



(Updated 6-6-2017)

The following is a description of all events, tours, socials, and invited technical sessions.

SATURDAY, JULY 15

E#10

FLOAT THE SPOKANE RIVER

Saturday, July 15 – 1:30PM-5:00PM

Just minutes from downtown Spokane you'll meet your professional rafting guides, board large rafts and take off on a lazy river float through the undeveloped Riverside State Park and basalt cliffs. Watch for osprey and eagles along the way. If you want to get wet, we'll pull into an eddy to swim or just relax.

Includes: Transfers, rafting trip (2 ½ hours) with professional rafting company and all equipment needed.

COST: \$74.00 Adult

\$67.00 Youth (12 years & Under minimum age 5 yrs)

E#20

YPC DINNER SOCIAL

Saturday, July 15 - 7:00PM-9:00PM

What better way to kick off AIM than with the Young Professional Community's Social? Come join us for dinner at the Steam Plant in downtown Spokane, a beautiful old steam plant that has been renovated into a restaurant and brewery. The social begins at 7pm. Meet at the ASABE registration desk and we will all walk over together! All undergraduate, graduate students, and members under 35 years old are invited to this event!

COST: Preregistration is required

SUNDAY, JULY 16

E# 1

YPC 5K/RUN/1MILE WALK

Sunday, July 16 - 7:00AM-8:30AM

Join us for a beautiful 5k run or 1mile walk along the Spokane River. That is 2,000 steps if your tracking that. The run goes out one side of the river and returns on the other side. We will meet at the registration desk at 7 am to walk to the amphitheater in River Front Park. The running/walking will start at 7:30am

from near the amphitheater. Every participant will receive a piece of ASABE/YPC swag. We look forward to you joining in on the fun and fitness.
COST: \$20.00

E# 2

GALE HOLLOWAY MEMORIAL GOLF OUTING

Sunday, July 16 - 7:30AM-12:00PM

The golf outing will be held at the Sun Dance Golf Club. This course is considered one of Spokane area's hidden gems of golf courses. Sun Dance is known for its tall evergreen trees lining every hole as well as its small, but phenomenally maintained greens. The trees and small greens make Sun Dance great for beginners and the avid golfer as it helps shape shots and improves a player's accuracy. The course is located approximately 9 miles from the hotel (20 minutes). The cost will again be \$110 this year inclusive of green fees, cart rental and lunch. Club rental is not included.

COST: \$110.00

E# 3

PROFESSIONAL ENGINEERING EXAM QUESTION WRITING SESSION

Sunday, July 16 - 8:00AM-5:00PM

Licensed Professional Engineers are welcome to participate in a day-long effort to write and evaluate agricultural and biological engineering Professional Examination test questions. Persons attending must be licensed professional engineers and provide their PE number(s) to participate. Preregistration is required.

COST: Preregistration is required

ASABE SILENT AUCTION

Sunday thru Tuesday

Items and auction activities change daily. Don't miss the fun! Every penny raised promotes student scholarships and competitions, ASABE awards, and Society development. Come and support YOUR Foundation!

CPD #1

NEAR-INFRARED SPECTROSCOPY - PRINCIPLES FOR SUCCESSFUL RESEARCH AND APPLICATIONS DEVELOPMENT

Sunday, July 16 - 8:00AM-5:00PM

Instructor: David B. Funk, Ph.D., D.Sc. (hc)

Sponsored by ITSC-348

LEVEL OF DIFFICULTY: Intermediate

TARGET AUDIENCE: Pre-professionals, graduate students, academic researchers, and industry engineers and scientists

LEARNING OBJECTIVES: Overview of molecular spectroscopy, multivariate calibration methods, NIRS instrumentation

BENEFITS: Gain an intuitive understanding of key concepts involved in NIRS research and applications development.

