T. Hutson, J. McCoy, L. Cain, S. Wilson, K. Brubaker, Y. Wang)
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)	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)
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)	62	131697653	Water Quantity and Water Quality from Edge of Field Monitoring Sites in the Midsouth Michele L. Reba, Arkansas State University, State University, AR (M.L. Reba)
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)	63	131687319	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)
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)	64	131687322	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, J. Nettles)
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)	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)
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)	66	131592449	Irrigation Scheduling for Potato under Deficit Condition using Partial Root-zone Drying Technique Rabindra K. Panda, Indian Institute of Technology Kharagpur, KHARAGPUR, India (R.K. Panda, C.A. Das, D. HALDER)
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)	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)
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)			



Technical Sessions



68	131620517	Catch Can Testing of a Variable Rate Irrigation System and Evaluation Using a Time Varying Densogram Charles C. Hillyer, Oregon State University, Corvallis, OR (C.C. Hillyer, C. Higgins, J. Kelly)				
69	131620758	Automated Hydrologic Enforcement of High Resolution Topographic Surveys Brian Gelder, Iowa State University, Ames, IA (B. Gelder, D. James)	Poster # 83	Paper # 131582674	SW POSTER SESSION A-SW-22 EROSION - Sponsored by SW-21, SW-22, SW-23, SW-24, SW-25, SW-26 Moderator: Sherry L. Hunt, USDA ARS, Stillwater, OK	
70	131620475	Orange Root System Distribution Under Controlled Deficit Irrigation Regina C. Pires, Agronomic Institute, Campinas, Brazil (R.C. Pires, M.F. Lima, J.A. Quaggio, A.B. Silva)	84	131620986	Effects of factors on the abundance of epilithic algae in mountain streams of subtropical Taiwan Yi-Ming Kuo, MingDao University, Chang-Hua, Taiwan (Y. Kuo, Y. Chuang, H. Lin)	Title/Authors
71	131606586	Use of treated wastewater for lettuce cultivation Claudinei F. Souza, UFSCar, Araras, Brazil (C.F. Souza, A.T. Varallo, V.R. Urbano, T.G. Mendonça, R.G. Bastos)	85	131596930	Spatial characteristics of future precipitation distribution in Korea - Bias corrected by a Quantile Mapping Method Moon Seong Kang, Seoul National University, Seoul, Republic of Korea (M. Kang, I. Song, J. Park, S. Kim, M. Jang, J. Jang)	
72	131581871	Calibration and controlled Flume evaluation of Polar Organic Chemical Integrative Samplers (POCIS) for Tylosin Maurice Washington, Iowa State University, Ames, IA (M. Washington, M. Soupier, T. Moorman)	86	131621030	Comparison of Two Prediction Models for Surface Soil Moisture Measurement Using Near-infrared Sensor Zhe Yin, China Agricultural University, Beijing, China PRESENTER: Zuping Sheng (Z. Yin, T. Lei, Z. Chen, Q. Yan, Y. Dong)	
73	131598565	Forecasting Agricultural Drought with Coupled Data Driven Models and the Bootstrap Technique Anteneh Belayneh, McGill University, Montreal, QC, Canada PRESENTER: Jan Adamowski (A. Belayneh, J. Adamowski, B. Khalil)	87	131598778	Chemico-physical characteristics of livestock compost in Korea Inhong Song, Seoul National University, Seoul, Republic of Korea (I. Song, J. An, M. Kang, J. Jang)	
74	131620776	Performance Evaluation of a Center Pivot Variable Rate Irrigation System Arndt Gossel, University of Missouri, Columbia, MO (A. Gossel, A.L. Thompson, K. Sudduth, J.C. Henggeler)	88	131599028	Fugitive Dust Emissions from Off-Road Vehicle Maneuvers on Military Training Lands Larry E. Wagner, USDA-ARS, Manhattan, KS (L.E. Wagner, J. Meeks, J. Tataro, R. Maghirang)	
75	131620904	Evaluation of the Variable Rate Fertilization in winter crops for shallow soils using depth-soil mapping and crop simulation models in southeastern Pampas, Argentina Gabriel Vazquez-Amabile, AACREA, Buenos Aires, Argentina (G. Vazquez-Amabile, M. Gonzalo, S. Galbusera, G.B. Cueto, M. Pella)			Military vehicle trafficking impacts on vegetation and soil bulk density at Fort Benning, Georgia Larry E. Wagner, USDA-ARS, Manhattan, KS (L.E. Wagner, A. Retta, J. Tataro)	
76	131597192	Soil disinfection with Ozone (O3) as an alternative to methyl bromide - A sustainable practice in agriculture Nahed Msayleb, Iowa State University, Ames, IA (N. Msayleb, R. Kanwar, J. Van Leeuwen)	Poster # 89	Paper # 131620446	SW POSTER SESSION B - SW-23 DRAINAGE - Sponsored by SW-21, SW-22, SW-23, SW-24, SW-25, SW-26 Moderator: Matthew J. Helmers, Iowa State Univ, Ames, IA	
77	131620249	Modification of Generalized Method for the Parameter Estimation of the TANK model in Ungauged Watersheds Ji Hyun An, Seoul national university, Seoul, Republic of Korea (J. An, M. Kang, I. Song, J. Song, J. Jang, J. Kim)	90	131620947	Guidelines for Design and Construction of a Siphon Spillway: Real World Example Josh D. Boatwright, Clemson University, Clemson, SC (J.D. Boatwright, K.R. Kirk)	Title/Authors
78	131620025	Experimental study on a configuration design and parametric model for a flexible nozzle on a variable-rate sprinkler Wenting Han, Northwest A&F University, Yangling, China (W. Han, W. Liu)	91	131619742	Groundwater remediation optimal design of pump and treat systems by modified Firefly algorithm Amin Ahmadfard, McGill University, Montreal, QC, Canada PRESENTER: Jan Adamowski (A. Ahmadfard, M. Kazemzadeh Parsi, J. Adamowski, F. Daneshmad)	
79	131620536	Utilizing Wavelet Transforms and the Mann-Kendall Test to Assess Trends in Surface Air Temperature over Southern Ontario and Québec Jan Adamowski, McGill University, Macdonald Campus, Ste. Anne de Bellevue, QC, Canada (J. Adamowski, D. Nalley, B. Khalil, B. Ozga-Zielinski)	92	131597440	Food Security : Challenges to Water Resources Development in Nigeria AFOLAYAN, STEPHEN OLAOYE, afofastev@gmail.com Afolayan S. Olaoye, National Horticultural Research Institute, KANO, Nigeria (A.S. Olaoye)	
80	131590450	Impacts of Gravel Mulch on Sediment Yield Process under Simulated Rainfall Conditions Cuiping Yuan, Grandtopenk Group, Beijing, China (C. Yuan, Q. Yan, Y. Dong)	93	131577210	Stochastic Time Series Models Investigation for Estimating Reference Evapotranspiration (Khorasan Razavi Province, IRAN) Ali R. Tavakoli, Science & Research Branch, Islamic Azad University, Tehran, Islamic Republic of Iran (A.R. Tavakoli, E. Tavakoli)	
81	131618988	GIS based environmental analysis method for rural areas Hang Chen, Southwest Jiaotong University, Chengdu, China (H. Chen, Y. Fu, L.C. Brown)	94	131612145	Evaluation of Water Use Productivity indicators in the main agricultural products of Iran Mohammad Ali Bayat, Science & research branch, Islamic azad university, Tehran, Islamic Republic of Iran (M. Bayat, H. Babazadeh)	
82	131620799	Optimization of dry cell weight production of Scenedesmus sp. cultivation in biogas effluent using response surface methodology Yuguang Zhou, China Agricultural University, Beijing, China (Y. Zhou, G. Li, F. Ji, Y. Liu, R. Dong)	95	131620920	Studying the effects of climate change on cotton production in the Texas High Plains using the DSSAT-CROPGRO-Cotton Model Naga Raghuvver Modala, Texas A&M University, College Station, TX (N. Modala, S. Ale, N. Rajan, K.R. Thorp)	
					Modeling Surface Drainage in Paddy Block Area Considering Agricultural Water Supply Jung Hun Song, Seoul National University, Seoul, Republic of Korea (J. Song, M. Kang, I. Song, J. Jang, J. Kim)	



Technical Sessions



SW POSTER SESSION-SW-24 IRRIGATION -
Sponsored by SW-24, SW-241, SW-242, SW-243, SW-244, SW-245, SW-246
Moderator: Dana O. Porter, Texas A&M University, Lubbock, TX

- 111 131595324 **Optimization design of truss ultrasonic aeroponic cultivator**
Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, H. Guizhen)
- 112 131595331 **Development of Low Frequency Ultrasonic Atomization Nozzle Intelligent Driving Circuit**
Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, L. Changjian)
- 113 131595334 **Distribution of droplets sprayed by low-frequency ultrasonic atomizer**
Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, Z. Jingyu)
- 114 131595349 **Impedance characteristic of a novel low frequency ultrasonic nozzle**
Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, T. Yue)
- 115 131620057 **Flow field simulation and parameter optimization design on impact sprinkler**
Wenting Han, Northwest A&F University, Yangling, China (W. Han, L. Zhou)
- 116 131620532 **A design of an irrigation sprinkler rotation speed sensor**
Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, X. Yao)
- 117 131690789 **Acceptable value of microirrigation system uniformity**
Jian Wang, Northwest A&F University, Yangling, China (J. Wang, D. Zhu)
- 118 131621175 **Measure Soil Water Content by Soil Dielectric Dispersion Frequency**
Jinghui Xu, Northwest A&F University, Yangling, China (J. Xu, W. Han)

- | Poster # | Paper # | Title/Authors |
|----------|-----------|--|
| 96 | 131620820 | Water Foot Print for Ethanol Production of Brazilian Major Sugar Cane Varieties
Rubens D. Coelho, University of Sao Paulo, Piracicaba, Brazil (R.D. Coelho, R. Maschio, F.S. Barbosa, D.V. Leal) |
| 97 | 131593003 | Impact of irrigation management strategy on sizing of a solar-powered center pivot irrigation system
Hafiz F. Ahmed, University of Saskatchewan, Saskatoon, SK, Canada (H.F. Ahmed, W. Helgason) |
| 98 | 131593542 | Sand-filled reservoir: option for artificial ground water recharge in Limpopo Province, South Africa
Olufisayo A. Olufayo, Tshwane University of Technology, Pretoria, South Africa (O.A. Olufayo, J.M. Ndamuki, G. Ochieng) |
| 99 | 131620132 | Application of a Prototype Irrigation Controller for Korean Greenhouse Cultivation
Sung Wuk Ahn, Seoul National University, Seoul, Republic of Korea (S. Ahn, H. Kim) |
| 100 | 131620430 | A new tensiometer with hose connected ceramic measuring head and water collection chamber
Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, X. Zhang) |
| 101 | 131595274 | Development of aeroponic cultivation device control system
Gao Jianmin, Agricultural engineering research institute, Zhenjiang, China (G. Jianmin, L. Junyi) |
| 102 | 131598604 | A Participatory System Dynamics Modeling Approach for Soil Salinity Management
Azhar I. Baig, McGill University, Sainte Ann de Bellevue, QC, Canada PRESENTER: Jan Adamowski (A.I. Baig, S.O. Prasher, J. Adamowski) |
| 103 | 131618128 | Limitations of treated wastewater reuse in the Middle East and North Africa: Work-in-progress
Anne E. Dare, Purdue University, West Lafayette, IN (A.E. Dare, R.H. Mohtar, R. Boukchina, A. Rabi, B. Shomar) |
| 104 | 131583354 | Using horticultural plants to remove nutrients from renovated wastewater
Jie xu, Ohio state university, columbus, OH (J. xu, K. Mancl, O. Tuovinen) |
| 105 | 131597209 | Investigating Time Series Model and Chaos Theory Capabilities for Estimating Reference Crop Evapotranspiration (Khorasan Razavi, IRAN)
Ali R. Tavakoli, Science & Research Branch, Islamic Azad University, Tehran, Islamic Republic of Iran (A.R. Tavakoli) |
| 106 | 131620940 | Automatic Dosing of Fertigation Solution Tanks
Federico F. Hahn, Universidad Autonoma Chapingo, Chapingo, Texcoco, Mexico (F.F. Hahn, F. Gonzalez) |
| 107 | 131597386 | 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. Jiangang) |
| 108 | 131585173 | 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) |
| 109 | 131586414 | Preliminary application of the fuzzy c-mean clustering method to the soil mapping in the lower Heihe River
Lili Mao, institute of environment and sustainable in agriculture, Beijing, China (L. Mao, J. Yu, Y. Zhang) |
| 110 | 131595297 | Mechanics Performance of Atomization Cultivation Root
Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, Y. Wenchu) |

Monday, July 22 - 2:30PM-5:00PM
SESSION 133

- | Time | Paper # | Title/Authors |
|--------|-----------|---|
| 2:30PM | | Introduction |
| 2:35PM | 131592802 | Airborne hyperspectral imaging based citrus greening disease detection using different dimension reduction methods
Han Li, China Agricultural University, Beijing, China (H. Li, W. Lee, K. Wang) |
| 2:50PM | 131619932 | Using Hyperspectral Imaging for Assessment of Fungal infection on Whole Corn Ears
Haibo Yao, Mississippi State University, Stennis Space Center, MS (H. Yao, R. Kincaid, Z. Hruska, R. Brown, D. Bhatnagar, T. Cleveland) |
| 3:05PM | 131595564 | Using digital image classification and hyperspectral imaging to detect rice leaf blast
Lulu Wu, South China Agricultural University, Guangzhou, China (L. Wu, X. Ma, L. Qi, Z. Zheng, Z. Li) |
| 3:20PM | 131616169 | Estimating the growing season length using remotely sensed based vegetation indices: a case study for Washington State vineyards
Golnaz Badr, Washington State University, Prosser, WA (G. Badr, G. Hoogenboom) |
| 3:35PM | | Break |
| 3:45PM | 131593276 | Band selection of hyperspectral imagery for the classification of blueberry fruit maturity stages and leaf
Ce Yang, University of Florida, Gainesville, FL (C. Yang, W. Lee, P. Gader) |
| 4:00PM | 131589210 | Nitrogen Stress Detection for Potato Using Hyperspectral Imaging
Suraj Amatya, Washington State University, Pullman, WA (S. Amatya, M. Karkee, A.K. Alva) |
| 4:15PM | 131671283 | Integrating NIR Reflectance, Vis/NIR Interactance, and Hyperspectral Imaging Systems Data to Predict Physiological Status of Potato Tubers
Ahmed Rady, Michigan State University, East Lansing, MI (A. Rady) |



Technical Sessions



Monday, July 22 - 2:30PM-5:15PM

SESSION 134

BIO-SENSORS AND BIO-INSTRUMENTATION -

Sponsored by BE-23
Moderator: Ning Wang, Oklahoma State Univ, Stillwater, OK
LOCATION: VAN HORN C-SHERATON

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131599252	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. Burrs, P. Chaturvedi, 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 administartion, Suwon, Republic of Korea (H. Kim, G. Kim, B.G. Yu, J.T. Hong, S. Kim)
3:20PM		Break
3:30PM	131593622	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)

Monday, July 22 - 2:30PM-5:10PM

SESSION 135

MOBILE APP FOR AGRICULTURAL

APPLICATIONS - Sponsored by IET-254
Moderator: Joseph S. Dvorak, Univ of Kentucky, Lexington, KY
LOCATION: EMPIRE A-SHERATON

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	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. Ess, 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		Break
3:45PM	131596866	Tablet PC based Method of Farm Machinery Monitoring and Route Guidance Caicong Wu, China Agricultural University, Beijing, China (C. Wu, L. Ding, Y. Cai, M. Luo, J. Zhao)
4:00PM	131620122	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 Qingzhen Zhou, Northwest A&F University, Yangling, China (Q. Zhou, H. Zhang)

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

SESSION 136

DR RON SHEFFIELD STRUCTURES AND

ENVIRONMENT DIVISION POSTER SESSION -
Sponsored by SE
LOCATION: GILLHAM HALL-SHERATON

Poster #	Paper #	Title/Authors
119	131620722	Nutrient Flow and Distribution in Different Egg Layer Housing Systems Xing Jun Lin, University of California-Davis, Davis, CA (X. Lin, R. Zhang, S. Jiang, F. Mitloehner)
120	131619867	Air Flow Determination in a Commercial Broiler House via the Traverse Method Brian D. Luck, Mississippi State University, Mississippi State, MS (B.D. Luck, J.D. Davis, J.L. Purswell)
121	131614221	Milk yield and adaptation after removing and housing change of cows Peter Tongel, Animal Production Research Centre, Nitra, Slovakia (P. Tongel, J. Broucek, M. Uhrincat, A. Hanus)
122	131595866	Shade Structure Design and Evaluaton Roger Eigenberg, US Meat Animal Research Center, Clay Center, NE (R. Eigenberg, T.M. Brown-Brandl)
123	131593690	Heat Production of Broilers in Naturally Ventilated Barns Jairo A. Osorio Saraz, National University of Colombia, Medellin, Colombia PRESENTER: Ilda Tinoco (J.A. Osorio Saraz, K.S. Oliveira Rocha, L. Mendes, I.F. Ferreira Tinoco, R. Gates, F.A. Damasceno, R. Osorio Hernandez)
124	131598457	RFID for Broiler Tracking in an Environmental Preference Study Daniella J. Moura, UNICAMP, Campinas, Brazil (D.J. Moura, A.A. Maia, W. Silva, J. Sarubbi, B. Medeiros)
125	131579505	Testing of a Poultry Engineering Chamber Complex for Air Quality and Animal Welfare Studies Lingjuan W. Li, North Carolina State University, Raleigh, NC PRESENTER: P.S. Aditya (L.W. Li, R. Munilla, M. Adcock, S. Shah, M. Williams)
126	131618881	UK FANS UNIT - System Cost Reduction Through Data Analysis William Sympson, University of Kentucky, Lexington, KY (W. Sympson, M.P. Sama)
127	131594569	Development of a Control System for Gas Concentration in an Animal Preference Chamber Ryan M. Johnson, University of Illinois, Champaign, IL (R.M. Johnson, A.R. Green, R. Gates)
128	131617982	Potential of using inductive current sensors to monitor ventilation rate Morgan Hayes, USDA_ARS_MARC, Clay Center, NE (M. Hayes, H. Xin, T.A. Shepherd, J. Stinn, H. Li)
129	131594405	Emissions of H2S, NH3, VOC, PM10 and PM2.5 from swine production facilities in North America: a meta-analysis Zifei Liu, Kansas State University, Manhattan, KS (Z. Liu, W. Powers)
130	131598326	Application of Nanoparticles (NPs) in Livestock Manure and Their Effects on Air Emissions Dhan P. Gautam, North Dakota State University, Fargo, ND (D.P. Gautam, M.S. Borhan, G. Liu, S. Rahman)
131	131620731	Assessment of occupational exposure risk of workers to dust, gases and noise in swine facilities Alvin Alvarado, Prairie Swine Centre Inc., Saskatoon, SK, Canada PRESENTER: B.Z. Predicala (A. Alvarado, B.Z. Predicala)
132	131618610	Free chlorine loss during spray of membrane-less acidic electrolyzed water (MLAEW) and its antimicrobial effect on airborne bacteria from poultry house Yang Zhao, Iowa State University, Ames, IA (Y. Zhao, H. Xin, D. Zhao, W. Zheng, W. Tian, H. Ma, K. Liu, H. Hu, T. Wang, M. Soupir, W. Wang)
133	131595738	Water holding capacity and evaporative loss from organic bedding materials used in livestock facilities Mindy J. Spiehs, USDA ARS Meat Animal Research Center, Clay Center, NE (M.J. Spiehs, T.M. Brown-Brandl, J. Jaderborg, A. DiCostanzo)



Technical Sessions



- 134 131594456 **The Impact of Carbohydrate and Protein Level and Sources on Swine Manure Foaming Properties**
Mark Van Weelden, Iowa State University, Ames, IA (M. Van Weelden, D.S. Andersen, K.A. Rosentrater, B. Kerr, S.L. Trabue)
- 135 131619986 **Environmental Impacts of Manure Staging Areas**
Rhonda Miller, Utah State University, Logan, UT (R. Miller, M. Jensen, S. Murdock, M. Maynes)
- 136 131619443 **A County-Level Assessment of Manure Nutrient Availability Relative to Crop Nutrient Capacity in Iowa: Spatial and Temporal Trends**
Daniel S. Andersen, Iowa State University, Ames, IA (D.S. Andersen)
- 137 131619616 **Impact of Temperature and Mixing on Methane Production Rates of Swine Manures obtained from Deep pit Storages**
Daniel S. Andersen, Iowa State University, Ames, IA (D.S. Andersen, A. Batista, M. Van Weelden)
- 138 131620467 **On-Farm Evaluation of Two Liquid Dairy Manure Application Methods to Reduce Odor and Ammonia Emissions**
Lide Chen, University of Idaho, Moscow, ID PRESENTER: Sai K. Reddy Yadanaparathi (L. Chen, S. Yadanaparathi, M. De Haro Marti, W. Gray, H. Neibling, M. Chahine)
- 139 131620669 **Measurement Accuracy of a Multiplexed Portable FTIR-Surface Chamber System for Estimating Gas Emissions**
Pakorn Sutitarnnontr, Utah State University, Logan, UT PRESENTER: Rhonda Miller (P. Sutitarnnontr, E. Hu, R. Miller, M. Tuller, S.B. Jones)
- 140 131617903 **CFD Analysis of Natural Ventilation and Ammonia in a Rabbits Building**
Jorge Flores-Velazquez, University of San Luis Potosi, San Luis Potosi, Mexico PRESENTER: F. Villarreal (J. Flores-Velazquez, F. Villarreal, A. Rojano, J. Montero)
- 141 131620819 **Greenhouse gas emissions from beef cattle feedlot pen surfaces in Texas during fall**
Kenneth D. Casey, Texas A&M AgriLife Research, Amarillo, TX (K.D. Casey, V. Vaddella, H.M. Waldrip, R.W. Todd, W.B. Faulkner)
- 142 131620720 **Alternatives for animal drinking and barn cleaning to reduce water use in swine production operations**
Bernardo Z. Predicala, Prairie Swine Centre Inc., Saskatoon, SK, Canada (B.Z. Predicala, A. Alvarado, Y. Jin)
- 143 131621753 **CFD Simulation of Manure Pit Ventilation using SolidWorks**
Daniel Hofstetter, The Pennsylvania State University, University Park, PA PRESENTER: Virendra Puri (D. Hofstetter, H.B. Manbeck, V.M. Puri, D.J. Murphy)
- 144 131620960 **A literature review on disinfecting chemicals for improved bio-security of emergency animal mortality composting and anaerobic digestion**
Lam T. Nguyen, Iowa State University, Ames, IA (L.T. Nguyen, T. Glanville, J. Koziel, T. Frana)

Monday, July 22 - 1:30PM-2:30PM SESSION 137

ASABE SEATBELT AND ROPS USAGE LOGO CONTEST - Sponsored by ESH-01
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

Monday, July 22 - 2:30PM-5:00PM SESSION 138

Time Paper #
2:30PM
2:35PM

2:50PM 131619707

3:05PM 131620455

3:20PM 131620561

3:35PM

3:45PM 131620668

4:00PM 131621292

4:15PM 131590333

Monday, July 22 - 2:30PM-5:00PM SESSION 139

Time Paper #
2:30PM
2:35PM

2:50PM 131608291

3:05PM 131587727

3:20PM

3:30PM 131591989

MICROWAVE AND RADIO FREQUENCY HEATING AND DRYING IN AGRICULTURAL AND FOOD PROCESSING - Sponsored by FPE-703 LOCATION: EMPIRE C-SHERATON

Title/Authors
Introduction
Radio frequency assisted with hot air drying protocol and uniformity of in-shell Macadamia nuts
Yunyang Wang, Northwest A&F University, Yangling, China (Y. Wang, L. Zhang, J. Tang, S. Wang)
Optimization of microwave-convective drying of oyster mushrooms (Pleurotus ostreatus) using response-surface methodology
Prem P. Srivastav, Indian Institute of Technology, Kharagpur, India (P.P. Srivastav, M. Bhattacharya)
Kinetics of Chemical Marker M2 Formation in Egg White Model Food for Microwave-assisted Pasteurization Process
Wenjia Zhang, Washington State University, Pullman, WA (W. Zhang, F. Liu, S. Bohnet, J. Tang, Z. Tang)
Effect of Radio Frequency Heating on Functional Properties of Egg White Powder
Sreenivasula Reddy Boreddy, University of Nebraska-Lincoln, Lincoln, NE (S. Boreddy, S. Birla, G. Froning, S. Jeyamkondan)
Break
Measurement of Complex Permittivity of Thin Microwavable Susceptor Films Using Split-post Dielectric Resonator
Krishnamoorthy Pitchai, University of Nebraska, Lincoln, NE (K. Pitchai, J. Chen, S. Birla, R.R. Gonzalez, J. Subbiah)
Study of Power and Energy used in Microwave Assisted Thermal Sterilization (MATS)
Rajat Tyagi, Washington State University, pullman, WA (R. Tyagi, J. Tang, F. Liu, Z. Tang, V. Himsi, F. Li)
Heating Uniformity Improvement with Ultem Polyetherimide for Low Moisture Food Subjected into Radio Frequency Heating
Yang Jiao, Washington State University, Pullman, WA (Y. Jiao, J. Tang, S. Wang)

PHYSICAL PROPERTIES AND MODELING OF FOOD AND BIOPRODUCTS - Sponsored by FPE-701 Moderator: Lope G. Tabil, Univ of Saskatchewan, Saskatoon, SK, Canada LOCATION: CHOUTEAU A-SHERATON

Title/Authors
Introduction
Effect of condensed distillers solubles and drying methods on selected chemical and physical characteristics of laboratory-prepared wheat distillers dried grain with solubles
Maria Rosario Mosqueda, University of Saskatchewan, Saskatoon, SK, Canada PRESENTER: Lope Tabil (M. Mosqueda, L.G. Tabil)
Single-Screw Extrusion Processing of Soy White Flakes (SWF) and High Protein Distiller Dried Grains (HP-DDG)
Sushil K. Singh, South Dakota State University, Brookings, SD (S.K. Singh, K. Muthukumarappan)
Material Properties of Wheat Mill Streams for Discrete Element Method Modeling
Abhay Patwa, Kansas State University, Manhattan, KS (A. Patwa, K. Ambrose)
Break
Isolation and Characterization of Camelina Proteins from Camelina Meal
Ningbo Li, Kansas State University, Manhattan, KS (N. Li, D. Wang, X.S. Sun, G. Qi)



Technical Sessions



3:45PM 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)

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		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		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		Introduction
2:35PM	131592851	Enzyme Aided Specialty Oil Refining Nurhan T. Dunford, Oklahoma State University, Stillwater, OK (N.T. Dunford, S. Al Sharqi, 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. Danao, K. Rausch)
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		Break
3:45PM	131620135	Application of Edible Coatings on Japanese Loquat (Eriobotrya japonica T.) Postharvest Quality Carlos J. Marquez Cardozo, National University of Colombia, Medellin, Colombia (C.J. Marquez Cardozo)

4:00PM 131596222 Development of a Biorenewables Process Evaluation Tool for Early-Stage Cost Analysis
Joshua Claypool, Iowa State University, Ames, IA (J. Claypool, D. Raman)

4:15PM 131629893 Discrimination among ginsengs of different growing years based on electronic nose
Cui Shaoqing, Zhejiang University, Hangzhou, China
PRESENTER: Cao Lin (C. Shaoqing, C. Lin, W. Jun)

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		Introduction
2:35PM	131595877	Downdraft gasification performance of forage sorghum Prakash Bhoi, Oklahoma State University, Stillwater, OK (P. Bhoi, K.N. Patil, R.L. Huhnke)
2:50PM	131620735	Comprehensive experimental evaluation of torrefied pine as a gasifier feedstock in a bubbling fluidized bed Avanti Kulkarni, Auburn University, Auburn, AL (A. Kulkarni, N. Abdoulmoumine, S. Adhikari, S. Bhavnani, S.E. Taylor)
3:05PM	131593629	CFD-based biomass gasification model incorporating fluidization hydrodynamics and reaction kinetics Ashokkumar Sharma, Oklahoma State University, Stillwater, OK (A. Sharma, A. Kumar, R.L. Huhnke)
3:20PM		Break
3:30PM	131620618	Thermal Degradation of Raw and Thermally Processed Swine Manure Separated Solids (SMSS) in Air and Nitrogen Atmosphere Mahmoud A. Sharara, University of Arkansas, Fayetteville, AR (M.A. Sharara, S. Sadaka)
3:45PM	131620639	Gasification of Swine Manure Solids as an Energy and Biochar Production Alternative Mahmoud A. Sharara, University of Arkansas, Fayetteville, AR (M.A. Sharara, S. Sadaka)

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		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	131622060	A Method for Controlling Enzyme Addition in Cheese Making Fred Payne, University of Kentucky, Lexington, KY (F. Payne)
3:20PM		Break
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)
3:30PM	131594789	Characterizing the Response of a Hyperspectral Camera Used in Close Range Imaging under Laboratory Conditions Peter A. Larbi, Washington State University, Prosser, WA (P.A. Larbi, S. Amatya, M. Karkee)
3:45PM	131620240	A feasibility study of aflatoxins detection by terahertz time-domain spectroscopy Min Chen, Zhejiang University, Hangzhou, China PRESENTER: Huari Li (M. Chen, L. Xie)



Technical Sessions



Monday, July 22 - 2:30PM-5:00PM
SESSION 144

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131596417	Life Cycle Assessment of Biochar versus Metal Catalysts for Switchgrass Gasification Syngas Conditioning Robert Frazier, Oklahoma State University, Stillwater, OK (R. Frazier)
2:50PM	131619794	How Does Biochar Application To Soil Influence Life-cycle GHG Emissions Of Biofuels Generated From Pyrolysis? Zhichao Wang, Argonne National Laboratory, Argonne, IL (Z. Wang, J. Dunn, J. Han, M. Wang)
3:05PM	131580611	Life Cycle Assessment of Corn Stover Torrefaction Plant Integrated with a Corn Ethanol Plant and a Coal Fired Power Plant Nalladurai Kaliyan, University of Minnesota, Saint Paul, MN (N. Kaliyan, R. Morey, D.G. Tiffany, W.F. Lee)
3:20PM	131620079	Techno-economic Assessment of Charcoal Production for Carbon Sequestration Amit Kumar, University of Alberta, Edmonton, AB, Canada (A. Kumar, J. Thakkar)
3:35PM		Break
3:45PM	131619579	From Waste to Worth: Environmental impacts and sustainability of manure processing pathways Horacio A. Aguirre-Villegas, University of Wisconsin-Madison, Madison, WI (H.A. Aguirre-Villegas, R. Larson)
4:00PM	131621432	Cradle-to-gate Life Cycle Assessment of Regionally Produced Beef in the Palouse Region of Northwestern US Dev S. Shrestha, University of Idaho, Moscow, ID (D.S. Shrestha, D.J. Roop)

Monday, July 22 - 2:30PM-5:00PM
SESSION 145

MODELING BIOLOGICAL PROCESSES - PART 2 -
Sponsored by BE-2, BE-4
Moderator: Israel S. Dunmade, Mount Royal Univ Calgary, Calgary, AB, Canada
LOCATION: ROANOKE-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131619193	Climate Effects on Algae Production in The ARID-HV Raceway George Khawam, University of Arizona, Tucson, AZ (G. Khawam, P. Waller, M. Huesemann)
2:50PM	131620172	Individual assessment of lameness through back posture analysis Claudia Bahr, KU Leuven, Leuven, Belgium (C. Bahr, S. Viazzi, A. Schlageter-Tello, T. Van Hertem, C. Bites Romanini, I. Halachmi, K. Lokhorst, D. Berckmans)
3:05PM	131620326	Development of a bivariate mathematical model to simultaneously characterize the dose-time-responses of pro-oxidant agents Thomas P. Curran, University College Dublin, Dublin, Ireland (T.P. Curran, M.A. Prieto, Y. Anders, M.A. Murado)
3:20PM	131620706	Analysis of Ammonia Emissions from Layer Housing using Time Series Data Mining Shule Liu, Purdue University, West Lafayette, IN (S. Liu, J. Ni, A. Heber)
3:35PM		Break
3:45PM	131620936	Modeling the Electro-magnetic Properties of Avian Influenza Virus in a Flow Cell with an Interdigitated Nanoelectrode Using Comsol Zach Callaway, University of Arkansas, Fayetteville, AR (Z. Callaway, R. Wang, Y. Li)

4:00PM	131620634	Computational Analysis of the Growth of Microalgae on Swine Wastewater in a Bubble Column Photobioreactor Hossein Amini, North Carolina Agricultural and Technical State University, Greensboro, NC (H. Amini, L. Wang, B. Zhang, A. Shahbazi)
4:15PM	131630900	ATP Synthesis via Artificial Photosynthesis Hao Lu, North Carolina State University, Raleigh, NC (H. Lu, W. Yuan)
4:30PM	131631085	Pretreatment and Properties of Ultrastructural Straw Used for Biological Hydrogen Production Quan-guo Zhang, Hernan Agricultural University, Zhengzhou, China (Q. Zhang)
4:45PM	131593488	Spatial approaches in biomass feedstock production, supply and eco-environmental impact modeling Zewei Miao, University of Illinois at Urbana-Champaign, Urbana, IL (Z. Miao, T. Grift, K. Ting)

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131583395	Evaluation of a Commercial Low Impact Development and an Adjacent Traditional Development in Raleigh, NC for Hydrology and Water Quality Ryan J. Winston, North Carolina State University, Raleigh, NC (R.J. Winston, C.E. Wilson, W. Hunt)
2:50PM	131622122	Curve Number Estimation for Engineered Gravel Parking Lots Haley Malle, Oklahoma State University, Stillwater, OK (H. Malle, J.R. Vogel, D.E. Storm)
3:05PM	131619467	Modeling the Water Quantity and Quality of the Clear Creek Watershed in the Coastal Zones as a Pre-development Scenario using SWAT Mijin Seo, Texas A&M University, College Station, TX (M. Seo, F. Jaber)
3:20PM	131650902	Hybrid Anaerobic Digester-Microbial Fuel Cell for Energy and Nutrient Capture from High-Strength Wastewater Kyla Gregoire, University of Maryland, College Park, MD (K. Gregoire, S.A. Lansing)
3:35PM		Break
3:45PM	131620367	Greywater Treatment System Modeling: An approach Using Simulated Greywater Shashi Kant, Texas A&M University, College Station, TX (S. Kant, F. Jaber, R. Karthikeyan)
4:00PM	131595905	Improving Water Quality in Rainwater Harvesting in Sierra Leone Jessica J. Lay, Oklahoma State University, Stillwater, OK (J.J. Lay, B.M. Koroma, J.R. Vogel, J.F. Borsuah, G. Brown)
4:15PM	131593876	Sustainable rice and livestock production for food security in Sub-Saharan Africa Mohammed Bakari, McGill University, Ste-Anne-de-Bellevue, QC, Canada (M. Bakari)

Monday, July 22 - 2:30PM-5:15PM
SESSION 147

FOREST-BASED BIOMASS: HARVESTING, PROCESSING, TRANSPORT AND STORAGE - Sponsored by T-12, T-11
Moderator: Steven E. Taylor, Auburn Univ, Auburn, AL
LOCATION: LIBERTY-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131592844	Woods Storage on Woody Biomass Moisture Content and Fuel Quality Yingqian Lin, Michigan State University, East Lansing, MI (Y. Lin, K. Henn, F. Pan)



Technical Sessions



- 2:50PM 131596593 **The Impact of Spatial Distribution and Terrain on the Delivered Cost of Woody Biomass Feedstocks**
Damon Hartley, West Virginia University, Morgantown, WV (D. 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**
- 3:35PM 131596504 **Demonstrations of a Low-Energy Shear Comminution Machine**
David Lanning, Forest Concepts, LLC, Auburn, WA (D. Lanning, C. Lanning, J. Dooley)
- 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

- | Time | Paper # | Title/Authors |
|--------|-----------|---|
| 2:30PM | | Introduction |
| 2:35PM | 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, 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. Beheshti) |
| 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**
Ganesh 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
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.

Monday, July 22 - 2:30PM-5:00PM
SESSION 150

Time Paper #

CHINA EXCHANGE IN FOOD, ENERGY AND ENVIRONMENT - Intl-601, AOCABFE
LOCATION: CHICAGO C-SHERATON
Title/Authors
Maintaining a sustainable environment while meeting rising demands for food and energy is an imperative global challenge. The US Department of Agriculture's priority areas of research, education, and development include food security and safety, sustainable energy, and climate change and variability. China's 12th 5-year plan has a focus on accelerating the development of modern agriculture. The government also invests heavily in renewable energy and environmental control technologies. In today's global economy, collaboration is required to transform the global challenges into economic development opportunities. China and the U.S. are the world's two largest economies, greenhouse gas emitters, and energy consumers, and together, have the greatest need and potential benefits to collaborate. Collaborations will lead to a new generation of professionals and entrepreneurs with systematic and multidisciplinary training and global perspectives, who can address current food, energy, and environmental problems with transformational technologies.

The goals of the 2013 AOC China Exchange Forum are to: (1) share on-going successful Sino-US collaboration programs in food, renewable energy, and the environment control, (2) promote new collaboration among the academia, industry and government agencies in the areas, and (3) explore new directions and forms of collaborations in the areas.

- 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



Technical Sessions



3:30PM	Wastewater treatment in rural china: from research to practice Dr. Karen Mandl, The Ohio State University	9	131594649	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)
3:45PM	Sino-US collaborations in Energy and the Environment Dr. Yuanhui Zhang, University of Illinois	10	131596009	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)
4:00PM	Partnership in Academic Mobility Dr. K.C. Ting, University of Illinois	11	131596043	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)
4:15PM	Experiences in collaboration with Chinese industries Dr. Ruihong Zhang, University of California at Davis	12	131647980	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)
4:30PM	Panel Q&A and free discussions	13	131620550	Teaching Precision Agriculture Technology with Modified Diesel Golf Cart Hunter F. Massey, Clemson University, Clemson, SC (H.F. Massey, K.R. Kirk)

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 Pamell, 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 (TCEQ)

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

Poster #	Paper #	Title/Authors		
1	131596090	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)	15	131593495
2	131618943	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)	16	131498088
3	131619419	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)	17	131602809
4	131620279	Optical Sprayer Nozzle Discharge Sensor Joseph Dvorak, University of Kentucky, Lexington, KY (J. Dvorak, L. Bryant)	18	131596766
5	131620626	A Rotary Test Fixture for Steady-State Position Error Modeling Michael P. Sama, University of Kentucky, Lexington, KY (M.P. Sama, T.S. Stombaugh)	19	131592292
6	131621100	A Method for Fuel Efficiency Classification of Agricultural Tractors Kyeong U. Kim, Seoul National University, Seoul, Republic of Korea (K.U. Kim, C. Shin)	20	131581191
7	131595310	Design of a ultrasonic compound gauss-profile horn for big form factor Gao Jianmin, Jiangsu university, Zhenjiang, China (G. Jianmin, L. Daipeng)	21	131619972
8	131595314	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)	22	131616203
			23	131617562
				Remote Hydraulic Circuits for Zero Turning Radius Mowers Kendall R. Kirk, Clemson University, Clemson, SC (K.R. Kirk, H.F. Massey, B.T. Woody)
				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)
				Development of a High-efficient Weeding Robot in the Crop Fields Lie Tang, Iowa State University, Ames, IA (L. Tang, Y. Chen, J. Che, Y. Wang)
				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)
				Spray performance of an experimental variable rate sprayer in commercial nurseries and vineyards Yu Chen, The Ohio State University, Wooster, OH PRESENTER: Erdal Ozkan (Y. Chen, H. Zhu, H. Liu, Y. Shen, R. Zondag, E. Ozkan)
				Evaluation methods to verify the improvements in measuring soil physical properties by new fusion device using geostatistical analysis KyouSeung Lee, SugnKyunKwan Univ., Suwon, Republic of Korea (K. Lee, D. Lee, Y. Cho, S. Cho, J. Park)
				Development and Evaluation of a Differential Lock Control System for a MF-399 Tractor Mohammad Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran PRESENTER: Mohammadmehdi Maharlooei (M. Loghavi, M. Jalili, S. Kamgar)
				Feasibility Study of Estimating Nutritional Quality Properties of Alfalfa Crop using on-the-go Measurement of Shear Force during Baling Operation Mohammad Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran PRESENTER: Mohammadmehdi Maharlooei (M. Loghavi, M. Maharlooei)



Technical Sessions



- 24 131617690 **Construction of Alfalfa Yield Map using the Plunger Force of a Rectangular Hay Baler**
Mohammad Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran PRESENTER: Mohammadmehdi Maharlooei (M. Loghavi, H. Hoshmand)
- 25 131621355 **Comparison of Yield and Yield components of Maize in Uniform and Targeted-discrete Flame Weeding Methods**
Mohammad Loghavi, Shiraz University, Shiraz, Islamic Republic of Iran PRESENTER: Mohammadmehdi Maharlooei (M. Loghavi, R. Loni)

Tuesday, July 23 - 9:30AM-12:15PM

SESSION 202

PRECISION AGRICULTURE - Sponsored by PM-54
Moderator: TBA
LOCATION: NORTHROP-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131596449 | Effect of Ground Speed and Head Revolutions on the Picking Efficiency of Commercial Wild Blueberry Harvester
Aitazaz Farooque, Dalhousie University, Truro, NS, Canada (A. Farooque, Q. Zaman, D. Groulx, A. Schumann, T. Quang, Y. Chang, T. Esau) |
| 9:50AM | 131598763 | Effect of Split Fertilizer Application on Ammonia Volatilization Losses in Wild Blueberry Fields
Asif Abbas, Dalhousie University, Truro, NS, Canada (A. Abbas, Q. Zaman, G. Brewster, A. Schumann, S. Saleem) |
| 10:05AM | 131619241 | Apple Harvesting Techniques
Mark De Kleine, Washington State University, Prosser, WA (M. De Kleine, M. Karkee, K. Lewis, Q. Zhang) |
| 10:20AM | 131620970 | Evaluation of Agricultural Field Machinery Data as a Potential and Beneficial Source for Big Data to Improve Agricultural Production Practices
Joe D. Luck, University of Nebraska-Lincoln, Lincoln, NE (J.D. Luck, S.K. Pitla, J.P. Fulton, S. Shearer) |
| 10:35AM | | Break |
| 10:45AM | 131621156 | Sensor Based vs. Map Based Variable Rate Nitrogen Application
Gary Roberson, North Carolina State University, Raleigh, NC (G. Roberson) |
| 11:00AM | 131598694 | Variable Rate Fertilizer Application in Wild Blueberry Fields: Impacts on Plant Growth and Yield
Shoab Saleem, Dalhousie University, Truro, NS, Canada PRESENTER: Q. Zaman (S. Saleem, Q. Zaman, A. Schumann, A. Madani, D. Percival, A. Farooque) |
| 11:15AM | 131618645 | Development of a control algorithm for intra-row weeding claw device based on trochoidal motion
Lian Hu, South China Agricultural University, GuangZhou, China (L. Hu, X. Luo, Z. Zhang) |
| 11:30AM | 131617848 | Orientation Sorting Mechanism Analysis and Device Design of Maize Seed in Vibration
Yingbiao Wang, China Agricultural University, Beijing, China (Y. Wang, L. Xu) |

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

SESSION 203

ADVANCES IN PESTICIDE APPLICATION - Sponsored by PM-23/6
Moderator: Harold W. Thistle, USDA Forest Service, Morgantown, WV
LOCATION: FREMONT-SHERATON

- | Time | Paper # | Title/Authors |
|--------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131620283 | Field Data Derived Performance Factors for Developing and Evaluating Spray Application Technologies
Joe D. Luck, University of Nebraska-Lincoln, Lincoln, NE (J.D. Luck, A. Sharda, J.P. Fulton, S. Shearer) |
| 9:50AM | 131592719 | Improving collision angle during electrostatic spraying and enhancement of deposition uniformity
Samuel Gan-Mor, Institute of Agricultural Engineering, Bet Dagan, Israel (S. Gan-Mor, B. Ronen, K. Ohaliav) |

- | | | |
|---------|-----------|--|
| 10:05AM | 131594711 | Air velocity distributions inside tree canopies from a variable-rate air-assisted sprayer
Heping Zhu, ATRU, Wooster, OH (H. Zhu, J. Gu, W. Ding) |
| 10:20AM | 131583129 | Evaluation of Aerial Spraying to Combat Hemlock Woolly Adelgid
Harold W. Thistle, USDA Forest Service, Morgantown, WV (H.W. Thistle, B. Onken, W.C. Hoffmann, B. Fritz, R. Reardon, J. Bonds, K. Felton, G. Kees, A. Hewitt, B. Thomson) |
| 10:35AM | | Break |
| 10:45AM | 131619551 | Uncertainty Analysis Applied to Mass Balance Calculations in Field Studies of Agircultural Spraying
Durham K. Giles, Univ. of Calif. - Davis, Davis, CA (D.K. Giles, H.W. Thistle) |
| 11:00AM | 131593439 | Canopy Penetration by Aircraft Vortices
Milton Teske, Continuum Dynamics, Inc., Ewing, NJ (M. Teske, H.W. Thistle) |
| 11:15AM | 131609672 | Development of a Puff Model to Inform Applied Spray Drift Models
Steve Edburg, Washington State University, Pullman, WA (S. Edburg, B.K. Lamb, H.W. Thistle) |
| 11:30AM | 131594669 | Development of a real-time chemical injection system for air-assisted variable-rate sprayers
Yue Shen, The Ohio State University, Wooster, OH (Y. Shen, H. Zhu, H. Liu, Y. Chen) |

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

SESSION 204

MODELING HYDROLOGY AND POLLUTANT TRANSPORT - PART 1 - Sponsored by SW-21
Moderator: Patricia Smith; Debabrata Sahoo, Woolpert Inc, Columbia, SC
LOCATION: BENTON A-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131585427 | Development and Validation of Ordinary Least Squares Regression Models for Estimating Irrigated and Rainfed Maize and Soybean Yields
Vivek Sharma, UNL, Lincoln, NE (V. Sharma, D. Rudnick, S. Irmak) |
| 10:05AM | 131578522 | Global sensitivity analysis and parameter estimation for a quasi analytical model of canal-aquifer interaction applied in south Florida
Isaya Kisekka, University of Florida, Homestead, FL (I. Kisekka, K.W. Migliaccio, R. Muñoz-Carpena, Y. Khare) |
| 10:20AM | 131580013 | A Daily Water Table Simulation Model for Poorly Drained South Carolina Coastal Plain Soils
Devendra M. Amatya, USDA Forest Service, Cordesville, SC (D.M. Amatya, M. Fialkowski, A. Bitner) |
| 10:35AM | | Break |
| 10:45AM | 131583576 | Improve the representation of LID practices and BMPs in L-THIA-LID model
Yaoze Liu, Purdue University, West Lafayette, IN (Y. Liu, B. Engel) |
| 11:00AM | 131591779 | Determining Ideal Nitrogen Loads in Rerouted Drainage Water from the Pamlico Sound to Restored Forested Wetlands - An Experimental and Modeling Approach
Tiffany Messer, North Carolina State University, Raleigh, NC (T. Messer, M. Burchell, F. Birgand) |
| 11:15AM | 131619559 | Development of a total phosphorus model for a piedmont region river by coupling a watershed and an in-stream model
Debabrata Sahoo, Woolpert Inc, Columbia, SC (D. Sahoo, J. Schooler, J. Riddle, W. Spearman, J. Wortkoetter) |



Technical Sessions



Tuesday, July 23 - 9:30AM-12:00PM SESSION 205

Time	Paper #	Title/Authors
9:30AM		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
9:35AM	131619278	Introduction ENSO Induced Climate Variability Impacts on Groundwater Levels in the Lower Apalachicola-Chattahoochee-Flint River Basin Subhasis Mitra, Auburn University, Auburn, AL (S. Mitra, P. Srivastava)
9:50AM	131594097	Statistical downscaling of seasonal climate forecasts of the National Multi-Model Ensemble in the southeastern United States Christopher J. Martinez, University of Florida, Gainesville, FL (C.J. Martinez, D. Tian, W.D. Graham, S. Hwang)
10:05AM	131619557	How Rising Temperatures Have Changed Winter Hydrology Across Ontario Ramesh Rudra, University of Guelph, Guelph, ON, Canada (R. Rudra, T. Dickinson, S. Ahmed)
10:20AM		Break
10:30AM	131619646	West Texas drought modeling using the SWAT hydrologic model Rachel McDaniel, Texas A&M University, College Station, TX (R. McDaniel, C. Munster, T. Cothren, J. Nielsen-Gammon)
10:45AM	131619062	Modeling of corn yield at a regional scale to study its response to spatial soil and climate variability Vaishali Sharda, Washington State University, Prosser, WA (V. Sharda, G. Hoogenboom, C. Handyside, R.T. McNider, B.V. Ortiz)

Tuesday, July 23 - 9:30AM-12:15PM SESSION 206

Time	Paper #	Title/Authors
9:30AM		SOIL EROSION RESEARCH - Sponsored by SW-22, SW-223 Moderator: Anita Thompson LOCATION: VAN HORN A-SHERATON
9:35AM	131596581	Introduction Modified Excess Shear Stress Model Parameters based on Mechanistic Predictions from a Detachment Rate Model Garey A. Fox, Oklahoma State University, Stillwater, OK (G.A. Fox, A. Al-Madhhachi, G. Hanson)
9:50AM	131596568	Application of Excess Shear and Mechanistic Detachment Rate Models for the Erodibility of Cohesive Soils Erin Daly, Oklahoma State University, Stillwater, OK (E. Daly, G.A. Fox, A. Al-Madhhachi)
10:05AM	131585251	Effects of long-term fertility management on the splash erodibility of ferruginous soils Gregory Obiechefu, Federal University of Technology, Owerri, Nigeria (G. Obiechefu)
10:35AM		Break
10:20AM	131596900	Study on the Model for Volume Estimation of Landslides by Using 3-D Laser Scanner in Wenchuan Earthquake Area Zhanpeng Chen, China Agricultural University, Beijing, China PRESENTER: Cheng (Z. Chen, T. Lei, Q. Yan, H. Hu, M. Xiong, Z. Li)
10:45AM	131597607	The Assessment of the Efficiency of different Soil Conservation Measures on an Agricultural Watershed Area in Okinawa, Japan: An Application of GeoWEPP Model Shantha A. Hewage, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Bunkyo-ku, Japan (S.A. Hewage, K. Sakai, T. Nakandakari, K. Okada, T. Takahashi)

11:00AM	131629792	Flat Residue Loss by Wind for Different Crop Types and its Influence on Soil Wind Erosion Susceptibility Larry E. Wagner, USDA ARS, Manhattan, KS (L.E. Wagner, J. Zhang, K. Talley)
11:15AM	131620416	Dust Transport and Abrasion Assessment within Simulated Standing Vegetation Howell B. Gonzales, Kansas State University, Manhattan, KS (H.B. Gonzales, M. Casada, L. Hagen, J. Tatarko, R. Maghirang)
11:30AM	131620845	Erosion Response of Loblolly Pine Stands Subjected to Prescribed Burning in the Piedmont Region of South Carolina Emily A. Carter, U.S. Forest Service, Auburn, AL (E.A. Carter, L. Morris)