COST: \$150.00

CPD #2

DESIGNING AGRICULTURAL APPLICATIONS FOR HANDHELD MOBILE DEVICES

Sunday, July 16 - 9:00AM-12:00PM

Instructor(s): Bo Liu & Mario Mondaca

Sponsored by ITSC-254

LEVEL OF DIFFICULTY: Entry Level

TARGET AUDIENCE: Engineers and researchers interested in starting to develop App for handheld mobile devices

LEARNING OBJECTIVES: (a) Understand the basic App development process (b) Become familiar with the tools required for App development (c) Develop a simple App

COST: \$113.00

CPD #3

BANKFULL NATURAL CHANNEL DESIGN MODEL

Sunday, July 16 – 9:00AM-12:00PM

Instructor(s): Brian Belcher, P.h.D., P.E.

LEVEL OF DIFFICULTY: Intermediate

TARGET AUDIENCE: Civil Engineers

LEARNING OBJECTIVES: Fundamentals of stream restoration design

BENEFITS: A mathematical model useful for creating digital terrains that may be used for channel stability analysis, bank erosion estimating, meander migration modeling, computational fluid dynamic models, habit analysis, and civil site plans used for construction projects.

COST: \$73.00

CPD #9

ONLINE TEACHING AND ACTIVE LEARNING: FLIPPING THE CLASSROOM

Sunday, July 16 – 9:00AM-12:00PM

Instructor(s): Prof. Patrizia Busato, Prof. Remigio Berruto, Prof. Fedro Zazueta

Sponsored by Education Community

LEVEL OF DIFFICULTY: Entry Level

TARGET AUDIENCE: Individuals with teaching and extension education responsibilities including, faculty, lecturers and teaching assistants interested in acquiring knowledge and skills on active learning and flipped classroom instruction.

LEARNING OBJECTIVES: Describe flipped classroom principles and pedagogy; Identify required resources for successful delivery of a course in a flipped classroom format; Develop foundational skills to develop online and face-to-face materials for flipped classroom delivery.

BENEFITS: Implementing active learning pedagogies in engineering education has been shown to improve learning outcomes and higher levels of student satisfaction.

COST: \$80.00

CPD #4

APPLIED BIOSENSORS: OPTICAL AND ELECTROCHEMICAL TRANSDUCTION

Sunday, July 16 - 10:00AM-5:00PM

Instructor(s): Daniel Jenkins & José I Reyes-de-Corcuera

Sponsored by ITSC-230

LEVEL OF DIFFICULTY: Intermediate

LEARNING OBJECTIVES: This workshop is designed to provide participants a hands-on introduction to emerging technologies that can be used for agricultural and biological diagnostics in the field. We will briefly review the fundamental principles of "biosensors" from sample collection/preparation and molecular recognition to signal transduction. We will focus special attention on examples of optical and electrochemical techniques for detecting specific molecular interactions. A significant portion of the workshop experience will be devoted to the preparation and application of diagnostic devices to analyze

real field samples, including DNA-based technologies to detect the Citrus Greening organism in captured psyllid tissue, and an immersible sensor to monitor glucose.

BENEFITS: At the completion of the workshop, participants will be expected to: understand different classes of molecules (i.e. nucleic acids/ aptamers, proteins/ enzymes/ antibodies), that can be used for biological detection, and how they are prepared and isolated; understand the variety of physical approaches available to detect specific molecular interactions; have a practical understanding of a variety of electrochemical methods for device synthesis and analysis (i.e. potentiometric and amperometric methods, and electrochemical impedancce spectroscopy); demonstrate the basic laboratory skills for sample and device preparation/ fabrication, and; understand and use a portable instrument to detect specific nucleic acid amplification events.