Tuesday, July 23 - 9:30AM-12:50PM SESSION 207

Time	Paper #	Title/Authors
9:30AM		AGRICULTURAL WATER MANAGEMENT - IRRIGATION AND DRAINAGE - Sponsored by SW-23 Moderator: Christopher Hay, South Dakota State University, Brookings, SD LOCATION: VAN HORN B-SHERATON
9:35AM	131596157	Introduction Groundwater availability for future agricultural production in Texas High Plains Zhuping Sheng, Texas A&M University, El Paso, TX (Z. Sheng, C. Wang, Y. Liu, Y. Wang)
9:50AM	131607629	Partitioning Evapotranspiration between Transpiration and Soil Evaporation in No-Till and Disk-Tilled Maize Fields Lameck O. Odhiambo, University of Nebraska - Lincoln, Lincoln, NE (L.O. Odhiambo, S. Irmak)
10:05AM	131612436	Revising Crop Coefficient for Washington State Tina Karimi, WSU, Pullman, WA (T. Karimi, T. Peters, C. Stockle)
10:20AM	131620305	Driving force and factors influencing changes for farmers' irrigation methods based on an empirical analysis in Shaanxi province Yuxiang Huang, Northwest A&F University, Yangling, China (Y. Huang, W. Han, Q. Lei, Y. Ji, P. Gao)
10:35AM		Break
10:45AM	131620344	Sugarcane in the Brazilian Savanna (Cerrado): Effects of irrigation on biomass production and partitioning Vinicius B. Bufon, Embrapa Cerrados, Brasilia, Brazil (V.B. Bufon, J. Mesquita, R. Zuketta, L. Telles, I. Domingos, B. Evangelista, F. Marin)
11:00AM	131620909	Modeling surface drainage in paddy block area considering agricultural water supply Jung-hun Song, Seoul National University, Seoul, Republic of Korea (J. Song, M. Kang, I. Song)
11:15AM	131618694	Calibration of STICS Crop Model under Different Nitrogen Management Scenarios Ajay Singh, McGill University, Ste Anne de Bellevue, QC, Canada (A. Singh, C. Madramootoo, D. Smith, M. Goyal)
11:30AM	131620832	A study on the economic analysis of wastewater reclamation and reuse systems for agriculture using a system dynamics approach Hanseok Jeong, Seoul National University, Seoul, Republic of Korea (H. Jeong, K. Suh, H. Kim, S. Park, H. Kim, C. Seong, T. Jang)



Technical Sessions



Tuesday, July 23 - 9:30AM-12:00PM
SESSION 208

Time	Paper #	Title/Authors
9:30AM		ADVANCES IN IRRIGATION MANAGEMENT - Sponsored by SW-24, SW-244 Moderator: Suat Irmak, , Lincoln, NE LOCATION: VAN HORN C-SHERATON
9:35AM	131562633	Introduction Combining GIS, Remote Sensing, and Simulation Modeling for Analyzing Precision Irrigation Water Management Strategies Kelly R. Thorp, USDA-ARS, Maricopa, 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		Break
10:45AM	131595984	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 Conventional 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	131586288	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

Time	Paper #	Title/Authors
9:30AM		ENVIRONMENTAL IMPACTS OF LAND-USE CHANGE - Sponsored by SW-26 Moderator: Jonathan P. Aguilar, USDA-ARS NGPRL, Mandan, ND LOCATION: EMPIRE A-SHERATON
9:35AM	131620808	Introduction 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 Pai, University of Arkansas, Fayetteville, AR (N. Pai, D. Saraswat)
10:05AM	131620759	NPS pollution analysis in groundwater and streams of rural watersheds in western and southeastern Pampas, Argentina Gabriel Vazquez-Amabile, AACREA, Buenos Aires, Argentina (G. Vazquez-Amabile, A.P. Ricca, D. Rojas, M.V. Feler, A. Rodriguez-Vagaría, F. Gaspari, N. Bosch, M.L. Ortiz-de-Zarate, E. Flamenco, P.A. Mercuri, D. Pons, F. Feiguin)
10:20AM		Break

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. Kays)
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)

Tuesday, July 23 - 9:30AM-12:00PM
SESSION 210

Time	Paper #	Title/Authors
9:30AM		INFORMATION AND ELECTRICAL TECHNOLOGIES DIVISION POSTER SESSION - Sponsored by IET Moderator: Ning Wang, Oklahoma State Univ, Stillwater, OK LOCATION: GILLHAM HALL-SHERATON
9:30AM	26	Introduction 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)
27	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)
28	131687326	Soft Sensor Modeling for Marine Protease Fermentation Process of LS-SVM based on Bayesian Criteria Yonghong Huang, Jiangsu University, Zhenjiang, China (Y. Huang)
29	131620239	Application of Information Technology for Precision Agriculture Xiaoyong Liu, Xinjiang Agricultural University, Xinjiang, China (X. Liu, X. Li)
30	131621326	Research on Application of Wireless Detecting Networks in Aquaculture Xingqiao Liu, Jiangsu University, Zhenjiang, China (X. Liu)
31	131623779	Improving Potassium Fertilizer Management for Chinese Kale Bai-Ge Zhang, Ministry of Agriculture, Beijing, China (B. Zhang)
32	131625498	Relationship Among Relative Light Intensity, Fruit Yield and Quality in the Canopy of Luntaibaixing Liao Kang, Xinjiang Agricultural University, Xinjiang, China (L. Kang)
33	131620529	A real time monitoring system for crop live root measurement Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, Y. Ju)
34	131620542	Development of weighing lysimeter to measure potted crop water use Wenting Han, Northwest Agricultural and Forestry University, Yangling, China (W. Han, C. Zhang)

Tuesday, July 23 - 9:30AM-12:00PM
SESSION 211

Time	Paper #	Title/Authors
9:30AM		SPECTROSCOPY AND SPECTROSCOPIC SENSING - PART 2 - Sponsored by IET-348 Moderator: Kurt C. Lawrence, USDA ARS, Athens, GA LOCATION: EMPIRE B-SHERATON
9:35AM	131594540	Introduction Preliminary study of NIR model transfer in the determination of cotton trash components Yongliang Liu, USDA, ARS, Cotton Structure and Quality Research Unit, New Orleans, LA (Y. Liu, D. Thibodeaux)



Technical Sessions



9:50AM	131609095	Overview of non-invasive sensing technologies for detecting citrus diseases Sindhuja Sankaran, Citrus Research and Education Center/University of Florida, Lake Alfred, FL (S. Sankaran, R. Ehsani)
10:05AM	131596269	Monitor of apple tree growth status based on spectral technology Xiaolei Deng, China Agricultural University, Beijing, China (X. Deng, M. Li, L. Zheng, Y. Zhang)
10:20AM	131620113	Development of an in-situ optical detector to measure water turbidity and Chlorophyll content Qin Zhang, China Agricultural University, Beijing, China (Q. Zhang, L. Zheng, M. Li, Y. Zhang, H. Sun, Z. Zhong, X. Pei)
10:35AM		Break
10:45AM	131620020	Development of crop monitoring system using 2-channel CCD image sensor Hong Sun, China Agricultural University, Beijing, China (H. Sun, Q. Wu, M. Li, R. Zhao, L. Zheng)
11:00AM	131619840	Optical Crop Sensor Technology Applications to Soybean Production John Nowatzki, North Dakota State University, Fargo, ND (J. Nowatzki)
11:15AM	131620131	Removing the effect of soil moisture for soil TN prediction based on a portable soil sensor Xiaofei An, China Agricultural University, Beijing, China (X. An, M. Li, L. Zheng, Y. Liu, H. Sun)
11:30AM	131620105	Prediction of Water Chlorophyll-a Content Based on Multiscale Spectral Analysis Lihua Zheng, China Agricultural University, Beijing, China (L. Zheng, Y. Zhang, M. Li, H. Sun, Q. Zhang)

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

SESSION 212

MACHINE VISION FOR AGRICULTURAL AUTOMATION AND MANAGEMENT - Sponsored by IET-312, PM-58, IET-318
Moderator: Won Suk (Daniel) Lee, Univ of Florida, Gainesville, FL
LOCATION: EMPIRE C-SHERATON

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	131593729	Online Tracking of Laying Hens Using a Sensor Fusion Approach Akash D. Nakarmi, Iowa State University, Ames, IA PRESENTER: Lie Tang (A.D. Nakarmi, L. Tang, H. Xin)
9:50AM	131618571	Over-the-Row Machine Vision for Improved Apple Crop Load Estimation Aleana Gongal, Washington State University, Pullman, WA (A. Gongal, S. Amatya, M. Karkee)
10:05AM	131590327	A Sorting Method for Maize Haploid Based on Computer Vision Zhanyuan Wu, China Agricultural University, Beijing, China PRESENTER: Peng Song (Z. Wu, J. Zhang, P. Song, W. Li, Y. Lan)
10:20AM	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. Nichols, 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 Renfu Lu, USDA/ARS, East Lansing, MI (R. Lu, A. Mizushima)

11:15AM	131593914	Machine Vision and Mechanism Combination Techniques for Seedlings Quality Evaluation Based on Leaf Area Junhua Tong, Zhejiang University, Hangzhou, China (J. Tong, H. Jiang)
11:30AM	131600767	Application of Image Processing for Development of Economical Wool Fiber Thickness Measurement for Grading Igathinathane Cannayen, North Dakota State University, Fargo, ND (I. Cannayen, R. Redden, C. Schauer)
11:45AM	131593533	A new approach of multi-sensor image registration for onion quality inspection Weilin Wang, University of Georgia, Athens, GA (W. Wang, C. Li, R. Gitaitis, E.W. Tollner, G. Rains, M.A. Haidekker)
12:00PM	131591603	Detecting and counting citrus fruit on the ground using machine vision Daeun Choi, University of Florida, Gainesville, FL (D. Choi, W. Lee, R. Ehsani, A. Banerjee)

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

SESSION 213

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

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	131592907	Evaluating Agricultural Management Strategies In The Upper Chesapeake Bay Watershed Tamie L. Veith, USDA-ARS, University Park, PA (T.L. Veith, A. Rotz, A.D. McLean, J.M. Hamlett, J.S. Shortle)
9:50AM	131598918	An Aggregated Crop Yield Index to Explore Regional Potential Production Capacity Jonathan P. Resop, USDA-ARS, Beltsville, MD (J.P. Resop, D.H. Fleisher, D.J. Timlin, V.R. Reddy)
10:05AM	131619546	Detecting sour skin diseased onions using a customized gas sensor array Tharun kumar Konduru, University of Georgia, Athens, GA (T. Konduru, C. Li, G. Rains, R. Gitaitis)
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)

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

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		Introduction
9:35AM	131595052	Quantitative Evaluation of the Floral Shape Variation in Sinningia Speciosa Domestication Yan-Fu Kuo, National Taiwan University, Taipei, Taiwan (Y. Kuo, L. Weng, H. Hsu, T. Lin, C. Wang)
9:50AM	131620998	In-Situ Visualization and Quantitative Analysis of Internal Features of Single Wheat Kernels Using X-ray Micro Computed Tomography Suresh Neethirajan, University of Guelph, Guelph, ON, Canada (S. Neethirajan, A. Suresh)
10:05AM	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)



Technical Sessions



- 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
PRESENTER: Claudia Bahr (C.B. Romanini, C. Bahr, S. Viazzi, T. Van Hertem, A. Schlageter-Tello, I. Halachmi, K. Lokhorst, D. Berckmans)
Break
- 10:35AM 131620222 **An Application of Soft Sets in Weed Identification**
Pan Li, Northwest A&F University, Yangling, China (P. Li, D. He, Y. Qiao)
- 11:00AM 131620923 **Cytogenetic Analysis of Quinoa Using Nanoscale Imaging Techniques**
Suresh R. Neethirajan, University of Guelph, Guelph, ON, Canada (S.R. Neethirajan, Z. Zywqjay, C. Karunakaran)
- 11:15AM 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. Hooenboom)

Tuesday, July 23 - 9:30AM-12:15PM

SESSION 215

AIR QUALITY - MEASUREMENT AND MITIGATION OF POLLUTANTS FROM LIVESTOCK AND POULTRY HOUSING- PART 2 - Sponsored by SE-305, SE-405, SE-412
Moderator: Kenneth D. Casey, Texas A&M AgriLife Research, Amarillo, TX
LOCATION: CHOUTEAU B-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131619756 | 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 | 131620307 | Emission Inventory of Atmospheric Pollutants from a Combined Commercial Dairy Facility
Darius Mali, University of Guelph, Guelph, ON, Canada (D. Mali, B.J. Van Heyst) |
| 10:05AM | 131593447 | Mitigation of Ammonia, Hydrogen sulfide, and Greenhouse Gases Emissions from Naturally Ventilated Dairy Barns
H. S. Joo, Washington State University, Pullman, WA (H.S. Joo, P. Ndegwa, G. Neerackal, X. Wang, J. Harrison, J.S. Neibergs) |
| 10:20AM | 131590119 | Ventilation Rate Measurements and Gas Emissions from a Naturally Ventilated Barn for Dairy Cows
Ngwa M. Ngwabie, University of Guelph, Guelph, ON, Canada (N.M. Ngwabie, N.M. Ngwabie, A. VanderZaag, C. Wagner-Riddle) |
| 10:35AM | 131593425 | Emissions of Greenhouse Gases from Naturally Ventilated Freestall Dairy Barns
H. S. Joo, Washington State University, Pullman, WA (H.S. Joo, P. Ndegwa, A. Heber, J. Ni, W.W. Bogan, J.C. Ramirez-Dorronsoro, E. Cortus) |
| 10:50AM | | Break |
| 11:00AM | 131620703 | Effectiveness of an innovative air cleaning system for reducing ammonia, dust and odour emissions from swine barns
Bernardo Z. Predicala, Prairie Swine Centre Inc., Saskatoon, SK, Canada (B.Z. Predicala, A. Alvarado, M. Girard, M. Belzile, S. Lemay, J. Feddes) |
| 11:15AM | 131620275 | Assessment of Sprinkler Efficiency on Ammonia Removal in a Commercial Broiler Facility
David Wood, University of Guelph, Guelph, ON, Canada (D. Wood, B.J. Van Heyst) |
| 11:30AM | 131598251 | 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 216

ANIMAL RESPONSES AND ENVIRONMENTS -

Sponsored by SE-301
Moderator: John Stinn, Iowa State Univ., Ames, IA
LOCATION: PERSHING SOUTH-WESTIN

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131618005 | House-Level Moisture Production of Modern Swine by Age, Temperature and Source
Morgan Hayes, USDA_ARS_MARC, Clay Center, NE (M. Hayes, T.M. Brown-Brandl, J. Stinn, H. Li, H. Xin, J.A. Nienaber, T.A. Shepherd) |
| 9:50AM | 131608601 | Evaluation of Hot Weather Management Strategies for Pig Transport
Yijie Xiong, University of Illinois, Urbana, IL (Y. Xiong, A.R. Green, R. Gates, J. Su) |
| 10:05AM | 131618879 | Heat Production of Nursery and Growing Piglets
Tami M. Brown-Brandl, USDA-ARS-MARC, Clay Center, NE (T.M. Brown-Brandl, J.A. Nienaber, R. Eigenberg, H. Xin, M. Hayes) |
| 10:20AM | 131593200 | 3D Scanning Methodology to Measure Surface Area and Volume of Live Poultry
Trey Koury, Mississippi State University, Mississippi State, MS (T. Koury, J.D. Davis, J.L. Purswell) |
| 10:35AM | 131620737 | Effects of Air Velocity on Laying Hen Performance
Joseph L. Purswell, USDA-ARS, Mississippi State, MS (J.L. Purswell, S.L. Branton, B.D. Luck, J.D. Davis) |
| 10:50AM | | Break |
| 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) |
| 11:15AM | 131620248 | Evaluation of Handling Equipment Sound Pressure Levels as Stressors in Beef Cattle
Christina Lyvers, University of Kentucky, Lexington, KY (C. Lyvers, G. Day, E. Vanzant, D. Overhults) |
| 11:30AM | 131619073 | Evaluation of Hen Preference for Hexagon or Round Perches
Kai Liu, Iowa State University, Ames, IA (K. Liu, H. Xin, T.A. Shepherd, Y. Zhao, D. Zhao, K. Carlson) |
| 11:45AM | 131619449 | Behavior and production characteristics of female broilers under different yellow LED lighting intensities
Minsi 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 -

Sponsored by SE-20, SE-20/4, FPE-702
Moderator: Gregory D. Williams, Facility Engineering Services, PA, Springdale, AR
LOCATION: PERSHING NORTH-WESTIN

- | Time | Paper # | Title/Authors |
|--------|-----------|--|
| 9:30AM | | Introduction |
| 9:35AM | 131593991 | Discrete Element analysis of the discharge of biomass briquettes stored in bins
Francisco Ayuga, Universidad Politecnica de Madrid, Madrid, Spain (F. Ayuga, C. González-Montellano, E. Gallego, A. Ramirez, J. Fuentes) |
| 9:50AM | 131620757 | New Models for Describing Grain Packing
Sam G. McNeill, University of Kentucky, Princeton, KY (S.G. McNeill, M. Casada, M. Montross, S. Thompson, R.G. Maghirang, J.M. Boac, R. Bhadra) |



Technical Sessions



10:05AM	131596044	Code Requirements and Design Considerations for Biomass Size Reduction (Grinding) Systems Gregory D. Williams, Facility Engineering Services, PA, Springdale, AR (G.D. Williams, K.A. Rosentrater)
10:20AM	131595394	Experimental Study on the Loading Capacity of Bottom Net Used in Enriched Cage for Laying Breeder Hens Jie Yang, China Agricultural University, Beijing, China (J. Yang, T. Li, H. Li, H. Wang, B. Li)
10:35AM		Break
10:45AM	131596062	A proposed methodology for the determination of seismic loads on bins and silos from granular materials Gregory D. Williams, Facility Engineering Services, PA, Springdale, AR (G.D. Williams)
11:00AM	131619307	An Application of Innovative Isolated Device to Water Quality Improvement of Industrialized Turtle-breeding Wenbin Sun, Zhejiang University, Hangzhou, China (W. Sun, K. Xiang, H. Xu, P. Lei, S. Zhu, R. Zheng)
11:15AM	131620235	Reliability Analysis of the Sluice Gate by the Tidal Fluctuation Hyun-man Lee, Seoul National University., Rural System Engineering and Life Science, Seoul, Republic of Korea PRESENTER: Sun Kyo (H. Lee, K. Suh, L.J. Jae)

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		Introduction
9:35AM	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. Agyeman, 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 Digester 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 Jiyong 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 Yadanaparathi, University of Idaho, Twin Falls Research & Extension center, Twin Falls, ID (S. Yadanaparathi, 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 219		
INTEGRATING DESIGN & MEETING THE NEEDS FOR ERGONOMICS IN AGRICULTURE - Moderator: Dee Jepsen, Ohio State Univ, Columbus, OH LOCATION: PERSHING WEST-WESTIN		
Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	131590440	Development of a Computer-based ROPS Design Program Paul Ayers, University of Tennessee, Knoxville, TN (P. Ayers, J. Yantis, C. Bradley, G. Davis)
9:50AM	131620939	Selecting target populations for ROPS retrofit programs in Pennsylvania and Vermont Aaron M. Yoder, The Pennsylvania State University, University Park, PA (A.M. Yoder)
10:05AM	131604197	A Preliminary Evaluation of the Effects of Orchard Ladder Rung Spacing on Workers' Health and Safety Victor Duraj, University of California, Davis, Davis, CA (V. Duraj, F. Fathallah)
10:20AM	131612807	Applications for the Mobile Motion Capture System (MiMiC) Simeon Harbert, Ga Tech Research Institute, Atlanta, GA (S. Harbert, L. Harley, T. Jaiswal)
10:35AM		BREAK
10:45AM	131620445	Hand-Arm Vibration Measurements and Analysis Using Smartphones Ali B. Koc, University of Missouri, Columbia, MO (A.B. Koc, B. Liu)
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 221		
EMERGING TECHNOLOGIES IN FOOD PROCESSING: PART 2 - Moderator: Songming Zhu, Hangzhou, China LOCATION: PENN VALLEY-WESTIN		
Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	131619796	Effective Disinfection of Rough Rice Using Infrared Radiation Heating Ragab K. Gebreil, University of California and Suez Canal University, Davis, CA PRESENTER: Griffiths Atungulu (R.K. Gebreil, B. Wang, Z. Pan, G.G. Atungulu, H. Ma)
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
10:20AM	131595065	Effect of high pressure on inactivation of <i>Escherichia coli</i> 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)
10:45AM	131597288	The effect of soaking and high pressure processing on cooking properties of brown rice Yao Zhan, College of Biosystems Engineering & Food Science, Zhejiang University, Hangzhou, China (Y. Zhan, F. Hu, C. Wang, Y. Yu, J. He, S. Zhu)
11:00AM	131597649	Effect of high pressure treatment on colour degradation of fresh Chinese bayberry, fresh-cut yacon and carrot Feifei Hu, Zhejiang University, Hangzhou, China (F. Hu, Y. Lin, H. Zhang, C. Wang, Y. Zhan, Y. Yu, J. He, S. Zhu)
11:15AM	131632613	Cutting Component Development for a Lettuce Harvester Nang V. Nguyen, Shizuoka Prefectural Research Inst of Agr & Forestry, Shizuoka, Japan (N.V. Nguyen, S. Yamane)



Technical Sessions



Tuesday, July 23 - 9:30AM-12:00PM SESSION 222

Time	Paper #	Title/Authors
		ENERGY EFFICIENCY IN FOOD AND AGRICULTURAL PROCESSING - Sponsored by FPE-703 Moderator: Karunanithy Chinnadurai, University of Wisconsin-Stout, Menomonie, WI; Lamin S. Kassama, Alabama A&M Univ, Normal, AL; Karunanithy Chinnadurai, University of Wisconsin-Stout, Menomonie, WI LOCATION: CHICAGO A-SHERATON
		Introduction
9:30AM		
9:35AM	131592853	Energy use and energy efficiency of an on-farm rice-drying system Maria A. Billiris, University of Arkansas, Fayetteville, AR (M.A. Billiris, T.J. Siebenmorgen, G. Baltz)
9:50AM	131592966	Energy use and energy efficiency of a commercial cross-flow drying system Maria A. Billiris, University of Arkansas, Fayetteville, AR (M.A. Billiris, T.J. Siebenmorgen)
10:05AM	131616310	Comparative study on heating and cooling behaviors of sauce pans using thermal imaging Karunanithy Chinnadurai, University of Wisconsin-Stout, Menomonie, WI (K. Chinnadurai, K. Shafer, T. Zimmerman)
10:20AM		Break
10:30AM	131620055	Process and Energy Analysis of Coca Processing in Nigeria Simeon O. Jekayinfa, Ladoko Akintola University of Technology, Ogbomoso, Nigeria (S.O. Jekayinfa, B.A. Adejumo, G.I. Ogunsakin)
10:45AM	131620424	Smart Networked Sensing Systems in Agriculture: A Poultry Industry Focus Gerard Corkery, University of Limerick, Limerick, Ireland (G. Corkery)
11:00AM	131620496	Applications of Life Cycle Assessment to the Food System Dennis R. Heldman, The Ohio State University, Columbus, OH (D.R. Heldman)

Tuesday, July 23 - 9:30AM-12:00PM SESSION 223

Time	Paper #	Title/Authors
		FOOD AND BIOPRODUCTS MODELING - Sponsored by FPE-703 Moderator: Kasiviswanath Muthukumarappan, Brookings, SD LOCATION: ROANOKE-WESTIN
		Introduction
9:30AM		
9:35AM	131598331	Multiphysics Modeling of Microwave Heating of Food Undergoing Heat, Mass and Momentum Transport Jijia Chen, University of Nebraska-Lincoln, Lincoln, NE (J. Chen, S. Birla, K. Pitchai, J. Subbiah, D. Jones, R.R. Gonzalez)
9:50AM	131594511	Modeling Respiration Rate of Five Varieties of Sweetpotato (<i>Ipomoea batatas</i> (L) Lam) at Different Temperature Ranges by Applying the Mass Balance Principle Jose G. Garzon, North Carolina State University, Raleigh, NC (J.G. Garzon, M.D. Boyette)
10:05AM	131619617	Multiscale Modeling in Food Process Engineering: Opportunities and challenges Sohan Birla, University of Nebraska Lincoln, Lincoln, NE (S. Birla)
10:20AM		Break
10:30AM	131592861	Mathematical Modeling and Optimization of Clean-In-Place by Using Electrolyzed Oxidizing Water for A Pilot-Scale Milking System Ali Demirci, Pennsylvania State University, University Park, PA (A. Demirci, S.R. Dev, R.E. Graves, V.M. Puri)
10:45AM	131595869	Sorption Characteristics of Red Lentils as Affected by Postharvest Conditions Stefan Cenkowski, University of Manitoba, Winnipeg, MB, Canada (S. Cenkowski, M. Gervais)

Tuesday, July 23 - 9:30AM-12:00PM SESSION 224

Time	Paper #	Title/Authors
		POSTHARVEST PROCESSING AND FOOD SECURITY IN DEVELOPING COUNTRIES - Sponsored by FPE-702 Moderator: Klein E. Ileleji, Purdue University, West Lafayette, IN LOCATION: SHAWNEE-WESTIN
		Introduction
9:30AM		
9:35AM	131570965	Measurement of Combine Losses for Corn and Soybeans in Brazil Marvin R. Paulsen, University of Illinois, Urbana, IL (M.R. Paulsen, F. Pinto, D.G. de Sena, R. Zondonadi, S. Ruffato, A.G. Costa, V.A. Ragagnin, M. Danao)
9:50AM	131574215	Engineering Appropriate Technology for the Haitian Mango Industry Arthur A. Teixeira, University of Florida, Gainesville, FL (A.A. Teixeira)
10:05AM	131619395	Monitoring grain bed conditions during truck transportation of soybeans in Brazil Jonathan W. Olsen, University of Illinois, Urbana, IL (J.W. Olsen, C. Wilhelmi, D. Williams, J. Demarchi, R.S. Zondonadi, M. Danao, R. Gates)
10:20AM	131750342	Quality Changes in Hermetic Stored Corn at Immediate Moisture Levels Under Subtropical Conditions - Hermetic Bottles Versus Hermetic Bags Nda-Agyima Addae-Mensah, Purdue University, West Lafayette, IN (PRESENTER: Klein E. Ileleji (N. Addae-Mensah, K.E. Ileleji)

Tuesday, July 23 - 9:30AM-12:00PM SESSION 225

Poster #	Paper #	Title/Authors
		BIOLOGICAL ENGINEERING DIVISION POSTER SESSION - Moderator: Christan Whysong, Virginia Tech, Blacksburg, VA LOCATION: GILLHAM HALL-SHERATON
35	131594534	Fed-Batch Fermentation for Human Lysozyme Production by <i>Kluyveromyces lactis</i> K7 in Biofilm Reactors Duygu Ercan, Pennsylvania State University, University Park, PA (D. Ercan, A. Demirci)
36	131620794	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	131594972	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	131596418	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	131619876	Evaluation of Aqueous Enzymatic Oil Extraction after Germ Wet Milling Erin Ogle, Kansas State University, Manhattan, KS (E. Ogle, L.R. Wilken, T. Lohrmann, D. Hammes, Z. Nikolov)
40	131619050	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	131595023	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	131596190	Swine Wastewater Treatment Using Local Green Microalgal Strains Bo Zhang, North Carolina A&T State University, Greensboro, NC (B. Zhang, L. Wang)



Technical Sessions



- 43 131598113 **Biological lysis of microalgal cells**
Meng Wang, North Carolina State University, Raleigh, NC (M. Wang, W. Yuan)
- 44 131605806 **Investigation of Media Ingredients and Water Sources for Algae CO₂ Capture at Different Scales to Demonstrate the Correlations Between Lab-scale and Large-scale Growth**
Tabitha Graham, University of Kentucky, Lexington, KY (T. Graham, C. Crofcheck, A. Shea, M. Montross, M. Crocker, R. Andrews)
- 45 131619979 **Solvent Phase Algal Migration (S.P.A.M.) Process: A Technique for Dewatering Microalgae**
Seaborn B. Carter, Texas A&M University, College Station, TX (S.B. Carter)
- 46 131620527 **Modeling Flocculation, Sedimentation, and Filtration for Dewatering of Algal Biomass**
Nicholas A. Rhea, University of Kentucky, Lexington, KY (N.A. Rhea, C. Crofcheck, J. Groppo)
- 47 131620230 **Impedance Immunosensor with Disposable Printed Interdigitated Electrodes for Rapid Detection of E. coli O157:H7 in Foods**
Yanbin Li, University of Arkansas, Fayetteville, AR (Y. Li, R. Wang, Y. Fu)
- 48 131620511 **Xylitol Production in Aerated Free- and Immobilized-cell Systems**
Majid Soleimani, University of Saskatchewan, Saskatoon, SK, Canada (M. Soleimani, L.G. Tabil, S. Panigrahi)
- 49 131588509 **Accelerating Decomposition Rate of Fresh Faecal Materials from a Farrow-to-Finish Swine Farm with Black Soldier Fly Larvae (Hermetia illucens)**
Adewunmi Taiwo, Ladoko Akintola University of Technology, Ogbomoso, Nigeria (A. Taiwo, E.A. Otoo)
- 50 131591633 **Impact of Deficit Irrigation on Sorghum Physical and Chemical Properties and Ethanol Yield**
Donghai Wang, Kansas State University, Manhattan, KS (D. Wang, L. Liu, A. Maier, N. Klocke, S. Yan, D.H. Rogers, T. Tesso)
- 51 131594680 **Conceptual mass and energy balance for solar-powered fungal biodiesel refinery using lignocellulosic feedstock**
Michael J. Zanotti, Michigan State University, East Lansing, MI (M.J. Zanotti, Z. Ruan, Y. Liu, W. Liao)
- 52 131619474 **Pre-treatment and Utilization of low-value fibrous feedstocks for biosurfactant production**
Rajat Sharma, Iowa State University, Ames, IA (R. Sharma, B. Colonna, B. Lamsal)
- 53 131619125 **Ultrasonic Pretreatment of Energy Cane for Biofuel Production**
Niyaz Ahamed Methrath Liyakathali, Louisiana State University, Baton Rouge, LA (N. Methrath Liyakathali, D. Boldor)
- 54 131620835 **Syngas fermentation in monolithic biofilm reactor**
Yanwen Shen, Iowa State University, Ames, IA (Y. Shen, Z. Wen)
- 55 131587359 **Utilization of Alfalfa through integrated green biorefinery: Effects of fractionation processes on green juice extraction and quality**
Shuangning Xiu, NC A&T State Univ, Greensboro, NC (S. Xiu, A. Shahbazi)
- 56 131599189 **Development of a gene knockout system and the inactivation of butyrate kinase gene led to enhanced butanol production in Clostridium beijerinckii NCIMB 8052**
Yi Wang, University of Illinois at Urbana-Champaign, Urbana, IL (Y. Wang, H. Blaschek)
- 57 131668317 **Crude Glycerol Based Liquefaction of Lignocellulosic Biomass: Effects of Crude Glycerol Impurities on Polyol Properties**
Yebo Li, Ohio State Univ, Wooster, OH (Y. Li, S. Hu)

- 58 131620727 **Evaluating the effects of pasteurization temperature and duration of treatment on pathogen inactivation in separated liquid effluent of anaerobically digested dairy manure**
Elizabeth Collins, Virginia Tech, Blacksburg, VA (E. Collins, J. Arago, L. Krometis, S. Howes)
- 59 131668324 **Solid State Anaerobic Co-Digestion of Hay and Soybean Processing Waste in a Reactor with Leachate Recirculation**
Yebo Li, Ohio State Univ, Wooster, OH (Y. Li, J. Zhu)
- 60 131619717 **Assessing the impacts of climate change on the fate and transport of waterborne pathogens using watershed-scale modeling**
Rory Coffey, University College Dublin, Dublin, Ireland (R. Coffey, B. Benham, L. Krometis, M. Wolfe, E. Cummins)
- 61 131621882 **Nonisothermal Crystallization Behavior of Biocomposites from Poly(lactic acid) and Bamboo Fiber**
Shaoping Qian, college of biosystems engineering and food science, Hangzhou, China (S. Qian, M. Hailiang, S. Kuichuan, L. Yifan, J. Lu)

Tuesday, July 23 - 8:00AM-6:00PM
SESSION 226

8:00AM
8:15AM

9:45AM

1:30PM

4:00PM

Tuesday, July 23 - 9:30AM-12:00PM
SESSION 227

Time Paper #
9:30AM

BIOENERGY DAY - SPECIAL PROGRAMMING -

LOCATION: CENTURY BALLROOM A&B-WESTIN

Introduction and Overview of the Bioenergy Day

Keynote Speaker – Dr. Sonny Ramaswamy, Director, USDA-NIFA

Panel 1 - “Supply of High Tonnage Feedstock”

Moderator: Sam Tagore, US DOE

Panel 2 – “Critical Needs in Biorefining Research and Development”

Moderator: Ray Huhnke, Oklahoma State Univ

Poster Session – New Frontiers in Bioenergy

LOCATION: Gillham Hall-Sheraton

CAN ENGINEERS TEACH “SOFT SKILLS TO ENGINEERING STUDENTS - Sponsored by ED-203

Moderator: Paul R. Weckler, Oklahoma State University, Stillwater, OK

LOCATION: CHICAGO B-SHERATON

Title/Authors

Introduction

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

Tuesday, July 23 - 2:30PM-5:15PM
SESSION 228

Time Paper #
2:30PM
2:35PM

ADVANCES IN PESTICIDE APPLICATION - PART 2

- Sponsored by PM-23/6

Moderator: Harold Thistle, USDA Forest Service, Morgantown, WV

LOCATION: NORTHROP-SHERATON

Title/Authors

Introduction

Influence of travel speed on spray deposition uniformity from an air-assisted variable-rate sprayer

Hui Liu, The Ohio State University, Wooster, OH (H. Liu, H. Zhu, Y. Chen, Y. Shen, R. Zondag, E. Ozkan)



Technical Sessions



2:50PM	131619668	Unmanned Aircraft for Agricultural Spraying of Specialty Crops Durham K. Giles, Univ. of Calif. - Davis, Davis, CA (D.K. Giles, R.C. Billing)
3:05PM	131596061	Development and implementation of pulse width modulation for agricultural spray control Durham K. Giles, Univ. of California, Davis, Davis, CA (D.K. Giles)
3:20PM	131620700	Effect of nozzle type and mounting configuration around tree canopy on product coverage for Solid Set Canopy Delivery System Ajay Sharda, Washington State University, Prosser, WA (A. Sharda, M. Karkee, Q. Zhang, I. Ewlanow)
3:35PM		Break
3:45PM	131621722	The influence of crop protection products and adjuvants in tank mix spray solutions on spray droplet size Robert E. Wolf, Wolf Consulting & Research, Mahomet, IL (R.E. Wolf, S. Bretthauer, B.K. Fritz, G. Kruger, A. Hager)
4:00PM	131592743	Uniform deposition and stable dispersal of cooking oil-in-water emulsion for efficient physical pest control Samuel Gan-Mor, Institute of Agricultural Engineering, Bet Dagan, Israel (S. Gan-Mor, K. Ohaliv, B. Ronen)
4:15PM	131594784	Influence of droplet size and velocity on droplet impact process on waxy leaf Surfaces Heping Zhu, ATRU, Wooster, OH (H. Zhu, X. Dong, X. Yang)
4:30PM	131619426	Pesticide Formulation Considerations for Aerial Applications Kuide Qin, Dow Chemical, Indianapolis, IN (K. Qin, R. Cassell)
4:45PM	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 Adewunmi Taiwo, Ladoko Akintola University of Technology, Ogbomoso, Nigeria (A. Taiwo)

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		Introduction
2:35PM	131592053	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, Y. Zang, J. He, Y. Yan)
2:50PM	131595969	Development of an automatic control system based on GPS of aerial spraying with UAV Zhu Sun, NRIAM, Nanjing, China (Z. Sun, X. Xue, Y. Lan)
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	131605401	Quality Improvement of Grape Berry Detachment Using Air Jet Technology Saadat Kamgar, Shiraz University, Shiraz, Islamic Republic of Iran (S. Kamgar, M.S. Shobairi)
3:35PM	131618681	Low Altitude and Multiple Helicopter Formation in Precision Aerial Agriculture Zhigang Wang, USDA-ARS, College Station, TX PRESENTER: Yubin Lan (Z. Wang, Y. Lan, W.C. Hoffmann, Y. Wang, Y. Zheng)
3:50PM		Break
4:00PM	131596729	Detection and Comparison of spraying droplets distribution by laser sensor Yongjun Zheng, China Agricultural University, Beijing, China (Y. Zheng, Y. Lan, P. Wang, Z. Wang, P. Song, W.C. Hoffmann)

4:15PM	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)
4:30PM	131618416	Adjustable Multiple Terrain Agricultural Robot System Zhigang Wang, USDA-ARS, College Station, TX PRESENTER: Yubin Lan (Z. Wang, Y. Lan, W.C. Hoffmann, Y. Wang, P. Wang)
4:45PM	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)

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		Introduction
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. Grift, A. Hansen)
2:50PM	131591983	Energy Requirements for At-Harvest or On-Farm Size-Reduction of Biomass Kevin Shinnars, Univ. of Wisconsin, Madison, WI (K. Shinnars, J. Friede)
3:05PM	131538975	In-Field Performance of Round Balers Using DGPS Robert Grisso, Virginia Tech, Blacksburg, VA (R. Grisso, G. Moxley, E. Webb, J. Cundiff, S. Sokhansanj)
3:20PM	131591968	Improving the Drying Rate of Switchgrass Kevin Shinnars, Univ. of Wisconsin, Madison, WI (K. Shinnars, J. Friede)
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)
3:50PM		Break
4:00PM	131596571	Impact of Blade Angle on Miscanthus Harvesting Energy Requirement Justin Maughan, University of Illinois at Urbana-Champaign, Urbana, IL (J. Maughan, S. Mathanker, T. Grift, A. Hansen)
4:15PM	131618004	Technoeconomic Analysis of Single-Pass and Multi-Pass Corn Stover Bale Harvesting Systems Ajay Shah, Iowa State University, Ames, IA (A. Shah, M.J. Darr, K. Webster, B. Covington, L. Powell, K. Peyton)
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, Québec, QC, Canada (P. Savoie, P. Hébert, F. Robert)
5:00PM	131592212	Influence of Harvesting Technology on Biomass Feedstock Logistics Tao Lin, University of Illinois, Urbana, IL (T. Lin, S. Mathanker, Y. Shastri, Z. Miao, L.F. Rodriguez, A. Hansen, T. Grift, K. Ting)



Technical Sessions



Tuesday, July 23 - 2:30PM-4:05PM SESSION 231-A

Time	Paper #	Title/Authors
2:30PM		MACHINERY MANAGEMENT AND LOGISTICS - Sponsored by PM-43 LOCATION: BENTON B-SHERATON
2:35PM	131620879	Introduction Impact of Machine Working Width and Tractor Turning Radius on Field Efficiencies Santosh K. Pitta, The Ohio State University, Columbus, OH (S.K. Pitta, B.A. Schroeder, S. Shearer)
2:50PM	131596555	Assessment of Grain Harvesting System Productivity with the Aid of a Spreadsheet Tool Justin Maughan, University of Illinois at Urbana-Champaign, Urbana, IL (J. Maughan, A. Hansen)
3:05PM	131620419	Impact of GIS Data Density on Machine Productivity Analysis Levi J. Powell, Iowa State University, Ames, IA (L.J. Powell, M.J. Darr, B. Covington, K. Webster)
3:20PM		Break
3:20PM	131597281	Current situation and influencing factors of large and medium tractors' updating in China Xiufeng Lu, China Agricultural University, Beijing, China (X. Lu, Z. Zheng, B. Yang, Z. Gao, Z. Lou)
3:35PM	131595925	Comparison of Subsurface Pressure Created by Radial Agricultural Tires and Agricultural Tracks Benjamin R. Rethmel, Bridgestone Americas, Akron, OH (B.R. Rethmel, B.J. Harris)

Tuesday, July 23 - 4:05PM-5:10PM SESSION 231-B

Time	Paper #	Title/Authors
4:05PM		MANAGEMENT, IMPACT AND SUSTAINABILITY OF PRECISION AGRICULTURE - Sponsored by PM-54 Moderator: Edward Barnes LOCATION: BENTON B-SHERATON
4:10PM	131594057	Introduction Influence of Management Strategies on Sustainability of Row Crop Production using the Field to Market Fieldprint Calculator Lori A. Gibson, University of Tennessee, Knoxville, TN (L.A. Gibson, M. Buschermohle)
4:25PM	131619612	Impact of Precision Agriculture in Mitigation of Climate Change in Upper Midwest Ganesh C. Bora, North Dakota State University, Fargo, ND (G.C. Bora)
4:40PM	131620929	Deployment of Life Cycle Assessment (LCA) for Evaluation of CO2 and Energy in Relation to Tractors Size, and Fuel Type Brittany A. Schroeder, The Ohio State University, Columbus, OH (B.A. Schroeder, S.K. Pitta, S. Shearer)

Tuesday, July 23 - 2:30PM-5:00PM SESSION 232

Time	Paper #	Title/Authors
2:30PM		MODELING HYDROLOGY AND POLLUTANT TRANSPORT - PART 2 - Moderator: A. Pouyan Nejadhashemi, East Lansing, MI LOCATION: VAN HORN B-SHERATON
2:35PM	131619759	Introduction Incorporation of DRAINMOD into SWAT to simulate watersheds dominated by tile drained agricultural land Golmar Golmohammadi, McGill, Montreal, QC, Canada (G. Golmohammadi, S.O. Prasher, A. Madani, M. Youssef, R. Rudra)
2:50PM	131620374	Sensitivity of tile-drain catchment hydrology to tile and pothole parameterization Charles Ikenberry, Iowa State University, Ames, IA (C. Ikenberry, M.L. Soupir, M.J. Helmers, P.W. Gassman, C. Jones)

3:05PM	131594329	Quantifying relationships between agricultural management practices in the Maumee Watershed and coastal ecological endpoints in Western Lake Erie using SWAT Derek Schlea, LimnoTech, Inc., Ann Arbor, MI (D. Schlea, T. Redder, J. DePinto, P. Selvendiran)
3:20PM	131590648	Evaluate cotton production systems using EPIC Xiuying Wang, Blackland Research and Extension Center, Temple, TX (X. Wang, E. Steglich, E. Barnes, J. Williams, T. Gerik)
3:35PM		Break
3:45PM	131618643	The Development of an Integrated Modeling System for the U.S. Corn Belt Region Part 1: Description of Key Modeling Components Philip W. Gassman, Iowa State University, Ames, IA (P.W. Gassman, Y. Panagopoulos)
4:00PM	131594783	The Development of an Integrated Modeling System for the U.S. Corn Belt Region Part 2: Model Performance and Scenarios Evaluation Yiannis Panagopoulos, Iowa State University, Ames, IA (Y. Panagopoulos, P.W. Gassman, C.L. Kling, T. Cambell, M.K. Jha, R. Srinivasan, M. White, J.G. Arnold)
4:15PM	131618941	Integration of Energy Balance ET and SWATmf Models Jorge A. Guzman, ARS Grazinglands Research Laboratory, El Reno, OK (J.A. Guzman, P.H. Gowda, D.N. Moriasi, J.L. Steiner, P.J. Starks)

Tuesday, July 23 - 2:30PM-5:00PM SESSION 233

Time	Paper #	Title/Authors
2:30PM		ENVIRONMENTAL IMPACTS AND SUSTAINABILITY OF BIOENERGY PRODUCTION - Sponsored by SW-21 Moderator: Indrajeet Chaubey, Purdue University, West Lafayette, IN LOCATION: VAN HORN C-SHERATON
2:35PM	131589720	Introduction Stream Health Sensitivity to Landscape Changes due to Bioenergy Crops Expansion A. Pouyan Nejadhashemi, Michigan State University, East Lansing, MI (A. Nejadhashemi, M. Einheuser, S. Woznicki)
2:50PM	131596490	Hydrology and Water Quality Impacts of Loblolly Pine (Pinus taeda) and Switchgrass (Panicum virgatum) Intercropped Systems in Upland Southeastern Forested Watersheds Erin M. Bennett, North Carolina State University, Raleigh, NC (E.M. Bennett, F. Birgand, G. Chescheir, E. Allen, T. Appelboom)
3:05PM	131598107	Impact of Bioenergy Crops Expansion on Water Quality in Agricultural Regions of Indiana Suresh Sharma, Purdue University, West Lafayette, IN (S. Sharma, I. Chaubey, C. Raj)
3:20PM	131607488	Impacts of bioenergy crop production and climate change on water quality Hakkwan Kim, Mississippi State University, Starkville, MS (H. Kim, P.B. Parajuli)
3:35PM		Break
3:45PM	131618477	Applicability of growing energy crops as BMPs in filter strip areas Cibin Raj, Purdue University, West Lafayette, IN (C. Raj, I. Chaubey, S. K p, M. White, J.G. Arnold)
4:00PM	131619577	Hydrological/Water quality impacts of perennial crop production on marginal land Qingyu Feng, Purdue University, West Lafayette, IN (Q. Feng, I. Chaubey, Y. Her, X. Wang, C. Boles)
4:15PM	131620329	Water quality impacts of switchgrass and miscanthus production on marginal land Gurdeep Singh, University of Arkansas, Fayetteville, AR (G. Singh, D. Saraswat)



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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131605341	Estimation of the parameters that affect the formation and breakage of flocs formed in sediment runoff from construction sites Neha Bhadbhade, Oklahoma State University, Stillwater, OK (N. Bhadbhade, J.R. Vogel, D.E. Storm, B.J. Barfield)
2:50PM	131620629	The Use of Sweetgum Fruit (Liquidambar styraciflua) as an Effective Rill Erosion Control Treatment Sandy Mehlhorn, University of Tennessee at Martin, Martin, TN (S. Mehlhorn, E. Alquisreen)
3:05PM	131620698	Evaluation of check dam products using a newly developed testing protocol Carlos Bulnes Garcia, University of Illinois at Urbana-Champaign, Urbana, IL (C. Bulnes Garcia, P. Kalita, R. Bhattarai, J. Monical)

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131596692	Removal of soluble N and P from drainage water using an integrated denitrifying bioreactor and steel slag filter system Ehsan Ghane, Ohio State University, Columbus, OH (E. Ghane, N.R. Fausey, A. Drizo, R.A. Cooke, L.C. Brown)
2:50PM	131620915	BMP Optimization Tool for Conservation Planners Dharmendra Saraswat, University of Arkansas Division of Agriculture Cooperative Extension Service, Little Rock, AR (D. Saraswat, N. Pai)
3:05PM	131596073	Yield and Nitrate Leaching in a Rainfed Maize Crop Using Swine Manure and Mineral Fertilizer as Nitrogen Sources Denise F. Silva, University of Monsenhor Messias, Sete Lagoas, Brazil PRESENTER: Camilo de Andrade (D.F. Silva, C.T. Andrade, V. Resende, A. Garcia y Garcia, C.F. Rodrigues, T.C. Teixeira, T.A. Amaral, J.S. Paixão)
3:20PM	131609103	Swine Manure Rate, Timing, and Application Method Effects on Post-Harvest Soil Nutrients, Crop Yield, and Water Quality Implications in a Corn-Soybean Rotation David Webber, Iowa State University, Ames, IA (D. Webber, S. Ahmed, S. Mickelson, C. Pederson, J. Baker, R. Kanwar, J. Lorimor)
3:35PM		Break
3:45PM	131620687	Managing Manure Nitrogen for Protection of Groundwater Quality using an Interactive Soil Nitrogen Ledger Model Marsha C. Mathews, University of California Cooperative Extension, Modesto, CA (M.C. Mathews, J. Delgado, D.M. Crohn)
4:00PM	131587618	Narrow Grass Hedge Effects on Nutrient Loads Following Variable Swine Slurry Applications John Gilley, USDA-ARS, Lincoln, NE (J. Gilley)
4:15PM	131597821	Denitrification Bioreactor Nitrous Oxide Emissions under Fluctuating Flow Conditions Laura Christianson, Unaffiliated, College Park, MD (L. Christianson, J. Hanly, N. Jha, S. Saggarr, M. Hedley)

4:30PM 131590586 **Determination of soil nitrogen and organic carbon from near infrared reflectance with variable selection**
Shengyao Jia, Zhejiang University, Hangzhou, China (S. Jia, X. Yang, J. Zhang, G. Li)

Tuesday, July 23 - 2:30PM-5:00PM
SESSION 236

GEOMORPHOLOGY, STREAMBANK STABILITY, AND IN-STREAM PROCESSES - Sponsored by SW-25, SW-252, SW-22, SW-224
Moderator: Carmen T. Agouridis, University of Kentucky, Lexington, KY
LOCATION: EMPIRE C-SHERATON

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131620552	Evaluation of the Conservational Channel Evolution and Pollutant Transport System (CONCEPTS) Applied to Composite Streambanks in the Ozark Highlands Ecoregion Erin Daly, Oklahoma State University, Stillwater, OK (E. Daly, D.E. Storm, G.A. Fox, E.J. Langendoen)
2:50PM	131620802	Streambank Restoration Lessons Learned in Napa County, CA Carolyn M. Jones, PE, USDA NRCS CA, Dixon, CA, CA (C.M. Jones, PE)
3:05PM	131607743	Use of Sediment Fingerprinting Technique to Identify Provenance of Suspended Sediments Jasmeet Lamba, UW-Madison, Madison, WI (J. Lamba, A. Thompson, K. Karthikeyan, J. Panuska)
3:20PM		Break
3:30PM	131620973	Flume Experiments to Determine the Erodibility of Gravel Streambank Soils David T. Criswell, Oklahoma State University, Stillwater, OK (D.T. Criswell, G.A. Fox, A. Al-Madhhachi, R. Miller, E. Daly)
3:45PM	131596591	Sediment and Phosphorus Loading from Protected and Unprotected Streambanks in Eastern Oklahoma Garey A. Fox, Oklahoma State University, Stillwater, OK (G.A. Fox, R. Miller, S. Lovern, C. Penn)
4:00PM	131617791	Predicting site-specific daily streambank erosion using GPS-based watershed scale video mapping and EPA BANCS Kelsey Hensley, University of Tennessee, Knoxville, TN (K. Hensley, P. Ayers, K. Swinson, B. Connell)