COST: \$137.00

ASABE BOARD OF TRUSTEES & COUNCILS

Sunday, July 16 - 10:30AM-3:30PM

ASABE Board of Trustees will be meeting from 10:30AM-1:30PM. The Publications, Meetings, Standards, Membership Councils will meet from 1:30PM-3:30PM

AIM MEETING ORIENTATION

Sunday, July 16 - 11:00AM-11:30AM

Never been to an Annual International Meeting? Has it been a while since your last meeting? Are you looking to get more out of your meeting this year? If you answered yes to any of these, come to this YPC and IPC sponsored event! Industry and academia representatives will share their AIM experiences, meeting tips, and how staying involved with ASABE has furthered their careers!

CPD #6

INTRODUCTION TO SPECTROSCOPIC DATA ANALYSIS USING R PROGRAMMING

Sunday, July 16 - 1:00PM-4:00PM

Instructor: Colm Everard

LEVEL OF DIFFICULTY: Entry Level

TARGET AUDIENCE: Engineers, scientists and students who collect spectroscopic data for applied research. This course was developed to introduce attendees to the open source R programming software for carrying out data analytics on spectroscopic data.

LEARNING OBJECTIVES: The attendees will be shown how to carry out important spectroscopic data analysis functions using R programming. Examples will be worked through, and attendees will be encourage to run the course's code on their own laptops. The course overview is as follows: Introduce R programming; Overview and installation of packages for spectroscopic data analysis; Introduce useful functions to allow attendees develop an understanding of the software; Importing spectral data: Inspecting the imported data; Preforming commonly used pre-processing techniques on spectral data; Principal component analysis; Partial least squares regression; Formatting and exporting graphics.

BENEFITS: The attendees will gain an understanding on how to carry out data analysis of spectroscopic data using R programming. The attendees will be presented with R code that will allow them carry out spectroscopic data analysis.

COST: \$90.00

Tour #2

SPOKANE – PAST AND PRESENT: A CITY TOUR

Sunday, July 16 - 1:00PM-4:00PM

Discover the rich history, historic homes and top attractions of Spokane. Travel to Riverfront Park, the former Expo 74' site. Learn about the Native Americans that first came here to camp near the Spokane

Falls, stop at Huntington Park to view the falls and see interpretive signs and art depicting Native American culture and hydroelectric history. Touring through downtown, your guide will point out the unique architecture features of buildings built after the Great Fire of 1889. Travel to historic Browne's Addition, where in the late 1800's, the rich came to build their mansions. Your guide will engage you in stories about the people who built these mansions and how they made their fortunes. Next, travel up "the Hill" to overlook the city and see more beautiful mansions. Tour Manito Park, designed by the famed Olmsted Brothers. Stroll through the French Renaissance, Duncan Gardens, Gaiser Conservatory, formal Rose Gardens and Japanese Gardens. Trip Advisor's Travelers Choice Awards rated Manito Park "One of the Top 25 Parks in the US".

Tour Includes: Deluxe motor coach transportation, professional guide and all stops.

COST: \$35.00 per person

CPD #7

EXCEL-INTRO TO VBA AND AUTOMATION

Sunday, July 16 - 2:00PM-4:00PM

Instructor(s): Amy Kaleita PhD

Sponsored by YPC

LEARNING OBJECTIVES: This course will introduce professionals to tools in Excel for automating task and using VBA within Excel

COST: \$30.00

CPD #8

DIELECTRIC SENSING APPLICATIONS IN FOOD AND AGRICULTURE

Sunday, July 16 – 2:00PM-5:00PM

Instructor(s): Samir Trabelsi & Micah A. Lewis

Sponsored by ITSC-348

LEVEL OF DIFFICULTY: Entry Level

TARGET AUDIENCE: Food Scientists and Biological and Agricultural Engineers

LEARNING OBJECTIVES: The workshop will cover the basics of radio-frequency dielectric properties and measurement techniques and their applications in food and agriculture. The attendees will learn how to select the most suitable measurement technique for a given application and how to identify correlations between measured dielectric properties and target physical properties. Examples of nondestructive sensing of bulk density and moisture content in grain, seed, and nuts from measurements of their dielectric properties at microwave frequencies will be given in static and dynamic situations. Also, use of microwave sensing technology for real-time monitoring of a given process will be presented for in-wagon or in-trailer peanut drying.