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131594348	Comparison of Sprinkler Droplet Size and Velocity Measurements using a Laser Precipitation Meter and Photographic Method Bradley A. King, USDA ARS, Kimberly, ID (B.A. King, T.W. Winward, D. Bjorneberg)
2:50PM	131593508	Wireless Sensor Network for Irrigation Scheduling Ruixiu Sui, USDA-ARS, Stoneville, MS (R. Sui, J. Baggard, D.K. Fisher)
3:05PM	131596337	Economical Design of Solid-Set Irrigation Systems Based on The Allowable Head Loss Concept Hossein Sadeghi, Washington State University, email: s.hossein.sadeghi@wsu.edu, pullman, WA (H. Sadeghi, M. Gheysari, T. Peters)
3:20PM		Break
3:30PM	131594356	Calculating Friction Loss for Column Pipe When a Line Shaft is Present Joe Henggeler, University of Missouri, Portageville, MO PRESENTER: A. Thompson (J. Henggeler, A. Thompson)
3:45PM	131619572	Applying Data from the Nebraska Tractor Test Laboratory to Predict Industrial Diesel Engine Jake K. Keller, University of Nebraska, Lincoln, NE (J.K. Keller, W. Kranz, R.M. Hoy, D.L. Martin)



Technical Sessions



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		Introduction
2:35PM	131610718	Thriving in a Drought with Subsurface Drip Irrigation (SDI) Inge Bisconer, Toro Micro-Irrigation, El Cajon, CA (I. Bisconer)
2:50PM	131593324	Effect of Nitrogen Management on Severely Deficit Subsurface Drip-Irrigated Corn Freddie R. Lamm, Kansas State University, Colby, KS (F.R. Lamm, A. Schlegel)
3:05PM	131593348	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)
3:20PM	131594671	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)

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 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

Tuesday, July 23 - 2:30PM-5:00PM
SESSION 240

HYPERSPECTRAL IMAGING APPLICATIONS - PART 2 - BIO-PROPERTY

- Sponsored by IET-348
Moderator: Seung Chul Yoon, US Department of Agriculture, Agricultural Research Service, Athens, GA
LOCATION: PERSHING SOUTH-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131596111	Detection of apple bruises caused by picking with the manipulator based on hyperspectral images Xiaolei Deng, Washington State University, Prosser, WA (X. Deng, Q. Zhang, M. Li, L. He, J. Zhou)
2:50PM	131594603	Multispectral detection of Salmonella serotypes Enteritidis and Typhimurium colonies on agar plates from hyperspectral image analysis Seung Chul Yoon, USDA, ARS, Athens, GA (S. Yoon, Y. Seo, B. Park, A. Hinton, W. Windham, K.C. Lawrence)
3:05PM	131595381	Nondestructive determination of the soluble solid content for tomato using hyperspectral diffuse transmittance imaging Ruoyu Zhang, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (R. Zhang, Y. Ying, X. Rao, Y. Gao, D. Hu)
3:20PM	131597646	Discrimination of Tomato Yellow Leaf Curl Disease using Hyperspectral Imaging Jinzhui Lu, Zhejiang University, Hangzhou, China (J. Lu, D. Cui, H. Jiang)
3:35PM		Break
3:45PM	131611459	Hyperspectral Microscope Image Analysis for Detecting Foodborne Pathogenic Bacteria from Chicken Rinse Bosoon Park, USDA, ARS, Athens, GA (B. Park, Y. Seo, S. Yoon, W. Windham, K.C. Lawrence, A. Hinton)
4:00PM	131620975	Determination of soluble solids content in apple using hyperspectral imaging and variable selection algorithms Liping Chen, National Eng Res Cen of Intelligent Equip for Agri, Beijing, China (L. Chen, W. Huang, J. Li)
4:15PM	131618130	Prediction of Moisture content in Maize leaves based on Hyperspectral Image Yu Sun, Northwest A&F University, Yangling, China PRESENTER: Jifeng Ning (Y. Sun, W. Han, J. Ning, D. Wu)
4:30PM	131618868	Prediction of Nitrogen content in maize leaves based on NIR spectroscopy Wenting Han, Northwest A&F University, Yangling, China (W. Han, Y. Sun, D. Wu, J. Ning)

Tuesday, July 23 - 2:30PM-5:55PM
SESSION 241

AGRICULTURAL APPLICATIONS OF WIRELESS NETWORKS

- Sponsored by IET-254, IET-353
Moderator: Joseph Dvorak, University of Kentucky, Lexington, KY
LOCATION: PERSHING NORTH-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131597088	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 and F University, Yangling, China PRESENTER: Yi Wang (W. Han, Y. Wang, S.K. Ooi, C. Guo)
2:50PM	131618787	2.4GHz Radio Propagation Characteristics During Various Corn Growth Stages Haixia Li, Oklahoma State University, Stillwater, OK PRESENTER: Ning Wang (H. Li, N. Wang)
3:05PM	131597340	Mobile Short Message Remote Control for Automatic Irrigation System Zhengying Wei, Xi'an Jiaotong University, Xi'an, China (Z. Wei, Z. Huo, M. Zhang, B. Li, Y. Tang)
3:20PM	131620557	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



3:35PM	131620069	Development of a smart greenhouse monitoring system based on WSN, 3G and PLC technologies Lihua Zheng, China Agricultural University, Beijing, China (L. Zheng, M. Li, H. Sun, X. Deng, Z. Zhong, W. Yang)
3:50PM		Break
4:00PM	131593674	Development of Middleware Layer Supporting Open Geospatial Consortium Sensor Observation Service on Simple Weather Station JoonYong Kim, Seoul National University, Seoul, Republic of Korea (J. Kim, C. Lee, T. Kwon, G. Park, J. Rhee)
4:15PM	131620547	Development and Evaluation of A Wireless Sensor Network Monitoring System in Various Agricultural Environments Jinghui Xu, Northwest Agricultural and Forestry University, Yangling, China (J. Xu, W. Han, B. Zhu, N. Wang)
4:30PM	131620559	Investigation of Bluetooth Communications for Low-power Embedded Sensor Networks in Agriculture Andrew Balmos, Purdue University, West Lafayette, IN (A. Balmos, A. Layton, A. Ault, J. Krogmeier, D.R. Buckmaster)
4:45PM	131620436	Soil Compaction Measurements with Smartphones (Poster) Bo Liu, University of Missouri, Columbia, MO (B. Liu, A.B. Koc)
5:00PM	131592218	Design of wireless sensor network node for greenhouse information acquisition Ying Zang, South China Agricultural University, Guangzhou, China (Y. Zang, X. Li, X. Cao, M. Yan)
5:15PM	131620040	A remote monitoring system of automatic soil sampler based on WSN Wei Yang, China Agricultural University, Beijing, China (W. Yang, M. Li, L. Zheng, H. Sun, X. Li, M. Zhan)

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

SESSION 242

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131593521	Three-Dimensional Reconstruction of a Dormant Tree Using RGB-D Cameras Qi Wang, Caterpillar Inc, Pittsburgh, PA (Q. Wang, Q. Zhang)
2:50PM	131594020	Automated Sensing and Control of Hydroponic Macronutrients Using a Computer-controlled System Dae hyun Jung, Seoul National University, Seoul, Republic of Korea (D. Jung, H. Kim)
3:05PM	131615960	Development of the Second Generation of the Berry Impact Recording Device Rui Xu, University of Georgia, Athens, GA (R. Xu, C. Li)
3:20PM	131620302	Framework for Distributed Control of a Fleet of Agricultural Field Robots Joseph Dvorak, University of Kentucky, Lexington, KY (J. Dvorak)
3:35PM		Break
3:45PM	131620400	Utilization of sensor technology for evaluating operator test weight methods in determining quality of grains and commodities Jason Jordan, USDA GIPSA, Kansas City, MO (J. Jordan, Z. Gillay, D.B. Funk)
4:00PM	131620548	Robust Navigation Control of an Autonomous Agricultural Robotic Vehicle Xuyong Tu, Cobb-Vantress Inc., Siloam Springs, AR (X. Tu, L. Tang)
4:15PM	131593740	Optimal Design of Combine Harvester Multiple Target Control Model Xin Wang, China Agricultural University, Beijing, China (X. Wang)

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

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131619989	Effects of Configuration and Headspace Wind Profile on the Performances of Flux Chambers in Gas Emission Measurement: A Laboratory Study Zhihui Yan, China Agricultural University, Beijing, China (Z. Yan, L. Ding, C. Wang, Q. Lu, Z. Shi)
2:50PM	131595974	Quantification of Air Exchange Rate and Temperature Effects on Gaseous Emissions from Swine Manure Measured Using a Dynamic Flux Chamber Sarah Johnson, Iowa State University, Ames, IA (S. Johnson, H. Xin, J.P. Stinn)
3:05PM	131593443	Effects of Anaerobic Digestion and Application Methods on Ammonia Emission from Land Applied Dairy Manure Xiang Wang, Washington State University, Pullman, WA (X. Wang, H. Joo, G. Neerackal, P. Ndegwa, J. Harrison, A. Heber, J. Ni)
3:20PM	131593586	Impacts of Anaerobic Digestion and Solids Separation on Ammonia Emissions from Stored Dairy Manure George Mathew Neerackal, Washington State University, Pullman, WA (G. Neerackal, H. Joo, X. Wang, P. Ndegwa, J. Harrison, A. Heber, J. Ni)
3:35PM	131620458	Case Study: Occasional excessive ammonia emissions following dairy manure application to land: causes, impacts, and management recommendations Seungo Kim, Clarkson university, Potsdam, NY (S. Kim, M. Jahne, S. Rogers, S. Grimberg, T. Holsen)
3:50PM		Break
4:00PM	131621205	Pilot-Scale Field Study for Ammonia Removal from Lagoon Biogas Using a Wet Sulfuric Acid Wet Scrubber Hongjian Lin, University of Minnesota, St Paul, MN (H. Lin, X. Wu, C. Miller, J. Zhu, L.S. Hadlocon, R. Manuzon, L. Zhao)
4:15PM	131593820	Comparison of a biofilter and a biotrickling filter in the removal of n-butyrac acid Ying Ding, Hangzhou Normal University, Hangzhou, China (Y. Ding)
4:30PM	131620712	Characterization of Acid Wet Scrubber Effluents as Fertilizer Lara Jane S. Hadlocon, The Ohio State University, Columbus, OH (L.S. Hadlocon, L. Zhao)

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131671270	Swine Welfare: The Integration of Various Perspectives Sherrie Niekamp, National Pork Board, Clive, IA (S. Niekamp)
3:15PM	131671272	Conversion to Group Housing for Sows: Integrator's Perceptive Steve Pollmann, Murphy-Brown LLC, Ames, IA (S. Pollmann)
3:55PM		Question and Answer Period
4:15PM	131594308	A review of sow housing and its implications for gestating sows Jeremy Brue, Iowa State University, Ames, IA (J. Brue, D. Schau, K.A. Rosentrater)



Technical Sessions



4:40PM 131609277 **Geostatistical 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)

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

SESSION 245

INNOVATIVE SYSTEMS AND RESOURCE SAVING STRATEGIES IN CONTROLLED ENVIRONMENTS -
Sponsored by SE-303
Moderator: Timothy J. Shelford, Cornell Univ, Ithaca, NY
LOCATION: ROANOKE-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	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)
2:50PM	131620043	System Dynamics of an Off-Grid Greenhouse Polly Juang, University of Arizona, Tucson, AZ (P. Juang, M. Kacira)
3:05PM	131595447	Contrast experiments of cooling effect of combined measures on summer greenhouse in subtropical regions Yanhua Liu, College of Engineering, South China Agricultural University, Guangzhou, China (Y. Liu)
3:20PM		Break
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)
3:45PM	131596429	Natural Ventilated Augment Cooling (NVAC) Greenhouse Lucas McCartney, McGill University, Montreal, QC, Canada (L. McCartney, M. Lefrud)

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

SESSION 246

FOOD AND PROCESS ENGINEERING DIVISION POSTER SESSION -
Moderator: Michael O. Ngadi, McGill University, Ste-Anne-de-Bellevue, QC, Canada
LOCATION: GILLHAM HALL

Poster #	Paper #	Title/Authors
1	131589451	The Optimum Operation Conditions of a GABA Tea Powder Extrudate Jinchyau Peng, National Chung-Hsing University, Taichung, Taiwan (J. Peng, H. Tang, F. Hong)
2	131589485	Effects of fermentation time and seasons on the Á-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)
3	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. Lui)
4	131592893	Optimization of Clean-In-Place (CIP) Process for Cleaning Pipelines in a Farm Milking System Using Finite Element Modeling and Simulation of a Turbulent Multiphase Flow System Ali Demirci, Pennsylvania State University, University Park, PA (A. Demirci, S.R. Dev, V.M. Puri, R.E. Graves)
5	131594229	Mechanisms of Deposit Removal from Milking System Materials during Cleaning with Electrolyzed Oxidizing Water Xinmiao Wang, Pennsylvania State University, University Park, PA (X. Wang, A. Demirci, V.M. Puri, R.E. Graves)

6	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)
7	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)
8	131596079	Measurement and Documentation of Grain Loss during Harvest, Transportation and Storage in Brazil Christopher Wilhelmi, University of Illinois at Urbana-Champaign, Urbana, IL (C. Wilhelmi, J.W. Olsen, D. Williams, M. Danao, R. Gates, M.R. Paulsen, D.M. de Queiroz, F. Pinto, R.M. Nogueira, S. Ruffato, R. Zondonadi, D.G. de Sena)
9	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)
10	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)
11	131598448	Analysis of Differently Roasted Arabica Coffee Samples by Electronic Tongue Zoltán Kovács, Corvinus University of Budapest, Budapest, Hungary (Z. Kovács, E. Várvolgyi, D.L. Dénes, D. Szollosi, A. Fekete)
12	131616355	Extruded protein for the developing world: an initial techno-economic analysis and life cycle assessment Shaowei Ding, Iowa State University, Ames, IA (S. Ding, B. Kim, E. Schmidt, M. Hotzman, K.A. Rosentrater)
13	131618387	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)
14	131618425	Coarse Grinding of Corn Stover for Animal Feed on a Commercial Scale Lester Pordesimo, ADM Alliance Nutrition, Inc., Quincy, IL (L. Pordesimo, C. Nisbet, J. Klein, D. Holzgraefe)
15	131619035	Evaluation of dockage on the compressibility of hard red winter wheat to support new grain packing factors Mike Montross, University of Kentucky, Lexington, KY (M. Montross, J.M. Boac, R. Bhadra, R. Maghirang, S. McNeill, M.E. Casada, S. Thompson)
16	131619051	Detection of Sucrose Content of Sugar Beet by Visible/near-infrared Spectroscopy Leiqing Pan, Nanjing Agricultural University, Nanjing, China (L. Pan, R. Lu, J.M. McGrath)
17	131619422	The Effect of Glucose on Electronic Taste Analyzer Andras Fekete, Corvinus University of Budapest, Budapest, Hungary (A. Fekete, D. Szollosi, Z. Kovács, E. Várvolgyi)
18	131619515	Low-Moisture Anhydrous Ammonia (LMAA) Pretreatment of Corn Distillers Dried Grains with Solubles (DDGS) Weitao Zhang, Iowa State University, Ames, IA (W. Zhang, M. Yang, K.A. Rosentrater)
19	131619521	Low-Moisture Anhydrous Ammonia (LMAA) Pretreatment of Corn Stover Minliang Yang, Iowa State University, Ames, IA (M. Yang, W. Zhang, K.A. Rosentrater)
20	131619539	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 Pessani, Oklahoma State University, Stillwater, OK (N. Pessani, D. Bellmer, H.K. Atiyeh, G. Kakani)	37	131593409	Reducing Post-Harvest Grain Losses for Subsistence Farmers Floyd Dowell, USDA ARS CGAHR, Manhattan, KS (F. Dowell)
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-Medellin)	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. Cen, R. Lu, F.A. Mendoza)
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)	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)
24	131620149	Biomass Pretreatment using Fenton's Reaction Carla Rodrigues, University of Kentucky, Lexington, KY (C. Rodrigues, M. Montross, S. Nokes, B. Lynn)	40	131586888	An Imaging System for Predicting Meat Yield of the Pig based on Optical Vision Technology Jingjing Chen, China Agricultural University, Beijing, China PRESENTER: Yankun Peng (J. Chen, Y. Peng)
25	131620198	Field Measurement of Packing in Stored Grain Aaron Turner, University of Kentucky, Lexington, KY (A. Turner, C. Rodrigues, D. Schiavone, J. Jackson, M. Montross, S. McNeill, J.M. Boac, R. Bhadra, S. Thompson, M.E. Casada, R. Maghirang)	41	131586960	A Portable System for Prediction of Pork Freshness using Multispectral Imaging Technology Cuiling Li, China Agricultural University, Beijing, China (C. Li, Y. Peng, X. Tang)
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)	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)
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)	43	131585729	Flow Behavior of Wheat with Impurities Qi Bian, Kansas State University, Manhattan, KS (Q. Bian, K. Ambrose)
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)	44	131673921	Effect of Acid Hydrolysis on Functional Properties of Starch Isolate from Banana (<i>Musa paradisiaca</i>) Bhavni Dhillon, Guru Nanak Dev University, Amritsar, India (B. Dhillon, N.S. Sodhi, M. Yadav, N. Singh)
29	131620893	Automatic Inspection System for Processing Tomatoes David C. Slaughter, University of California, Davis, Davis, CA (D.C. Slaughter, J. Isaacs, M. Leocadio, H. Chang, T. Anderson, D. Ng, E. Orgon)	45	131580866	Thermal Transition Characteristics of Crude Palm Oil Joseph S. Alakali, University of Agriculture, Makurdi, Makurdi, Nigeria (J.S. Alakali, M.O. Ngadi, S.O. Eze)
30	131621248	Effects of biological pretreatment on pyrolysis behaviors of corn stalk by TG-FTIR technique Tipeng Wang, North China Electricity Power University, Beijing, China (T. Wang, Z. Mao)	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)
31	131668445	Hydration Characteristics of Different Varieties of Paddy Rice from West Africa Chijioke K. Ejebe, McGill University, Montreal, QC, Canada (C.K. Ejebe, M.O. Ngadi)	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)
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)	48	131591346	Air impingement drying characteristics and model of Chinese jujube Zheng Lou, China Agricultural University, Beijing, China (Z. Lou, H. Xiao, Z. Gao)
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. Liu, M. Smith, C. Frear)	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)
34	131618714	The Selective Removal of H₂S over CO₂ from Biogas in a Bubble Column Using Pretreated Digester Effluent Craig Frear, Washington State University, Pullman, WA (C. Frear, N. Kennedy, Q. Zhao)	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)
35	131620804	Effect of pH and media composition on CO₂ and H₂ fermentation using <i>Clostridium carboxidivorans</i> Mark R. Wilkins, Oklahoma State University, Stillwater, OK (M.R. Wilkins, X. Zhu, H.K. Atiyeh, R.S. Lewis, R.L. Huhnke)	51	131595768	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)
36	131619931	A Preliminary Study of Helmholtz Resonator for Measurement of Watermelon Volume Huarui Chen, Zhejiang University, Hangzhou, China (H. Chen, H. Xu, X. Rao, N. Kondo, J. Bao)	52	131590805	Characterization of beta cyclodextrin inclusion complexes of thymol and thyme 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: Litha Sivanandan, West Virginia University, Morgantown, WV; Oliver K. Schluter, Leibniz Institute for Agricultural Eng, Potsdam, Germany
LOCATION: SHAWNEE-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131574232	Impact on Small Food Processors of New FDA Guidelines on Acidified Foods Arthur A. Teixeira, University of Florida, Gainesville, FL (A.A. Teixeira)
2:50PM	131592785	Disinfection of Synthetic Municipal Wastewater Effluent by Pulsed UV-Light Treatment Gulsad Uslu, Firat University, Elazig, Turkey (G. Uslu, A. Demirci, J.M. Regan)
3:05PM	131594214	Evaluation of Electrolyzed Oxidizing Water for Cleaning-In-Place of On-Farm Milking Systems Xinmiao Wang, Pennsylvania State University, University Park, PA (X. Wang, S.R. Dev, A. Demirci, R.E. Graves, V.M. Puri)
3:20PM	131620817	Innovative concepts to inactivate microorganisms related to herbs and spices Oliver Schlueter, Leibniz Institute for Agricultural Engineering Potsdam-Bornim, Potsdam, Germany (O. Schlueter, K. Reineke, B. Erdogdu, J. Ehlbeck, A. Fröhling)

Tuesday, July 23 - 2:30PM-5:00PM
SESSION 248

PHYSICAL PROPERTIES OF BIOMASS FOR PROCESSING AND SAFETY - Sponsored by FPE-701, FPE-709, T-11
Moderator: Lope G. Tabil, Univ of Saskatchewan, Saskatoon, SK, Canada
LOCATION: MISSION-WESTIN

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131593002	Ground Biomass Sieveless Particle Size Distribution using Machine Vision Approach Ighathinathane Cannayen, North Dakota State University, Fargo, ND (I. Cannayen, M. Yu, J. Hendrickson, K. Nichols, D. Archer, S. Kronberg, M. Liebig)
2:50PM	131592240	Effect of Processing Conditions on Yield of Screw Press Expressed Palm Oil John O. Olajide, Ladoko Akintola university of Technology, Ogbomoso, Nigeria (J.O. Olajide, O.A. Adetola, A.P. Olalusi)
3:05PM	131595387	Effect Prediction Model and Process Optimization of the Cooling Processing of Pellet Feed Jie Yang, China Agricultural University, Beijing, China (J. Yang, H. Wang)
3:20PM	131591985	Thermal properties of big bluestem as affected by ecotype and planting location along the precipitation gradient of the Great Plains Ke Zhang, Kansas State University, Manhattan, KS (K. Zhang, L. Johnson, R. Nelson, W. Yuan, Z. Pei, D. Wang)
3:35PM		Break
3:45PM	131612368	Effect of Moisture on Particle Size and Energy Consumption During Preprocessing Neal A. Yancey, Idaho National Laboratory, Idaho Falls, ID (N.A. Yancey, C.T. Wright, J.S. Tumuluru)
4:00PM	131619433	Hydraulic Conductivity of Baled Biomass Drew Schiavone, University of Kentucky, Lexington, KY (D. Schiavone, M. Montross, W. Adams)
4:15PM	131620406	An empirical model to predict infield thin layer drying rate of cut switchgrass Amit Khanchi, Oklahoma State University, Stillwater, OK (A. Khanchi, C. Jones, R.L. Huhnke)
4:30PM	131620076	Research on Mechanics Models of Alfalfa Stem Lei Guo, China Agricultural University, Beijing, China (L. Guo, D. Lu, D. Wang, G. Wang)

4:45PM 131580735 **Friction Coefficients of Alfalfa Grind as affected by Particle Size and Moisture Content**
Lei Guo, China Agricultural University, Beijing, China (L. Guo, D. Lu, Y. You, D. Wang, G. Wang)

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

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	131589200	In situ Conversion of Microalgal Lipids for Biodiesel Synthesis Zheting Bi, University of Idaho, Moscow, ID (Z. Bi)
2:50PM	131594752	Membrane Filtration of Bluegreen Algae by Flocculation. M.Ramanathan, Z.Gu, K. Muthukumarappan. Agricultural and Biosystems Engineering, South Dakota State University, Brookings SD 57007 Muthu Ramanathan, South Dakota State University, Brookings, SD (M. Ramanathan, Z. Gu, K. Muthukumarappan)
3:05PM	131598145	Growth Kinetics of Microalgae on Swine Wastewater Rifat Hasan, North Carolina A & T State University, Greensboro, NC (R. Hasan, B. Zhang, L. Wang)
3:20PM	131619775	Assessment of Converting Waste-fed Algae into Biocrude Oil via Hydrothermal Liquefaction: Product Distribution, Composition and Characterization Wan-ting Chen, University of Illinois at Urbana-Champaign, Urbana, IL (W. Chen, Y. Zhang, J. Zhang, P. Zhang)
3:35PM		Break
3:45PM	131620238	An investigation into the efficacy of ozone for inactivation of microalgae cells in photobioreactors Rachel Clarke, University College Dublin, Dublin, Ireland PRESENTER: Tom Curran (R. Clarke, P. Solan, B. Tiwari, C. O'Donnell, T.P. Curran)
4:00PM	131619732	Cultivation of Nannochloropsis Salina in Diluted Anaerobic Digester Effluent under Simulated Seasonal Climatic Conditions and in Open Raceway Ponds Johnathon Sheets, Ohio Agricultural Research and Development Center/The Ohio State University, Wooster, OH (J. Sheets, Y. Li)
4:15PM	131590220	A Bench-scale study of biomass production by Chlorella pyrenoidosa cultivated in anaerobic poultry waste effluent Yu Wu, China Agricultural University, Beijing, China (Y. Wu, W. Cao, M. Wang, B. Li, Y. Zhang)

Tuesday, July 23 - 2:30PM-5:00PM
SESSION 250

NON-DESTRUCTIVE TEXTURE EVALUATION OF HORTICULTURAL PRODUCTS - FPE-701
Moderator: Itzhak E. Shmulevich, Technion, Haifa, Israel
LOCATION: CHICAGO A-SHERATON
Target Audience: Discussion of the new standard proposal on "Non-Destructive Texture Evaluation of Horticultural Products"



Technical Sessions



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

1:30PM

BIOENERGY DAY - SPECIAL PROGRAMMING
Moderator: Ray Huhnke, Oklahoma State University
PANEL 2 - Critical Needs in Biorefining Research and Development
LOCATION: CENTURY BALLROOM A&B-WESTIN