BENEFITS: The attendees will acquire a better understanding of the interaction between electromagnetic waves and water-containing materials and will gain expertise in measurement of the dielectric properties of food and agricultural products over a broad radio-frequency range. Also, the attendees will be familiarized with the automation of measurements and the integration of several sensors to monitor simultaneously a number of variables. The knowledge gained will be critical in the experimental design of microwave heating and sensing applications.

COST: \$170.00

FOUNTAIN WARS PRESENTATION JUDGING

Sunday, July 16 - 2:30PM-4:30PM

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.

UNDERGRADUATE POSTER SESSION

Sunday, July 16 - 3:00PM-4:30PM

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. Sign in 30 minutes prior to the competition.

COMMITTEE LEADERSHIP AND LEADERSHIP TRANSITION TRAINING

Sunday, July 16 - 3:30PM-4:30PM

A scheduled opportunity for both all committee leaders, regardless of experience, to receive updates on available resources and tools and to network with peers and ASABE Staff.

ALPHA EPSILON ANNUAL MEETING

Sunday, July 16 - 4:00PM-5:00PM

This is the 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 the door prizes.

ASABE WELCOME RECEPTION

Sunday, July 16 - 4:30PM-6:00PM

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 Spokane 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 16 - 6:30PM-10:00PM

Alumni and visiting professors of College of Biosystems Engineering and Food Science, Zhejiang University are invited to enjoy a reception at a local restaurant and catch up with old friends. Please send email to xwang2@illinois.edu by July 9th if you plan to attend.

E #4

WOMEN IN ASABE SPEED NETWORKING

Sunday, July 16 - 6:30PM-7:30PM

Would you like to make acquaintance with other women who participate in the annual meeting and perhaps share some of your same interest? This is the opportunity for you. You will be provided with suggested topics which will assist you in obtaining good information within a short period of time about other women attending this event. When the buzzer sounds you will move to another table to make another acquaintance. Preregistration is required but there is no registration fee to participate.

COST: Attendee – preregistration is required;

Mentor - preregistration is required

MONDAY, JULY 17

E# 5

PRAYER BREAKFAST

Monday, July 17 - 6:30AM-8:00AM

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 is required.

COST: \$15.00

E# 22

CORNELL FRIENDS, FAMILY AND ALUMNI BREAKFAST

Monday, July 17 - 6:30AM-8:00AM

An informal gathering of Cornell friends, family and alumni over coffee and continental breakfast. Alumni and past associates are encouraged to attend. Pre-registration is required.

COST: \$6.00

GUIDE TO PROFESSIONAL LICENSURE

Monday, July 17 - 7:00AM-8:00AM

Professional Licensure Information Session to be hosted by YPC and PEI. Panel of Professional Engineers will cover topics and answer questions regarding: Licensure process, requirements, timing, exam style, benefits, ASABE resources, exam prep tips and hints, and licensure renewal steps and requirements.

ASABE GENERAL SESSION / RECOGNITIONS / KEYNOTE SPEAKER

Monday, July 17 - 8:00AM-9:30AM

ASABE President Maynard Herron welcomes each of you to the 2017 ASABE Annual International Meeting. Our Keynote Speaker is Ambassador Kenneth M. Quinn (ret.), President, The World Food Prize Foundation.

CAREER FAIR

Monday, July 17 - 9:30AM-12:00PM

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 the 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 number located near the ASABE registration desk for review. Prospective employees are invited to seek out employers of interest and exchange information.