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. Schmidt)
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. Heitkampfer, 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. Roa-Espinosa, T. Runge, J. Markley)
61	131594523	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. Muthukumarappan)
64	131618066	Effects of torrefaction and densification on quality of syngas 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)
66	131615765	Proximate and ultimate compositional changes in switch grass during torrefaction Jaya Shankar Tumuluru, Idaho National Laboratory, Idaho Falls, ID (J. Tumuluru, T. Kremer, C.T. Wright, N.A. Yancey)
67	131599122	Thermal behavior and kinetic study for woody torrefied biomass pyrolysis by TGA Shoujie Ren, Washington State University, Richland, WA PRESENTER: Hanwu Lei (S. Ren, H. Lei, L. Wang, Q. Bu, Y. Wei, L. Zhu, Y. Liu, J. Liang, S. Chen, J. Wu)
68	131599238	Catalytic Hydrothermal Gasification as an Alternative to Anaerobic Digestion Matthew Ong, University of Illinois at Urbana-Champaign, Urbana, IL (M. Ong, L. Schideman)
69	131620366	Pros and Cons of Pyrolysis Vapor Refining and In Situ & Ex Situ Catalytic Pyrolysis Kaushlendra Singh, West Virginia University, Morgantown, WV (K. Singh, D. Dadyburjor, E. Kugler)
70	131618484	Attenuated Total Reflectance Infrared-Spectroscopy (ATR-IR) to Detect Mild Hydrothermal Decay of Woody Biomass Kaushlendra Singh, West Virginia University, Morgantown, WV (K. Singh, J. Zondlo)
71	131619096	Reactive distillation of crude biooil from fast pyrolysis of bagasse Dan Cheng, North Carolina A&T State University, Greensboro, NC (D. Cheng, L. Wang, A. Shahbazi, S. Xiu)
72	131620528	Hydrotreatment of Bio-oil in a Novel Combined Membrane and Bubble Column Reactor Using Syngas Lijun Wang, North Carolina A&T State University, Greensboro, NC (L. Wang, D. Cheng, S. Xiu, H. Wang, A. Shahbazi)
73	131596347	Preliminary Investigation of Catalytic Decarboxylation of Fatty Acids and Esters Dongyun Wang, University of Idaho, Moscow, ID (D. Wang, J. Van Gerpen, B. He)
74	131591362	Converting tobacco crop waste into biodiesel Ming Chai, Bluegrass Biodiesel, Falmouth, KY (M. Chai)
75	131611350	A simulation study of thermal performance of solar hot water storage tank with an immersed heat-exchanger Wenyu Cai, School of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (W. Cai, L. Fu, R. Zheng)
76	131585924	Experimental study on torrefaction of corn stover, switchgrass, and prairie grass Lin Wei, South Dakota State University, Brookings, SD (L. Wei, W. Qu, J. Julson, C. Shi, X. Zhao)
77	131594590	Advanced upgrading of pyrolysis oil via liquid-liquid extraction Yi Wei, Washington State University, Richland, WA (Y. Wei, H. Lei)
78	131596344	Stalk Strength and Sugar Content of Different Dual-Purpose Sorghum Lines Shih-Fang Chen, University of Illinois, Urbana-Champaign, Urbana, IL (S. Chen, P. Brown, M. Danao)
79	131611286	Second generation biofuels: Production of inhibitors during dilute acid pre-treatment of wheat straw Kalavathy Rajan, University of Arkansas, Fayetteville, AR (K. Rajan, D. Carrier)
80	131618542	Effect Of Storage Conditions On The Properties Of Control, AFEX and AFEX-PAKed Prairie Cord Grass Samples Bishnu Karki, South Dakota State University, Brookings, SD (B. Karki, K. Muthukumarappan, V. Sundaram, W. Gibbons)
81	131596652	The effect of washing dilute acid pretreated poplar biomass on ethanol yields Noaa Frederick, University of Arkansas, Fayetteville, AR (N. Frederick, N. Zhang, A. Djioleu, X. Ge, J. Xu, D. Carrier)
82	131620390	Impact of enzyme loading on activity and recovery of cellulases immobilized on polymer brushes Ashani Samarantunga, NDSU, Fargo, ND (A. Samarantunga, N. Nahar, O. Kudina, A. Voronov, S. Minko, S.W. Pryor)



Technical Sessions



83	131621202	Impact of brilliant yellow on the synthesis and structure of <i>Gluconacetobacter xylinus</i> cellulose Yuanyuan Weng, Penn State University, University Park, PA (Y. Weng, J.M. Catchmark)	99	131620959	Adsorbent-Based Algal Cultivation Systems to Facilitate Integration with Wastewater Treatment Chih-Ting Kuo, University of Illinois at Urbana Champaign, Urbana, IL (C. Kuo, L. Schideman)
84	131621004	Immobilization of <i>Trichoderma aureoviride</i> in Calcium alginate Gel Beads for Cellulase Production Yanru Cui, Jilin Academy of Agriculture Science, Changchun, China (Y. Cui, M. Zhang, X. Liu, R. Zhang, Y. Zhang)	100	131619810	Optimization of bio-crude oil from hydrothermal liquefaction of microalgae using response surface methodology Chao Gai, University of Illinois at Urbana-Champaign, Urbana, IL (C. Gai, Y. Zhang, W. Chen, P. Zhang, Y. Dong)
85	131618079	Influence of Weak Acids on Butanol Fermentation by <i>Clostridium Saccharoperbutylaceticum</i> Quan Zhou, North Carolina State University, Raleigh, NC (Q. Zhou, W. Yuan)	101	131596367	Life Cycle Assessment Jet Fuel Produced From Biomass Using an Acetogenic Bacteria William E. Hohenschuh, Oregon State University, Corvallis, OR (W.E. Hohenschuh, G.S. Murthy, A. Hashimoto)
86	131620187	Effects of Silage Pretreatment on the Anaerobic Digestion of Different Parts of Water Hyacinth Yihua Xia, Biosystems Engineering, HangZhou, China (Y. Xia, S. Kuichuan, R. Kloss, Z. Chen, R. Zhou)	102	131620778	Effects of glucose, acetic acid and glycerol on biomass accumulation of <i>Chlorella</i> sp Yuguang Zhou, China Agricultural University, Beijing, China (Y. Zhou, F. Ji, Y. Liu, G. Li, R. Dong)
87	131591978	Evaluation of co-digestion performance of food wastes and animal manure using a solar-powered bioreactor Yuan Zhong, Michigan State University, East Lansing, MI (Y. Zhong, M. Bustamante-Roman, Y. Zhong, S. Archer, R. Chen, D. Kirk, W. Liao)	103	131620807	Effects of Organic Carbon Source and Nitrogen Source on Biomass Accumulation of <i>Chlorella</i> 1067 Yuguang Zhou, China Agricultural University, Beijing, China (Y. Zhou, Y. Liu, F. Ji, G. Li, R. Dong)
88	131629818	Multi-Utilization of Livestock Manures as a Bioenergy Feedstock Keri Cantrell, USDA ARS, Florence, SC (K. Cantrell)	104	131598153	Optimization of the energy value determination method for rice husk using bomb calorimeter Mohammed Bakari, McGill University, Ste-Anne-de-Bellevue, QC, Canada (M. Bakari, M.O. Ngadi)
89	131621010	Improved anaerobic digestion of municipal wastewater via routine bioaugmentation of the acid phase in a two-phase digestion system Peng Li, University of Illinois at Urbana Champaign, Urbana, IL (P. Li, L. Schideman)	105	131620812	Production Potential and Life-cycle Analysis of Camelina Biodiesel in the Pacific Northwest Namrata Dangol, University of Idaho, Moscow, ID (N. Dangol, D.S. Shrestha)
90	131620938	The Ketogenic Microbial Fuel Cell: Alternative Energy Production thru Biomimicry of a Dietary Epilepsy Therapy Ingrid K. Loesch, The Ohio State University, Columbus, OH (I.K. Loesch)	106	131608408	Economic and Environmental Sustainability of Small Nebraska Greenhouse Systems George E. Meyer, UNL, Lincoln, NE (G.E. Meyer, D. Mabie)
91	131619292	Electrical field amplified microbial fuel cells Reed Walter, The Ohio State University, Columbus, OH (R. Walter, T.A. Bower, A.D. Christy)	107	131621021	Techno-economic Analysis of Power Generation from Municipal Green Wastes Nourredine Abdoulmoumine, Auburn University, Auburn, AL (N. Abdoulmoumine, S. Adhikari, A. Kulkarni, S.E. Taylor, E. Loewenstein)
92	131620382	Effect of Moisture Content and Storage Conditions on the Methanogenic Activity of Anaerobic Sludge Jiajia Li, University of California, Davis, CA (J. Li, R. Zhang)	108	131595732	Discrete Event Simulation of Switchgrass Harvest Schedules Robert Grisso, Virginia Tech, Blacksburg, VA (R. Grisso, D. McCullough, J. Cundiff)
93	131620679	A new air-cathode design for use with microbial fuel cells Andrew Miller, The Ohio State University, Columbus, OH (A. Miller, J. Adair, A. Culbertson, T.A. Bower, A.D. Christy, G. Kaletunc)	109	131619964	Moisture Probe Comparison for Moisture Determination in High Density Biomass Bales Michael D. Buser, Oklahoma State University, Stillwater, OK (M.D. Buser, B. Biggerstaff, E. Miller, R.L. Huhnke)
94	131594723	Optimization and Comparison of Growth of Bluegreen Algae in Coiled and Bubble Column Photobioreactor. M.Ramanathan, K. Muthukumarappan. Department of Agricultural and Biosystems Engineering South Dakota State University, Brookings, SD, 57007 Muthu Ramanathan, South Dakota State University, Brookings, SD (M. Ramanathan, K. Muthukumarappan)	110	131619970	Initial Moisture Variability in High Density Biomass Bales Elizabeth Miller, Oklahoma State University, Stillwater, OK (E. Miller, M.D. Buser, R.L. Huhnke, V. Schielack)
95	131611458	Study of Audible Sound Effect on Algae Growth Weiming Cai, Zhejiang University, Hangzhou, China (W. Cai, N. Wang, N.T. Dunford, S. Zhu, H. He)	111	131574361	Sugarcane harvesting system-A critical review Shaochun Ma, Washington State University, Prosser, WA (S. Ma, M. Karkee, Q. Zhang)
96	131620717	Biomass element balancing and media calculations for cyanobacteria Jayasurya Vijayakumar, South dakota state university, Brookings, SD (J. Vijayakumar, G.A. Anderson, S. Gent, A. Rajendran)	112	131688036	Effect of AFEX Treatment on Compaction Characteristics of Corn Stover, Prairie Cord Grass and Switch Grass Vijay Sundaram, South Dakota State University, Brookings, SD (V. Sundaram, K. Muthukumarappan)
97	131620764	The Impact of Air Flow Rate on Photobioreactor Sparger/Diffuser Bubble Size(s) and Distribution Gary A. Anderson, South dakota state university, Brookings, SD (G.A. Anderson, S. Gent, A. Kommareddy, G. Bari)	113	131547529	Growing bioenergy feedstocks on hog farm effluent fields- an economic, environmental, and energy assessment Kevin Caffrey, North Carolina State University, Raleigh, NC (K. Caffrey, M. Whitfield, J. Johnson, M. Veal, M. Chinn)
98	131620672	Light in a photobioreactor Anand Rajendran, South Dakota State University, Brookings, SD (A. Rajendran, G.A. Anderson, S. Gent, X. Yan, J. Vijayakumar)	114	131617671	Effect of Size on Physical and Aerodynamic Properties of Ground Loblolly Pine Wood Olatunde A. Gbenga, Auburn University, Auburn, AL (O.A. Gbenga, O. Fasina, T.P. McDonald, S. Adhikari)



Technical Sessions



115 131619881 **Energy Biosciences Institute: Recent Advances in Biomass Feedstock Production Engineering**
Luis F. Rodriguez, University of Illinois, Urbana, IL (K.C. Ting, A. Hansen, T. Grift, L. Tian, L. Rodriguez, G. Danao, T. Mies, Z. Miao, Y. Sun, S. Mathanker, L. Li, S. Chen, T. Lin, Y. Liao, J. Maughan, D. Williams, Y. Shastri, A. He, D. Jiang, Y. Tan, M. Huang)

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		Introduction
2:35PM	131619963	Animal Agriculture for a Changing Climate - Using New Ways of Educating Extension Agents Crystal Powers, University of Nebraska - Lincoln, Lincoln, NE (C. Powers, P. Knox, D.R. Schmidt, D. Smith, L. Whitefield, J. Pronto)
2:50PM	131596098	Combining Research, Extension and Service-Based Learning Efforts in the Cane Run Watershed Carmen T. Agouridis, University of Kentucky, Lexington, KY (C.T. Agouridis, A. Gumbert, S. Higgins, C. Barton, J. Fox, G. Brion, A. Fryar)
3:05PM	131587503	Successful Application of Extension Client Issues into Special Topics Graduate Courses Related to Low Impact Development in Oklahoma Jason R. Vogel, Oklahoma State University, Stillwater, OK (J.R. Vogel)
3:20PM	131620931	Use of Biosensor in Secondary Education Curriculum to Improve Students' Interest and Awareness of Science, Engineering, and Current Worldwide Issues Pei-Shih Liang, University of Arizona, Tucson, AZ (P. Liang, J. Yoon)

Tuesday, July 23 - 2:30PM-5:00PM
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		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 Senneff, Consultant & Principle, Product Safety Help
4:30PM		Group Discussion of next steps for ASABE involvement in sustainability

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

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

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	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)
9:50AM	131591815	Hermetic storage systems for maize stored on subsistence farms Carl J. Bern, Iowa State University, Ames, IA (C.J. Bern, A. Yakubu, T.J. Brumm, K.A. Rosentrater)
10:05AM	131593290	Effect of Intermittent Lighting on Production Performance of Laying-Hen Parent Stocks He Ma, China Agricultural University, Beijing, China (H. Ma, B. Li, H. Xin, Z. Shi, Y. Zhao)
10:20AM	131596078	Exploration into a Transdisciplinary Model for International Sustainable Development Projects Christopher M. Limiac, Purdue University, West Lafayette, IN (C.M. Limiac, M.R. Sheehan, J. Lumkes)
10:35AM		Break
10:45	131620839	Study of the Incidence of Solar Radiation in Mountainous Regions of Coffee Production Using GIS Williams Ferreira, Brazilian Agricultural Research Corporation - EMBRAPA, Vicosa, Brazil PRESENTER: Cecilia Souza (W. Ferreira, C.D. Souza, E.I. Fernandes Filho, M.F. Ribeiro)
11:00AM	131619462	Advocating the 'Culture of Mushroom Consumption' within the Pre-dominant Discourse of Cancer Treatment and the Politico-Economic Challenges to its Adoption Prem Prakash Srivastav, Indian Institute of Technology, Kharagpur, India (P. Srivastav, S. Nath, M. Bhattacharya)
11:15AM	131584091	Some Parameters affecting the Cracking of Bush Mango (Irvingia Gabonensis) Seed Akindele F. Alonge, University of Uyo, Uyo, Nigeria (A.F. Alonge)
11:30PM	131584092	Effect of Moisture Content on some Frictional Properties of Bush Mango (Irvingia Gabonensis) Nut Akindele F. Alonge, University of Uyo, Uyo, Nigeria (A.F. Alonge)

Wednesday, July 24 - 7:30AM-11:00AM
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		Introduction
7:35AM	131539003	Parametric Study of Machinery Management Relationships on Biomass Baling Robert Grisso, Virginia Tech, Blacksburg, VA (R. Grisso, E. Webb, J. Cundiff, S. Sokhansanj)



Technical Sessions



- 7:50AM 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)
- 8:05AM 131593303 **Feedstock Supply Pathways Influence Net Emissions from Biofuels**
Isaac Emery, Purdue University, West Lafayette, IN (I. Emery, J. Dunn, J. Han, M. Wang)
- 8:20AM 131596081 **Collection and Analysis of Biomass Harvest data for Integrated Biomass Supply and Logistics Model**
Ed Brokesh, Kansas State University, Manhattan, KS (E. Brokesh)
- 8:35AM 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)
- 8:50AM **Break**
- 9:00AM 131618668 **Machine Power and Drying Rate Relationships for High Energy Forage Sorghum**
Elizabeth Miller, Oklahoma State University, Stillwater, OK (E. Miller, M.D. Buser, R.L. Huhnke, R.K. Taylor)
- 9:15AM 131620215 **Analysis of Storage Methods and Tarping Practices for Corn Stover Bales**
Brittany Schon, Iowa State University, Ames, IA (B. Schon, M.J. Darr, K. Webster, A. Kissel, A. Shah)
- 9:30AM 131620254 **Design and Performance of a Biomass Shredder**
Shawn Ehlers, Purdue University, West Lafayette, IN (S. Ehlers, D.R. Buckmaster, D.R. Ess, K. Johnson)
- 9:45AM 131599046 **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)

Wednesday, July 24 - 7:30AM-10:45AM

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

- | Time | Paper # | Title/Authors |
|--------|-----------|--|
| 7:30AM | | Introduction |
| 7:35AM | 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) |
| 7:50AM | 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) |
| 8:05AM | 131592135 | A new design method of micro-irrigation engineering
Delan Zhu, Northwest A&F University, Yangling, China
PRESENTER: Lin Zhang (D. Zhu, Z. Zhang) |
| 8:20AM | 131620323 | Estimating a Soil Quality Index with VNIR Reflectance Spectroscopy
Kenneth Sudduth, USDA-ARS, Columbia, MO (K. Sudduth, R. Kremer, K. Veum, N. Kitchen) |
| 8:35AM | 131595956 | Factors affecting soil phosphorus and potassium estimation by reflectance spectroscopy
Guotian Hu, Northwest A&F University, Yangling, China (G. Hu, K.A. Sudduth, B. Myers, D. He, M. Nathan) |
| 8:50AM | | Break |
| 9:00AM | 131620324 | Effect of Drought Stress on Sensing Nitrogen Requirements for Cotton
Earl Vories, USDA-ARS, Portageville, MO (E. Vories, A. Jones, K.A. Sudduth, S. Drummond, R. Benson) |
| 9:15AM | 131620849 | Estimating leafy green crop biomass using ultrasonic proximity sensing
Yue Su, McGill University, Ste-Anne-de-Bellevue, QC, Canada (Y. Su, V. Adamchuk, N. Tremblay, Y. Bouroubi, E. Fallon) |

- 9:30AM 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)
- 9:45AM 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)

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

SESSION 303

MACHINERY MANAGEMENT AND MECHANIZATION - PART 1 - Sponsored by PM-43
Moderator: TBA
LOCATION: BENTON A-SHERATON

- | Time | Paper # | Title/Authors |
|--------|-----------|--|
| 7:30AM | | Introduction |
| 7:35AM | 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) |
| 7:50AM | 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) |
| 8:05AM | 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) |
| 8:20AM | 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) |
| 8:35AM | | Break |
| 8:45AM | 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) |
| 9:00AM | 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) |

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

SESSION 304

INNOVATIVE HYDROLOGY AND WATER QUALITY MONITORING - Sponsored by SW-21
Moderator: Francois Birgand
LOCATION: BENTON B-SHERATON

- | Time | Paper # | Title/Authors |
|--------|-----------|---|
| 7:30AM | | Introduction |
| 7:35AM | 131598397 | 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) |
| 7:50AM | 131618648 | Nutrient runoff from non-agricultural areas - two catchments in Norway
Håkon Borch, Bioforsk, Aas, Norway (H. Borch) |
| 8:05AM | 131620636 | Quantifying E. coli Discharge from Onsite Sewage Facilities in the Dickinson Bayou Watershed, Texas
Derek Morrison, Texas A&M University, College Station, TX (D. Morrison, C. Munster, R. Karthikeyan, J. Jacob) |
| 8:20AM | 131618351 | Groundwater Resources and Associated Environmental Issues in Texas: A Changing Scenario
Srinivasulu Ale, Texas A&M AgriLife Research, Vernon, TX (S. Ale, S. Chaudhuri) |
| 8:35AM | | Break |



Technical Sessions



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)

Wednesday, July 24 - 7:30AM-10:15AM
SESSION 305
OPPORTUNITIES AND CHALLENGES IN LONG-TERM EXPERIMENTAL WATERSHED RESEARCH -
 Sponsored by SW-21
 Moderator: Daren Harmel, USDA-ARS, Temple, TX
LOCATION: VAN HORN A-SHERATON

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131668612	Conservation Effects Assessment Project (CEAP) Watershed Assessment Study Mark Walbridge, USDA-ARS, Beltsville, MD (M. Walbridge, J.E. Sadler)
7:50AM	131672636	Long-term Watershed-Scale Assessment Opportunities in Support of the Conservation Effects Assessment Project (CEAP) Lisa F. Duriancik, USDA-NRCS, Beltsville, MD (L.F. Duriancik)
8:05AM	131620750	Watershed Conservation Integrated Practice Assessment Capabilities of the USDA AnnAGNPS Watershed Planning Technology Ronald Bingner, USDA, Oxford, MS (R. Bingner, R. Kuhnle, R. Wells, H. Momm, J. Singh)
8:20AM	131578857	Long Term Agro-Ecosystem Research (LTAR) Network: Upper Chesapeake Bay Tamie L. Veith, USDA-ARS, University Park, PA (T.L. Veith, P. Kleinman, P. Adler, R. Bryant, A. Buda, C. Church, C. Dell, S. Goslee, A. Rotz, H. Skinner, K. Soder)
8:35AM	131555739	USDA-ARS Experimental Watershed Network: Contributions and Challenges of Long-Term Research at the Original USDA-ARS Experimental Watersheds Daren Harmel, USDA-ARS, Temple, TX (D. Harmel)
8:50AM		Break
9:00AM	131619824	Opportunities and Challenges in the St. Joseph River Watershed: Plugging some leaks in the system while new leaks are found Douglas Smith, USDA-ARS, National Soil Erosion Research Laboratory, West Lafayette, IN (D. Smith)
9:15AM	131620710	Research watersheds in the Central Mississippi River Basin: challenges and opportunities John E. Sadler, USDA-ARS, Columbia, MO (J.E. Sadler, C. Baffaut, K. Sudduth)
9:30AM	131620680	Two Long-term Experimental Forests in Southeastern Atlantic Coastal Plain - A Basis for Addressing Contemporary Water Issues Devendra M. Amatya, Center for Forested Wetlands Research, Cordesville, SC (D.M. Amatya, C.C. Trettin, R.W. Skaggs, J. Nettles)
9:45AM	131619770	Nutrient losses from an irrigated watershed in southern Idaho Dave Bjorneberg, USDA ARS, Kimberly, ID (D. Bjorneberg, J. Ippolito, A. Koehn)

Wednesday, July 24 - 7:30AM-10:00AM
SESSION 306
NUTRIENT TRANSPORT AND CYCLING - Sponsored by SW-22, SW-224, SW-21, SW-25
 Moderator: Garey A. Fox, Oklahoma State Univ, Stillwater, OK; Sanjay Shukla, University of Florida, Immokalee, FL
LOCATION: VAN HORN B-SHERATON

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131591897	Runoff Nutrient Transport as Affected by Slurry Application Method, Swine Growth Stage, and Flow Rate John Gilley, USDA-Agricultural Reserch Service, Lincoln, NE (J. Gilley)
7:50AM	131620792	Nitrate Transport Parameters for Different Soils of Illinois State Jarbas H. Miranda, ESALQ/USP, Piracicaba, Brazil (J.H. Miranda, R.A. Cooke, T.J. Rendall, S.N. Duarte)
8:05AM	131621201	Phosphorus sorption and desorption from soils under flow-through conditions: An investigation of the use of thermal heat patterns as indicators of the degree, mechanisms, and kinetics of sorption reactions Derek M. Heeren, University of Nebraska-Lincoln, Lincoln, NE (D.M. Heeren, C. Penn, G.A. Fox)
8:20AM	131621213	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. Penn, T. Halihan)
8:35AM		Break
8:45AM	131583250	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)
9:00AM	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 Mary Searing, Greenhome and O'mara Engineering Consultants, Laurel, MD PRESENTER: Brett Schrey (M. Searing, B. Schrey)
9:15AM	131620585	Using scaled physical models to measure the effects 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)

Wednesday, July 24 - 7:30AM-10:00AM
SESSION 307
EVALUATING CLIMATE CHANGE IMPACTS ON WATER RESOURCES AND AGRICULTURE -
 Sponsored by SW-21
 Moderator: Christopher J. Martinez, University of Florida, Gainesville, FL
LOCATION: VAN HORN C-SHERATON

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131596556	Comparison of temperature, radiation and combination-based methods for estimating reference evapotranspiration in different climates Maria G. Arellano, University of Nebraska, Lincoln, NE (M.G. Arellano, S. Irmak)
7:50AM	131595934	Evaluating the Impact of Climate Change on Rainfall Intensity-Duration-Frequency (IDF) Curves in Alabama Using Dynamically-Downscaled Precipitation Data Golbahar Mirhosseini, Auburn University, Auburn, AL (G. Mirhosseini, P. Srivastava, X. Fang, L. Kalin, K. Ingram)
8:05AM	131619976	The impact of climate change on streamflow, rainfall erosivity and soil erosion in the continental United States Rabin Bhattarai, University of Illinois at Urbana-Champaign, Urbana, IL (R. Bhattarai, G. Sun, P. Caldwell, S. McNulty)



Technical Sessions



8:20AM	131620711	Impacts of climate change and irrigation management strategies on soil moisture, evapotranspiration, irrigation water availability, and crop productivity Keyvan Malek, Washington State University, Pullman, WA (K. Malek, C. Stockle, J. Adam, R. Nelson, K. Chinnayakanahalli3)
8:35AM	131620968	Climate change impact assessment on risk of hydrological extremes Manoj K. Jha, North Carolina A&T State University, Greensboro, NC (M.K. Jha, S. Chattopadhyay)
8:50AM		Break
9:00AM	131580500	Simulating climate change impacts on nitrate-nitrogen loss and crop yield in a subsurface drainage field Zhiming Qi, McGill University, Sainte-Anne-de-Bellevue, QC, Canada (Z. Qi)
9:15AM	131593256	Evaluating the Effectiveness of BMPs with Future Climate Scenarios in a Forested Watershed in Mississippi Abdullah O. Dakhlalla, Mississippi State University, Starkville, MS (A.O. Dakhlalla, P.B. Parajuli)
9:30AM	131562598	Climate change and associated risks to stream integrity Sean Woznicki, Michigan State University, East Lansing, MI (S. Woznicki, A. Nejadhashemi, Y.A. Hamaamin)
9:45AM	131598024	Impacts of Climate Variability on Sediment and Nutrients Loadings from Upper Pearl River Watershed (UPRW) Prem B. Parajuli, Mississippi state university, Starkville, MS (P.B. Parajuli, B.P. Jayakody, T.P. Cathcart)

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

SESSION 308

MODEL SPECIFIC CALIBRATION AND VALIDATION

- Sponsored by Soil & Water Division
Moderator: Daniel N. Moriasi

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

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

SESSION 309

DAM SAFETY: INSPECTION AND REHABILITATION

- Sponsored by SW-25, SW-251, SW-22
Moderator: Ronald D. Tejral, USDA ARS, Stillwater, OK

LOCATION: EMPIRE A-SHERATON

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131595640	The Impact of Auxiliary Spillway Flows from Irene and Lee on NRCS Flood Control Dams in NY Peter Wright, NRCS, Syracuse, NY (P. Wright, K. Junkins, J. Hock, M. Martin, T. Desiderio, C. Henry, J. Malone)
7:50AM	131595799	The use of secant pile walls in the rehabilitation of the Pohick Creek Dam No. 2 (Lake Barton) auxiliary spillway Alica J. Ketchem, USDA Natural Resources Conservation Service, Richmond, VA (A.J. Ketchem, M.J. Lyons, G.W. Wright)
8:05AM	131620184	Generalized Air Concentration Relationship for Stepped Spillways Sherry L. Hunt, Hydraulic Engineering Research Unit, Stillwater, OK (S.L. Hunt, K.C. Kadavy, G. Hanson)
8:20AM		Break

8:30AM	131620204	Generalized Flow Depth Relationships for Stepped Spillways Sherry L. Hunt, Hydraulic Engineering Research Unit, Stillwater, OK (S.L. Hunt, K.C. Kadavy, G. Hanson)
8:45AM	131620216	Flood Control Ability Changes of Dam Heightening Reservoirs Considering Climate Change Sang Min Jun, Seoul National University, Seoul, Republic of Korea (S. Jun, M. Kang, I. Song, S. Hwang, J. Park)

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

SESSION 310

CONTROLLED DEFICIT AND VARIABLE RATE IRRIGATION

- Sponsored by SW-24, SW-244, SW-241
Moderator: Kenneth C. Stone, USDA-ARS, Florence, SC

LOCATION: EMPIRE B-SHERATON

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131593181	Evaluation of potential water conservation using site-specific irrigation scheduling Kenneth C. Stone, USDA-ARS, Florence, SC (K.C. Stone, P.J. Bauer, J.A. Millen)
7:50AM	131619460	Field evaluation of Penman-Monteith canopy resistance for bell pepper evapotranspiration estimation Olanike Aladenola, McGill University, Ste Anne de Bellevue, QC, Canada (O. Aladenola, C. Madramootoo)
8:05AM	131559786	Effects of Regulated Deficit Irrigation and Phosphorus Fertilizers on Water Use Efficiency, Yield and Total Soluble Solids of Tomato Mohamed E. Abuarab, Faculty of Agriculture - Cairo University, Giza, Egypt (M.E. Abuarab, A.M. Hassan, M. Shahein)
8:20AM	131597701	Effect of Deficit Irrigation Water on the Productivity and Characteristics of Tomato Mohamed E. Abuarab, Faculty of Agriculture - Cairo University, Giza, Egypt (M.E. Abuarab, A.M. Hassan)

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

SESSION 311

AIR QUALITY - PARTICULATE MATTER EMISSION FACTORS AND ABATEMENT STRATEGIES

- Sponsored by SE-305, PM-23/7/3
Moderator: Russell O. McGee, Texas A&M Univ, College Station, TX

LOCATION: EMPIRE C-SHERATON

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131549941	Cotton Gin PM2.5 Emissions Based on EPA Stack Sampling Methodologies and Particle Size Distributions Michael D. Buser, Oklahoma State University, Stillwater, OK (M.D. Buser, D. Whitelock, J. Boykin, G. Holt)
7:50AM	131549948	Cotton Gin PM10 Emissions Based on EPA Stack Sampling Methodologies and Particle Size Distributions Michael D. Buser, Oklahoma State University, Stillwater, OK (M.D. Buser, D. Whitelock, J. Boykin, G. Holt)
8:05AM	131593410	Cotton Gin Total Particulate Matter Emissions Based On EPA Stack Sampling Methodologies Derek Whitelock, USDA-ARS, Mesilla Park, NM (D. Whitelock, M.D. Buser, J. Boykin, G. Holt)
8:20AM	131594897	Cyclone Energy: Impact of Inlet Velocity and Outlet Evase Designs Paul Funk, USDA-ARS, Mesilla Park, NM (P. Funk, G. Holt, D. Whitelock)
8:35AM		Break
8:45AM	131619353	Concentrations and Size Distributions of Airborne Particulate Matter and Bacteria in an Experimental Aviary Laying-Hen Housing System Yang Zhao, Iowa State University, Ames, IA (Y. Zhao, W. Zheng, H. Xin, B. Li, R. Gates, Y. Zhang, M. Soupir)
9:00AM	131619362	Reduction of Airborne Particulate Matter and Bacteria by Spraying Slightly Acidic Electrolyzed Water in an Experimental Aviary Laying-Hen Setting Yang Zhao, Iowa State University, Ames, IA (Y. Zhao, W. Zheng, H. Xin, B. Li, R. Gates, Y. Zhang, M. Soupir)



Technical Sessions



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		Introduction
7:35AM	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. Kroebe, H. Janzen, K. Beauchemin, S. McGinn, S. Bittman, A. Atia, 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		Break
8:30AM	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	131579712	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		Introduction
7:35AM	131620039	Optimizing the Pad Cooling Ventilation System of Laying Hen Barn Using Computational Fluid Dynamics in Southeast China Xiaoshuai Wang, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (X. Wang, K. Wang)
7:50AM	131616256	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)
8:05AM	131593074	Thermal and areal (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)
8:20AM		Break
8:30AM	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)

9:00AM 131620440

Methodology to compare efficiency of radiant brooders
John Linhoss, Mississippi State University, Mississippi State, MS (J. Linhoss, J.D. Davis, J.L. Purswell)

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		Introduction
7:35AM	131596390	Automating Management for a Vegetative Treatment System Jason Gross, University of Nebraska Lincoln Extension, Lincoln, NE (J. Gross, C.G. Henry)
7:50AM	131595075	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. Li, T. Li, H. Wang, B. Li)
8:05AM	131596426	Feeding Cattle without the Feedlot Jason Gross, University of Nebraska Lincoln Extension, 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		Break
8:45AM	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		Introduction
7:35AM	131594988	Measurement of Degree of Milling for Rice Using Hyperspectral Imaging Yan-Fu Kuo, National Taiwan University, Taipei, Taiwan (Y. Kuo, W. Chen)
7:50AM	131596857	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)
7:50AM	131587669	The evolution of dielectric properties measurement techniques for agricultural products Stuart O. Nelson, U. S. Department of Agriculture, Athens, GA (S.O. Nelson, S. Trabelsi)
8:05AM	131591627	Time delay correction to finite-order models of acoustic wave propagation in homogenous media Nilesh V. Salvi, University of Missouri, Columbia, MO (N.V. Salvi, J. Tan)
8:20AM		Break
8:30AM	131594617	Methods for Differentiating Drainage oil and Normal Oil Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan)



Technical Sessions



8:45AM 131596156 **A rapid instrument designed for identifying the authenticity of agricultural products**
Wenshen Jia, Jilin University, Changchun, China (W. Jia, J. Wang, Y. Lan, W. Wu, Z. Ma, D. Wang)

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

SESSION 316

VALUE-ADDED CHEMICALS AND PRODUCTS FROM BIOMASS - Sponsored by FPE-709, T-11, BE-28
Moderator: Sushil Adhikari, Auburn University, Auburn, AL
LOCATION: PERSHING SOUTH-WESTIN

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131587024	Environmentally Benign Pressure-Sensitive Adhesives from Soybean Oils Yonghui Li, Kansas State University, Manhattan, KS (Y. Li, X.S. Sun)
7:50AM	131592132	Determination of optimum densification conditions for production of corn stover pellets Virendra M. Puri, Pennsylvania State University, University Park, PA (V.M. Puri, A. Karamchandani, H. Yi)
8:05AM	131618553	Characterization and Enzymatic Hydrolysis of Soybean White Flakes and Soybean Meal Pretreated with Supercritical CO₂- Assisted Extrusion Bishnu Karki, South Dakota State University, Brookings, SD (B. Karki, K. Muthukumarappan, J. Kaur, W. Gibbons)
8:20AM		Break
8:30AM	131620425	Design, synthesis and characterization of soy protein - calcium silicate hydrate (C-S-H) biocomposites for adhesives Min Jung Kim, Kansas State University, Manhattan, KS (M. Kim, X.S. Sun)
8:45AM	131620877	Soybean oil based resin for transparent flexible coatings in food packaging Jonggeun Sung, Kansas State University, Manhattan, KS (J. Sung, Y. Li, X.S. Sun)
9:00AM	131620826	Epoxidation of camelina oil for biopolymer industry applications Namhoon Kim, Kansas State University, Manhattan, KS (N. Kim, Y. Li, X.S. Sun)

Wednesday, July 24 - 10:15AM-12:45PM

SESSION 317

COMPUTATIONAL FLUID DYNAMICS (CFD) APPLICATIONS IN AGRICULTURE - Sponsored by IET-217, BE-22, SW-224, SW-302, SE-303, SE-403
Moderator: Christopher Y. Choi, Univ of Wisconsin, Madison, WI
LOCATION: ROANOKE-WESTIN

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131618954	Evaluation of energy efficiency for anaerobic digestion using an integrated physical and biological model Binxin Wu, Philadelphia Mixing Solutions, Palmyra, PA (B. Wu)
10:35AM	131598624	Computational model of ventilation systems in dairy structures Mario Mondaca, University of Wisconsin, MAdison, WI (M. Mondaca, N. Cook, K. Nordlund, C.Y. Choi)
10:50AM	131598901	Development and Validation of a Computational Fluid Dynamics Model of Algal Growth Jessica Drewry, University of Arizona, Tucson, AZ (J. Drewry, C.Y. Choi)
11:05AM	131620744	Simulation of Airflow in Broiler Houses for Salmonella Risk Reduction Hubert Montas, University of Maryland, College Park, MD (H. Montas, J.R. Timmons, G. Felton, E. Mallinson)
11:20AM	131598937	An advanced conductive cooling design to relieve heat stress in modern dairies Yifan Liang, University of Arizona, Tucson, AZ (Y. Liang, M. Mondaca, F. Rojano, C.Y. Choi)

11:35AM 131620673 **Investigation of turbulence modeling for mechanical mixing in anaerobic digesters**
Binxin Wu, Philadelphia Mixing Solutions, Palmyra, PA (B. Wu)

11:50AM 131586235 **Numerical simulation of gas-solid flow in a cross-flow grain separation device**
Xiaoqiang Du, Zhejiang Sci-Tech University, Hangzhou, China (X. Du, K. Ni, J. Chen, C. Wu, Y. Zhao)

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

SESSION 317

ADVANCES IN BIOMASS PREPROCESSING AND PRETREATMENT - Sponsored by FPE-709, T-11
Moderator: Sudhagar Mani, Univ of Georgia, Athens, GA
LOCATION: PERSHING NORTH-WESTIN

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131598515	On-farm-Scale Biomass Pelletizer Performance Daniel Ciolkosz, Penn State, University Park, PA (D. Ciolkosz, R. Hilton, D. Swomley, H. Yi, V.M. Puri, G. Roth)
7:50AM	131614865	Effect of moisture content on the pelletization behavior of torrefied corn stover Jeremy Brue, Iowa State University, Ames, IA (J. Brue, D. Medic, Z. Bartlett, M.J. Darr)
8:05AM	131620350	Pretreatment of Biomass Using an Alkaline Hydrogen Peroxide Spray Josh Jackson, University of Kentucky, Lexington, KY (J. Jackson, M. Montross)
8:20AM		Break
8:30AM	131620770	Numerical simulation of cutting tool and biomass interactions during preprocessing Bo Liu, University of Missouri, Columbia, MO (B. Liu, A.B. Koc)
8:45AM	131587920	Comparison of pretreatment methods for wheat straw pelletization by life cycle assessment study Donghui Lu, China Agricultural University, Beijing, China (D. Lu, L.G. Tabil, D. Wang, X. Li, E. Mupondwa)
9:00AM	131594244	Effect of deep drying on grinding and moisture content of biomass Manunya Phanphanich, Idaho National Laboratories, Idaho falls, ID (M. Phanphanich)

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

SESSION 319

DRYING, HANDLING, AND STORAGE OF CROPS FOR FOOD AND ENERGY - PART 1 - Sponsored by FPE-702, FPE-712
Moderator: Carol Jones, Stillwater, OK
LOCATION: PERSHING WEST-WESTIN

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	131619002	Particle Models for Discrete Element Modeling of Bulk Grain Properties of Wheat Kernels Josephine M. Boac, Kansas State University, Manhattan, KS (J.M. Boac, M.E. Casada, R.G. Maghirang, J.P. Harner)
7:50AM	131592148	Internal Environment, Moisture, and Quality of Freshly Harvested Corn Stored in Grain Bags Jason K. Ward, Mississippi State University, Mississippi State, MS (J.K. Ward, J.D. Davis)
8:05AM	131620500	Mortality of insect life stages during simulated heat treatment Mark Casada, USDA, ARS, CGAHR, Manhattan, KS (M. Casada, F. Arthur)
8:20AM	131595312	Diffusion and Production of Carbon Dioxide in Bulk Corn at Various Temperatures and Moisture Content Haibo Huang, University of Illinois at Urbana Champaign, Urbana, IL (H. Huang, M. Danao, K. Rausch, V. Singh)
8:35AM		Break
8:45AM	131595654	Optimization of energy efficiency in a batch grain dryer Tapani Jokiniemi, University of Helsinki, Helsinki, Finland (T. Jokiniemi, J. Ahokas)



Technical Sessions



9:00AM 131616261 **Effects of drying techniques on qualities of different vegetables**
 Karunanithy Chinnadurai, University of Wisconsin-Stout, Menomonie, WI (K. Chinnadurai, P. Nalla)

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

SESSION 320

BIOPROCESSING FOR VALUE-ADDED PRODUCTS

- Sponsored by BE-28, FPE-709

Moderator: Ganti S. Murthy, Oregon State University, Corvallis, OR

LOCATION: PENN VALLEY-WESTIN

Time Paper # Title/Authors

- 7:30AM**
7:35AM 131594263 **Introduction**
Optimization of Human Lysozyme Production by Kluyveromyces lactis K7 in Biofilm Reactors
 Duygu Ercan, Pennsylvania State University, University Park, PA (D. Ercan, A. Demirci)
- 7:50AM 131620800** **Alkali treatment to reduce the toxicity of acetic acid-rich bio-oil and enhance the biological utilization of lignocellulosic biomass through pyrolysis**
 Xuefei Zhao, Iowa State University, Ames, IA (X. Zhao, Z. Wen)
- 8:05AM 131598740** **Characterization of Lignin Intermediates in Hydrothermal Process for Production of Biopolymers**
 Libing Zhang, Washington State University, Richland, WA (L. Zhang, D.D. Laskar, L. Yan, B. Yang)
- 8:20AM 131592142** **Polymer Based Dairy Manure Protein Separation Methodology**
 Zong Liu, University of Wisconsin-Madison, Madison, WI (Z. Liu)
- 8:35AM**
8:45AM 131547849 **Break**
Optimizing biohydrogen production from co-fermenting swine manure and sugar processing wastewater
 Xiao Wu, University of Minnesota, St. Paul, MN (X. Wu, H. Lin, J. Zhu)
- 9:00AM 131618201** **Hydrogen production by microbial electrolysis cells**
 Di Yan, North Carolina State University, Raleigh, NC (D. Yan, W. Yuan)
- 9:15AM 131595838** **Extrusion Processing Effects on Protein Bioavailability and Thermal Properties of Complete Plant-based Aquafeeds Formulated with Fermented Soy Protein Concentrate**
 Parisa Fallahi, South Dakota State University, Brookings, SD (P. Fallahi, K. Muthukumarappan, K.A. Rosentrater)
- 9:30AM 131620857** **Heat transfer analysis for bench and pilot scale production of epoxidized sucrose soyate**
 Ewumbua M. Monono, North Dakota State University, Fargo, ND (E.M. Monono, D.M. Haagensohn, J. Perleberg, D.P. Wiesenborn)

Wednesday, July 24 - 7:30AM-10:15AM

SESSION 321

NUTRIENT REMOVAL, RECOVERY AND RECYCLE

- Sponsored by BE-22

Moderator: Wendong Tao, State University of New York, Syracuse, NY

LOCATION: ROANOKE-WESTIN

Time Paper # Title/Authors

- 7:30AM**
7:35AM 131618745 **Introduction**
Nitrogen and Phosphorus Recovery from Anaerobic Digested Dairy Wastewater
 Quanbao Zhao, Washington State University, Pullman, WA (Q. Zhao, C. Frear, S. Chen)
- 7:50AM 131620000** **Membrane Separation for Nutrient Recovery from the Effluent of Anaerobic Digester and Aerobic Reactor**
 Mianfeng Zhang, University of California Davis, Davis, CA (M. Zhang, X. Liu, R. Zhang, J.L. Rapport)
- 8:05AM 131590424** **Ammonia Recovery from Dairy Manure**
 Anayo T. Ukwuani, State University of New York, Syracuse, NY (A.T. Ukwuani, W. Tao, J. Han)

8:20AM 131613111 **A hybrid adsorbent-membrane photobioreactor for enhanced nutrient and organics recovery from wastewater during algal biomass production**
 Yan Zhou, University of Illinois, URBANA, IL (Y. Zhou, L. Schideman, X. Zhao)

8:45AM 131592977 **Production of Granulated Dairy Manure Solids**
 Damodhara R. Mailapalli, University of Wisconsin Madison, Madison, WI (D.R. Mailapalli, A. Roa-Espinosa, A. Thompson, J. Markley)

8:350AM
9:00AM 131618699 **Break**
Anaerobic Digestion of Whole and Lipid-Extracted Algal Biomass from Four Industrial Strains—Determination of Important Methane and Nutrient Information
 Craig Frear, Washington State University, Pullman, WA (C. Frear, B. Zhao, J. Ma, Q. Zhao)

9:15AM 131620719 **The Rotating Photo-Bioreactor as a Method for Removing Soluble Nutrients from Waters**
 Dennis A. Burke, Environmental Energy & Engineering Company, Olympia, WA (D.A. Burke)

9:30AM 131596516 **Reclaiming Water from Anaerobic Digestion Effluent using Electrocoagulation Flotation (ECF) Treatment**
 Zhiguo Liu, Michigan State University, East Lansing, MI (Z. Liu, W. Liao, Y. Liu)

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

SESSION 322

INTERNATIONAL AGRICULTURAL STANDARDS DEVELOPMENT-EUROPE-SOUTH AMERICA, ASIA

Moderator: Scott Cedarquist, ASABE, St Joseph, MI

LOCATION: SHAWNEE-WESTIN

Time Paper # Title/Authors

- 7:30AM 131749291** **Review of Agricultural Engineering Construction Standardization Management in China**
 Yanqin Shi, Chinese Academy of Agricultural Engineering, Beijing, China (Y. Shi, S. Li, Y. Wang)
- 7:30AM** **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, Manager of Regulatory Affairs at John Deere in Latin America

Wednesday, July 24 - 10:15AM-12:45PM

SESSION 323

MACHINERY MANAGEMENT AND MECHANIZATION - PART 2 - Sponsored by PM-43

Moderator: TBA

LOCATION: NORTHROP-SHERATON

Time Paper # Title/Authors

- 10:15AM**
10:20AM 131620236 **Introduction**
Mechanization Profit Portion in Plant Products Industry in Shaanxi Province
 Wenting Han, Northwest A&F University, Yangling, China (W. Han, Y. Huang, X. Wang)
- 10:35AM 131595856** **Modelling of Energy Requirement for Tillage Operation**
 Kayode C. Oni, University of Ilorin, Ilorin, Nigeria (K.C. Oni, O.A. Oyelade)
- 10:50AM 131596927** **Applicability evaluation of corn harvesting machinery in Northern China**
 Xiufeng Lu, China Agricultural University, Beijing, China (X. Lu, Z. Gao, B. Yang, Z. Zheng, Z. Lou)
- 11:05AM 131619264** **Research on the Demand of Alfalfa Harvest Machine in China's Northern and North-west Regions**
 Donghui Lu, China Agricultural University, Beijing, China (D. Lu, G. Zeqi, W. Zhiqin, D. Wang, G. Wang)
- 11:20AM** **Break**



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 Abdulsalam, Ahmadu Bello University, Zaria, Nigeria (M. Abdulsalam, M.A. Gwarzo, 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.O. Adewoyin, E.A. Ajav)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 324

ENGINEERING FOR FORAGE HARVEST, STORAGE AND PARTICLE SIZE ANALYSIS -
Sponsored by PM-23/7/2
Moderator: Patrick T. Murphy, Purdue University, West Lafayette, IN
LOCATION: FREMONT-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 10:15AM | | Introduction |
| 10:20AM | 131578073 | Particle size analysis by static and dynamic image analysis for processed biomass crops
Philippe Savoie, Agriculture and Agri-Food Canada, Québec, QC, Canada (P. Savoie, G. Pilon, S. Mani) |
| 10:35AM | 131591987 | Improving the Bale Handling Logistics by Strategic Bale Placement
Kevin Shinnors, Univ of Wisconsin, Madison, WI (K. Shinnors, 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. Griff, 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 Savoie, Agriculture and Agri-Food Canada, Québec, QC, Canada (P. Savoie, M. Audy-Dubé, C.L. St-Arnaud, R. Morissette) |
| 11:45PM | 131593061 | Relationships between Biomass Feedstock Capacitance and Bulk Density During Compression
Yuesheng Tan, Beijing Forestry University, Beijing, China (Y. Tan, Z. Miao, T. Griff, 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) |

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 325

VARIABLE RATE TECHNOLOGY FOR PRECISION AGRICULTURE - Sponsored by PM-54
Moderator: Ajay Sharda, Washington State University, Prosser, WA; Ajay Sharda
LOCATION: BENTON A-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 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) |

- 10:50AM 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)
- 11:05AM **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 326

IRRIGATION SCHEDULING TOOLS AND MOBILE APPLICATIONS - Sponsored by SW-24, SW-244
Moderator: Gretchen F. Sassenrath, USDA-ARS, Stoneville, MS
LOCATION: BENTON B-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 10:15AM | | Introduction |
| 10:20AM | 131619807 | Development of the Mississippi Irrigation Scheduling Tool - MIST
Gretchen F. Sassenrath, Kansas State University, Parsons, KS (G.F. Sassenrath, A.M. Schmidt, J.M. Schneider, M. Tagert, J. Corbitt, H. van Riessen, J. Crumpton, B. Rice, R. Thornton, R. Prabhu, J. Pote, C. Wax) |
| 10:35AM | 131620189 | Implementation of the Mississippi Irrigation Scheduling Tool in a dynamic web-based format
Hendrik van Riessen, Delta State University, Cleveland, MS (H. van Riessen, D. Irby, G.F. Sassenrath, B. Rice, J. Crumpton, A.M. Schmidt, M. Tagert) |
| 10:50AM | 131620221 | Uncertainty, calibration and validation of the Mississippi Irrigation Scheduling Tool model
Rajkumar Prabhu, Mississippi State University, Starkville, MS (R. Prabhu, G.F. Sassenrath, A.M. Schmidt, M. Tagert, B. Rice, H. van Riessen, R. Thornton, J. Corbitt, J. Pote, C. Wax) |
| 11:05AM | 131620208 | Testing the variability of field-level rainfall amounts and the potential impact on error in soil water balance calculations
Gretchen F. Sassenrath, Kansas State University, Parsons, KS (G.F. Sassenrath, J.M. Schneider, J. Corbitt, A.M. Schmidt, M. Tagert) |
| 11:20AM | 131620232 | On-farm testing and potential improvements in water management using the MIST
Gretchen F. Sassenrath, Kansas State University, Parsons, KS (G.F. Sassenrath, A.M. Schmidt, J. Corbitt, M. Tagert, J.M. Schneider, J. Crumpton, B. Rice, H. van Riessen, R. Thornton, R. Prabhu, J. Pote, C. Wax) |
| 11:35AM | | Break |
| 11:45AM | 131620243 | Development and delivery of educational tools for irrigation water management and on-farm implementation of the MIST
Amy M. Schmidt, University of Nebraska, Lincoln, NE (A.M. Schmidt, G.F. Sassenrath, J. Crumpton, J. Corbitt, B. Rice, H. van Riessen, R. Thornton, R. Prabhu, J. Pote, C. Wax, M. Tagert) |
| 12:00PM | 131596687 | Introducing the Web-Based Version of Kanschred: An ET-Based Irrigation Scheduling Tool
Danny H. Rogers, Kansas State University, Manhattan, KS (D.H. Rogers) |
| 12:15PM | 131621425 | Can ET Based Irrigation Controllers Meet Texas Landscape Needs? Year 3 Evaluation Results
Charles Swanson, Texas A&M Agrilife Extension Service, College Station, TX (C. Swanson, G. Fipps) |



Technical Sessions



12:30PM 131587330 **Development and Evaluation of a Step-Wise Plant Soil Water Extraction Model**
 Daran Rudnick, University of Nebraska - Lincoln, Lincoln, NE (D. Rudnick, S. Irmak)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 327

Time	Paper #	Title/Authors
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	131595782	Purification effect of industrialized turtle-breeding Wastewater using an improved Celery Ecological floating-bed System Kun Xiang, Institute of Agricultural Bio-environment Engineering Zhejiang University, Hangzhou, China PRESENTER: Songming Zhu (K. Xiang, S. Zhu, K. Yan, C. Chen, Z. Han, R. Zheng)
10:50AM	131598526	Characterizing the effect of hydrothermal liquefaction on fate and transport of bio-active compounds in animal waste Mai Pham, University of Illinois at Urbana-Champaign, Urbana, IL (M. Pham, B. Sharma, M. Plewa, L. Schideman)
11:05AM		Break
11:15AM	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 ELSAYED, McGill University, Ste Anne de Bellevue, QC, Canada (E. ELSAYED, S.O. Prasher)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 328

Time	Paper #	Title/Authors
		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. Speakers are members of a broad interdisciplinary team consisting of ecologists, engineers, social scientists, and government agencies, for one of the first Payment for Environmental Services (PES) program implemented in the U.S. for water storage and nutrient (N and P) load reductions called the Northern Everglades Payment for Environmental Services program (NEPES). NEPES developed from an earlier pilot program called the Florida Ranchlands Environmental Services Program. 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.

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)
11:45AM	131596052	Effects of Mowing Regimes and Native Grasses on Denitrification Potential in an Agricultural Riparian Zone Carmen T. Agouridis, University of Kentucky, Lexington, KY (C.T. Agouridis, I. Ribeiro, M. Coyne, A. Gumbert)

Wednesday, July 24 - 10:15AM-1:15PM
SESSION 329

Time	Paper #	Title/Authors
		Introduction
10:15AM		Edge-of-field and watershed scale transport of phosphorus in tile drainage discharge Kevin King, USDA-ARS, Columbus, OH (K. King, N.R. Fausey)
10:20AM	131609396	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)
10:35AM	131619207	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)
10:50AM	131620637	Break
11:05AM		Performance Evaluation of Surface Inlet Designs Timothy J. Rendall, University of Illinois, Urbana, IL (T.J. Rendall, R.A. Cooke)
11:15AM	131610774	Effect of tile drain depth and spacing on nitrogen losses under corn and soybean rotation Chin Tan, GPCRC, AAFC, Harrow, ON, Canada (C. Tan, T. Zhang)
11:30AM	131596042	The water balance of tile drained and subirrigated fields Chandra Madramootoo, McGill University, Ste Anne de Bellevue, QC, Canada (C. Madramootoo)
11:45AM	131622125	

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 330

Time	Paper #	Title/Authors
		Introduction
10:15AM		Impact of Rye Cover Crop on Nitrate-Nitrogen Concentrations in Subsurface Drainage Matthew J. Helmers, Iowa State University, Ames, IA (M.J. Helmers, X. Zhou, C. Pederson)
10:20AM	131594295	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)
10:35AM	131620977	



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-24
Moderator: TBA
LOCATION: EMPIRE A-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 10:15AM | | Introduction |
| 10:20AM | 131618797 | Improvement of Aquifer Vulnerability Assessment Using DRASTIC (ver. 2013)
Won Seok Jang, Purdue University, West Lafayette, IN (W. Jang, B. Engel, L. Theller) |
| 10:35AM | 131620779 | Use of Pedotransfer functions to Create Drainmod and Sisdrena Soil Input Files
Jarbas H. Miranda, ESALQ/USP, Piracicaba, Brazil (J.H. Miranda, R.A. Cooke, S.N. Duarte, M.T. van Genuchten) |

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
LOCATION: EMPIRE B-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|---|
| 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

- | Time | Paper # | Title/Authors |
|---------|---------|---------------------|
| 10:15AM | | Introduction |

- | | | |
|---------|-----------|---|
| 10:20AM | 131612287 | Automatic Creep Feeder Based on RFID Technology
Yeyin Shi, Oklahoma State University, Stillwater, OK (Y. Shi, N. Wang, C. Richards, D. Tilley) |
| 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 | 131620654 | 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 | 131619339 | Agricultural products traceability system with autonomous multiple enterprises management supported
Jiaoyue Pu, Northwest A&F University, Yangling, China (J. Pu, H. Zhang) |

Wednesday, July 24 - 10:15AM-12:45PM SESSION 334

DIELECTRIC SENSING AND APPLICATIONS IN FOOD AND AGRICULTURE - Sponsored by IET-348
Moderator: Samir Trabelsi, USDA ARS, Athens, GA
LOCATION: CHOUTEAU A-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 10:15AM | | Introduction |
| 10:20AM | 131588801 | Dielectric properties of grain and seed and their usefulness in sensing physical properties
Stuart O. Nelson, U. S. Department of Agriculture, Athens, GA (S.O. Nelson, S. Trabelsi) |
| 10:35AM | 131618472 | Engineering Considerations for Dielectric On-Line Grain Moisture Measurement
David B. Funk, USDA-GIPSA-TSD, Kansas City, MO (D.B. Funk, B. Gillay, S.R. Burton, Z. Gillay) |
| 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 | | Break |
| 11:15AM | 131620870 | Microwave Moisture Meter for In-Shell Almonds
Stuart O. Nelson, ARS-USDA, Athens, GA (S.O. Nelson, S. Trabelsi) |
| 11:30AM | 131620126 | 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 335

AIR QUALITY - MEASUREMENT AND MITIGATION OF POLLUTANTS FROM LIVESTOCK AND POULTRY AREA SOURCES - PART 2 - Sponsored by SE-305, SE-412
Moderator: Catherine M. Nash, USDA NRCS, Temple, TX
LOCATION: CHOUTEAU B-SHERATON

- | Time | Paper # | Title/Authors |
|---------|-----------|--|
| 10:15AM | | Introduction |
| 10:20AM | 131594612 | Effects of Bedding and Feeding High Crude Protein on Greenhouse Gas Emissions from a Feedlot Pen Surface
Shafiqur Rahman, North Dakota State University, Fargo, ND (S. Rahman, M.S. Borhan, D. Gautam, C. Engel, V. Anderson) |
| 10:35AM | 131619684 | Moisture level and temperature effect on VOC emission characteristics from three levels of manure accumulation on feedlot surfaces
Bryan Woodbury, USDA-ARS, Clay Center, NE
PRESENTER: John Gilley (B. Woodbury, J. Gilley, R. Eigenberg, M.J. Spiehs) |
| 10:50AM | 131594700 | Inverse Dispersion Modeling of Bioaerosol Emissions from Manure Application Sites
Michael Jahne, Clarkson University, Potsdam, NY (M. Jahne, S. Rogers, K. Lopez, S. Kim, S. Grimberg, T. Holsen) |



Technical Sessions



11:05AM 131618548 **Measuring Airborne Microorganisms and Dust Associated with Livestock Production**
Yang Zhao, Iowa State University, Ames, IA (Y. Zhao, A. Aarnink)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 336

ANIMAL HOUSING EVALUATION AND ENVIRONMENTAL CONTROL - PART 2 -
Moderator: Brian D. Luck, Mississippi State Univ, Starkville, MS
LOCATION: CHICAGO B-SHERATON

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131587726	Heat and Moisture Production Rates of a Modern U.S. Swine Breeding-Gestation-Farrowing Facility John Stinn, Iowa State University, Ames, IA (J. Stinn, H. Xin)
10:35AM	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. Radcliffe, B. Richert)
10:50AM	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 Yi Liang, University of Arkansas, Fayetteville, AR (Y. Liang, R. Bautista, T.A. Costello)
11:20AM		Break
11:30AM	131618475	Design and validation of a calibrated orifice meter for sub-500 liter per minute flow rate applications Brett C. Ramirez, University of Illinois at Urbana-Champaign, Urbana, IL (B.C. Ramirez, G. Maia, A.R. Green, D.W. Shike, R. Gates, L.F. Rodriguez)
11:45AM	131619651	Sampling Frequency Selection and Diurnal Patterns of Methane Production from Beef Cattle Yi Sun, University of Illinois at Urbana Champaign, Champaign, IL (Y. Sun, G. Maia, A.R. Green, B.C. Ramirez, L.F. Rodriguez, D.W. Shike, R. Gates)
12:00PM	131620099	Water temperature and spraying interval may affect the cooling effect of the sprinkler system in dairy farm Zhihui 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)
12:15PM	131619682	Overview and Application of a Metabolic Chamber for Quantification of Greenhouse Gas Generation from Enteric Fermentation Guilherme D. Maia, University of Illinois at Urbana Champaign, Urbana, IL (G.D. Maia, A.R. Green, B.C. Ramirez, Y. Sun, J. Segers, D.W. Shike, L.F. Rodriguez, R. Gates)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 337

GREENHOUSE AND NURSERY TECHNOLOGY APPLICATIONS - Sponsored by SE-303
Moderator: Murat Kacira, University of Arizona, Tucson, AZ
LOCATION: CHICAGO C-SHERATON

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131577065	The comparison of comfort indexes for the subtropical protected culture Chiachung Chen, National ChungHsing University, Taichung, Taiwan (C. Chen)
10:35AM	131593098	Building a finite element model for a natural ventilation greenhouse Jorge A. Díaz, McGill University, Sainte-Anne-de-Bellevue, QC, Canada (J.A. Díaz, G. Clark, M. Lefrud)

10:50AM 131577923 **Biomass Combustion for Greenhouse Carbon Dioxide Enrichment**
Yves Roy, McGill University, Montreal, QC, Canada (Y. Roy, M. Lefrud, F. Filion, J. Bouchard, Q. Nguyen, L. Dion, A. Glover)

11:05AM 131620031

Autonomous multi-sensor and web-based decision support for crop diagnostics in greenhouse
Murat Kacira, University of Arizona, Tucson, AZ (M. Kacira, D. Story, J. Yoon, L. An, A. Akoglu)

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)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 338

DESIGN, ANALYSIS, TESTING AND ASSEMBLY OF STRUCTURES - Sponsored by SE-20, SE-20/4, FPE-702, SE-07/1
Moderator: David R. Bohnhoff, Univ of Wisconsin, Madison, WI

LOCATION: PERSHING SOUTH-WESTIN

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131578832	The Design and Fabrication of a Rotatable Guarded Hot Box (RGHB) Capable of Static Pressure Application Andrew J. Holstein, University of Wisconsin- Madison, Madison, WI (A.J. Holstein, D.R. Bohnhoff)
10:35AM	131594695	Design of a simple heat recovery ventilator for agricultural buildings David R. Bohnhoff, UW-Madison, Madison, WI (D.R. Bohnhoff, J. Styx)
10:50AM	131551475	Insulated Wood Pier Foundation for Hoop Houses David R. Bohnhoff, University of Wisconsin-Madison, Madison, WI (D.R. Bohnhoff)
11:05AM	131620162	Modifications and Extensions to Design Specifications for Mechanically-Laminated Wood Assemblies David R. Bohnhoff, University of Wisconsin-Madison, Madison, WI (D.R. Bohnhoff)
11:20AM		Break
11:30AM	131554865	Design, Construction and Operation of a Demonstration Rainwater Harvesting System for Greenhouse Irrigation at McGill University, Canada Sadman Islam, McGill University, Montreal, QC, Canada (S. Islam, M. Lefrud)
11:45AM	131620477	Methodology for Determination of Body Mass Gain of Broilers in Commercial Aviaries via Digital Image Analysis Cecilia D. Souza, Federal University of Vicosa, Vicosa, Brazil (C.D. Souza, C. Mogami, I.F. Ferreira Tinoco, F. Pinto, K. Inoue, F. Leite)
12:00PM	131619063	Risk Analysis of the Water Control Structures in Agricultural Fields Vahid Rahmani, Kansas State University, Manhattan, KS (V. Rahmani, S.L. Hutchinson, A. Anandhi, J.K. Koelliker, J. Hutchinson, J.A. Harrington Jr.)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 339

HEAT AND POWER GENERATION FROM RENEWABLE ENERGY - Sponsored by T-11, FPE-709, SE-414
Moderator: Sergio C. Capareda, Texas A&M University, College Station, TX

LOCATION: PERSHING EAST-WESTIN

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131577649	Microbial fuel cells treating high strength swine wastewater Hongjian Lin, University of Minnesota, St Paul, MN (H. Lin, X. Wu, J. Zhu)



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. Ryals)
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	131713245	Separation of Particulate Matter Being Conveyed in High Temperature Gas Streams Daniel R. Luehrs, Texas A&M Univ, College Station, TX (D.R. Luehrs, C.B. Parnell, R.O. McGee)
11:45AM	131713248	Development of an Average Particle Distance Model to Predict the MEC's for Explosable Dusts Balaji Ganesan, Texas A&M Univ, College Station, TX (B. Ganesan, C.B. Parnell, R.O. McGee)
12:00PM	131713235	Comparison of Conventional and Advanced Solar PV Collectors for Power Generation David Lacey, Texas A&M Univ, College Station, TX (D. Lacey, S.C. Capareda)
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)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 340

OCCUPATIONAL SAFETY & HEALTH WITHIN BIOMASS SYSTEMS AND AGRICULTURAL CONFINED SPACES -

Moderator: Dee Jepsen, Ohio State Univ, Columbus, OH
LOCATION: PERSHING WEST-WESTIN

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131620568	A Technical Review on Safety in On-Farm Biomass Production and Storage Systems: Status and Industry Needs Aaron M. Yoder, The Pennsylvania State University, University Park, PA (A.M. Yoder, D.J. Murphy, A.F. Dehart)
10:35AM	131570935	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)

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

Moderator: Kurt A. Rosentrater, Iowa State University, Ames, IA

LOCATION: PENN VALLEY-WESTIN

Time	Paper #	Title/Authors
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)

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: Virendra 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 Medellin, Medellin, Colombia (J. Vasco Correa, A.D. Zapata Zapata)
11:20AM		Break
11:30PM	131590979	High Static Pressure and Heat Assisted Milling for Preparing Superfine Bone Particles Yin Zhang, University of California, Davis, CA (Y. Zhang, W. Wang, Z. Pan)
11:45PM	131668436	Thermal and Physiochemical Properties of Waste Animal Fats Peter Adewale, McGill University, Montreal, QC, Canada (P. Adewale, M.O. Ngadi)
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	131593819	Some physical and nutritional properties of Leymus chinensis (Trin.) Tzvel. seeds Yang Gao, China Agricultural University, Beijing, China (Y. Gao)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 342

ADVANCED AND DROP-IN BIOFUELS PRODUCTION - BIOCHEMICAL & THERMOCHEMICAL APPROACH - Sponsored by FPE-709, T-11

Moderator: Ali B. Koc, University of Missouri, Columbia, MO; Ali B. Koc, University of Missouri, Columbia, MO; Bo Liu, Columbia, MO

LOCATION: SHAWNEE

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	131617776	Comparison of syngas fermentation in trickle bed, continuously stirred tank and hollow fiber membrane reactors 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)
10:35AM	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, J. Gao, J.R. Phillips, M.R. Wilkins, R.L. Huhnke)
11:05AM		Break
10:50AM	131595946	Simulation of natural gas co-firing with producer gas mixtures using Aspen Plus Krushna N. Patil, Oklahoma State University, Stillwater, OK PRESENTER: Prakash Bhoi (K.N. Patil, D. Iyer, P. Bhoi, R.L. Huhnke)
11:15AM	131618062	Biochar-based and mixed-metal oxide catalysts for simultaneous removal of toluene (model tar), NH3, and H2S, from biomass-generated producer gas Pushpak Bhandari, Oklahoma State University, Stillwater, OK (P. Bhandari, A. Kumar, R.L. Huhnke)
11:30AM	131582166	Investigation of oil extraction from non-food sunflower seeds and meats for future jet fuel production Xianhui Zhao, South Dakota State University, Brookings, SD (X. Zhao, L. Wei, J. Julson, C. Shi, W. Qu)



Technical Sessions



Wednesday, July 24 - 10:15AM-12:45PM
SESSION 343

Time	Paper #	Title/Authors
		FOOD SAFETY ENGINEERING: PART 2 - Sponsored by FPE-703 Moderator: Litha Sivanandan, West Virginia University, Morgantown, WV; Oliver K. Schluter, Leibniz Institute for Agricultural Eng, Potsdam, Germany LOCATION: MISSION-WESTIN
		Introduction
10:15AM		
10:20AM	131620941	Rapid Detection of Foodborne Pathogens within Meat Utilizing a Smartphone Biosensor Pei-Shih Liang, University of Arizona, Tucson, AZ (P. Liang, J. Yoon)
10:35AM	131620955	Paper Microfluidics Detection of Salmonella Using a Smartphone Pei-Shih Liang, University of Arizona, Tucson, AZ (P. Liang, J. Yoon, T. Park, W. Li)
10:50AM	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	131594753	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	131595773	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 cinnamaldehyde by nanoencapsulation for active food packaging Ruplal 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

Time	Paper #	Title/Authors
		DRYING, HANDLING, AND STORAGE OF CROPS FOR FOOD AND ENERGY - PART 2 - Sponsored by FPE-702, FPE-712 Moderator: Jason K. Ward, Mississippi State Univ, Mississippi State, MS LOCATION: LIBERTY-WESTIN
		Introduction
10:15AM		
10:20AM	131620644	Evaluation of an Externally Heated Auger Drying System Samy Sadaka, University of Arkansas, Division of Agriculture, Little Rock, AR (S. Sadaka)
10:35AM	131621434	Modeling the effect of turn-flow operation during cross-flow drying of rough rice Johnselvakumar Lawrence, IntelliAir, Archie, MO (J. Lawrence, T.J. Siebenmorgen)
10:50AM	131621335	Field Measurements for Food Grain Packing Factors in US Rumela Bhadra, Kansas State University, Manhattan, KS (R. Bhadra, J.M. Boac, M. Casada, S. Thompson, R. Maghirang, M. Montross, S. McNeill)
11:05AM	131620073	Pipeline Hydro-Transportation of Agricultural Biomass: An Experimental Study Mahdi Vaezi, University of Alberta, Edmonton, AB, Canada (M. Vaezi, A. Kumar)

11:20AM
11:30AM 131620707

Break
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. Haagensohn, D.P. Wiesenborn)

11:45AM 131631155

Shelf-Life Improvement of Distillers Wet Grains with Solubles (DWGS) through Ionization

Janie D. McClurkin, Purdue University, West Lafayette, IN
PRESENTER: Klein Ileleji (J.D. McClurkin)

12:00PM 131619320

Mathematical modeling and polysaccharide content of ganoderma lucidum by hot air impingement drying

Jun-Wen Bai, China Agricultural University, Beijing, China
PRESENTER: Zhang Lou (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)

Wednesday, July 24 - 10:15AM-12:45PM
SESSION 345

Time	Paper #	Title/Authors
		APPLICATION OF ECOLOGICAL ENGINEERING - Sponsored by BE-22 Moderator: Gregory S. Osborn, Univ of Arkansas, Fayetteville, AR LOCATION: AMBASSADORS-WESTIN
		Introduction
10:15AM		
10:20AM	131597797	Energy System Diagrams as biomimetic tools: ecosystem's energy patterns for optimization of buildings' energy performance Mercedes Garcia-Holguera, McGill University, Montreal, QC, Canada (M. Garcia-Holguera, G. Clark, A. Sprecher, S. Gaskin)
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. Prasher)
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		Break
11:15AM	131620951	Are Concentration-Discharge Relations Influenced by Water Sample Collection Methods? William M. Welch, University of Arkansas, Fayetteville, AR (W.M. Welch, B. Haggard)
11:30AM	131619814	Compostability of Protein and Starch-Based Polymers Sahar Fazeli, McGill University, Montreal, QC, Canada (S. Fazeli, G. Clark)





Technical Sessions



Wednesday, July 24 - 10:15AM-12:45PM
SESSION 346

Time	Paper #	Title/Authors	Time	Paper #	Title/Authors
		MONITORING AND MODELING OF PATHOGENS AND PATHOGEN INDICATORS - Sponsored by BE-22, SW-224 Moderator: Leigh-Anne Krometis, Virginia Tech, Blacksburg, VA LOCATION: CONGRESSIONAL-WESTIN	10:50AM	131621949	Distributed Gene-Based Agricultural Diagnostics: Engineering an Inexpensive Handheld System for Field Use Daniel M. Jenkins, University of Hawaii, Honolulu, HI (D.M. Jenkins, R. Kubota, M. Keremane, W. Mahaffee)
10:15AM		Introduction	11:05AM	131620911	Microfluidic Wound Model for Investigating Efficacy of Antimicrobial Agents Against Staphylococcus Pseudintermedius Biofilms Suresh R. Neethirajan, University of Guelph, Guelph, ON, Canada (S.R. Neethirajan, J. Terry)
10:20AM	131591334	Thermal Treatment of Huanglongbing Infected Trees using In-Field Solar Heating System Lav Khot, University of Florida, Lake Alfred, FL (L. Khot, S.E. Jones, P. Trivedi, R. Ehsani, N. Wang, J. Reyes-De-Corcuera)	11:20AM		Break
			11:30AM	131592856	Parameters Associated with Fecal Indicator Bacteria Concentrations in the Water Column and Bottom Sediments of Stroubles Creek, Virginia, USA Hehuan Liao, Virginia Tech, Blacksburg, VA (H. Liao, L. Krometis, C. Hession, K. Kline, L. House, B. Badgely)
10:35AM	131620898	Novel Antimicrobial Combinations against Methicillin-resistant Staphylococcus pseudintermedius Biofilms using Microfluidic Platforms Suresh R. Neethirajan, University of Guelph, Guelph, ON, Canada (S.R. Neethirajan, M. DiCicco)	12:00PM	131620318	Assessing relationships between in-stream water, sediment, and bank soil E. coli levels during storm events Michelle L. Soupir, Iowa State University, Ames, IA (M.L. Soupir, P. Pandey, R. Purvis, J. Litwiller)

à la
M  **ntréal**



ASABE/CSBE-SCGR
Annual International Meeting
Montreal QC Canada
July 13-16, 2014



Socials & Hosted Receptions



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



Socials & Hosted Receptions



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





Socials & Hosted Receptions



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: 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.

SILENT AUCTION

Place your bids now!

Auction closes 3:00PM Wednesday

KANSAS STATE UNIVERSITY ALUMNI RECEPTION

Monday, July 22 – 7:00PM-9:00PM

Location: Signboard I - 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 I - 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



Socials & Hosted Receptions



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

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 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

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



Socials & Hosted Receptions



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

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

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



PRESENTS



International Symposium

2014 Symposium on
“Evapotranspiration: Challenges
in Measurement and
Modeling from Leaf to the
Landscape Scale and Beyond”

April 7-11, 2014
Raleigh, North Carolina USA



Tours



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.

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 down town 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

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.

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. 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

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

SILENT AUCTION

Place your bids now!

Auction closes 3:00PM Wednesday



Tours



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!



Committees to Convene



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 Referred 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 Prgm & 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



Committees to Convene



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-433 Electrical Utilization & Energy Apps**
TBA
- IET-433/1 ASABE-IES Ag Lighting Group**
MONDAY, 12:15pm-2:15pm – Van Horn C-Sheraton
- IET-433/2 Electric Fence Controller**
TBA
- IET-433/3 Fan Testing**
TBA
- IET-433/4 Standby Electric Power**
TBA
- IET-435 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
- PM-23/14 Ag Mach. - Sym., Disp & Man & US TAG ISO/TC23/SC14**
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 Comm 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 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 – Mayors-Westin
- PM-22 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 West-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, 8:00am-9:15am – Pershing North-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 – Pershing South-Westin
- 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, 3:30pm-5:30pm – Pershing North-Westin
- SW-21 Hydrology Group**
TUESDAY, 8:00am-9:15am – 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 Geomrphlgy, Strmbnk 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 Sprayer Boom Height
TUESDAY, 8:00am-9:30am – Mayors-Westin

Young Professionals Community
TUESDAY, 5:15pm-7:00pm – Van Horn A-Sheraton

ROOM NAME	LOCATION	LEVEL
Ambassadors	Westin	Fifth Floor
Benton A	Sheraton	Mezzanine Level
Benton B	Sheraton	Mezzanine Level
Benton's Prime	Westin	Top Floor
Boardroom	Sheraton	Ballroom Level
Century Ballroom	Westin	Ballroom Level
Chicago A	Sheraton	Ballroom Level
Chicago B	Sheraton	Ballroom Level
Chicago C	Sheraton	Ballroom Level
Chouteau A	Sheraton	Mezzanine Level
Chouteau B	Sheraton	Mezzanine Level
Congressional	Westin	Fifth Floor
Empire A	Sheraton	Mezzanine Level
Empire B	Sheraton	Mezzanine Level
Empire C	Sheraton	Mezzanine Level
Fremont	Sheraton	Mezzanine Level
Gillham Hall	Sheraton	Lobby Level
Governors	Westin	Fifth Floor
Liberty	Westin	Ballroom Level
Mayors	Westin	Fifth Floor
Mission	Westin	Ballroom Level
Northrop	Sheraton	Mezzanine Level
Penn Valley	Westin	Ballroom Level
Peppercorn Duck Club	Sheraton	Mezzanine Level
Pershing East	Westin	Ballroom Level
Pershing North	Westin	Ballroom Level
Pershing South	Westin	Ballroom Level
Pershing West	Westin	Ballroom Level
Regents	Westin	Fifth Floor
Roanoke	Westin	Ballroom Level
Senators	Westin	Fifth Floor
Shawnee	Westin	Ballroom Level
Sheraton Grand Ballroom	Sheraton	Ballroom Level
Signboard 1	Westin	Lobby Level
Signboard 2	Westin	Lobby Level
Van Horn A	Sheraton	Mezzanine Level
Van Horn B	Sheraton	Mezzanine Level
Van Horn C	Sheraton	Mezzanine Level