Technical Session #118

NRES DISTINGUISHED LECTURE SERIES – INVITED SPEAKERS

Monday, July 17 – 9:30AM-11:00PM

Sponsored by NRES

Moderator: Christopher Hay, Iowa Soybean Association, Ankeny, IA

9:30AM Introduction – Christopher Hay

9:35AM **Copula-Entropy Theory for Multivariate Stochastic Modeling in Water Engineering**

Vijay Singh, Texas A&M University, College Station, TX

10:00AM **Modernizing Surface Irrigation**

Eduardo Bautista, USDA ARS, Maricopa, AZ

10:25AM **Agricultural and Biological Engineering as a Critical Public Health Intervention**

Leigh Ann Krometis, Virginia Tech, Blacksburg, VA

Technical Session #119

PLANT, ANIMAL AND FACILITY SYSTEMS DISTINGUISHED LECTURE

Monday, July 17 – 9:30AM-12:00PM

Sponsored by PAFS

Moderator: Tim Shepherd, Iowa State Univ, Ames, IA

This session will host a series of invited presentations from Major Award Recipients, Fellow Inductees, and Superior Paper Award Winners from 2016. The format for this series differs from general technical session, providing invited speakers with the flexibility to deliver a presentation which highlights their views and vision of the past, present and/or future on a subject area relative to the PAFS Community and highlight the research and development of award winning research published with the *Transactions of ASABE* and *Applied Engineering in Agriculture*.

Technical Session #123

CURRENT TRENDS IN GRAIN DRYING AND STORAGE – INVITED PRESENTATIONS

Monday, July 17 – 9:30AM-12:00PM

Sponsored by PRS-702

Moderator: Johnselvakumar Lawrence, Kansas State Univ, Manhattan, KS

Increased capacities and speed grain movement are the current trends in grain drying and storage industries. Due to these trends, there are many challenges involved in managing grains including maintaining grain quality through the storage period. Many recent technological innovations developed and used in the management of grains. Each grain has its own unique challenges, particularly peanut, rice and oilseeds. Silo bag is a recent temporary storage option available for the industry. It has many advantages as well as challenges. Taking these challenges in account, USDA (United States Department of Agriculture) involved in many research projects finding new solutions for these challenges. The grain quality also affects the animal feed formulation as grain is one of the main ingredients. In this session, overall picture of recent trends in grain drying and storage management are analyzed and discussed.

9:30AM **Introduction**

9:35AM **Opportunities and Innovations in Drying and Storage of Grains and Oilseeds for Food Security**

Dr. Dirk E Maier, Iowa State Univ, Ames, IA

9:55AM **Challenges and Innovations in Peanut Drying, Storage, and Handling**

Dr. Chris Butts, USDA ARS, Dawson, GA

10:15AM **Grain Quality and Value Enhancement in Rice Breeding Postharvest Processing Research: Current Tools and Technologies Utilization**

Dr. Rusty Bautista, Ricetec, Alvin, TX

10:35AM **BREAK**

10:45AM **Current Trends and Research Needs in Management of Cereals Grains, Oilseeds and Pulses**

Dr. Digvir S. Jayas, Univ of Manitoba, Winnipeg, MB, Canada

- 11:05AM** **Impact of Recent Grain Storage and Handling Research at USDA-ARS Center for Grain and Animal Health Research**
Dr. Mark Casada, USDA ARS CGAHR, Manhattan, KS
- 11:25AM** **Technological Improvement in Grain Storage Using Silo Bags and Information and Communication Technologies (ICTs)**
Dr. Ricardo Bartosik, INTA, Balcarce, Argentina

WRITING A SUCCESSFUL WORLD FOOD PRIZE APPLICATION

Monday, July 17 – 9:45AM-10:45AM

LOCATION: Conference Theater

Moderator: Dr. Kenneth Quinn

Ambassador Kenneth Quinn, President of the World Food Prize will describe the nomination process, characteristics of successful nominations and encourage nominations of ASABE members. Originating in 1986, each year one honored person receives the World Food Prize and its \$250,000 cash prize and trophy for contributions in any field involved in the world food supply including, but not limited to: plant, animal and soil science; food science and technology; nutrition; rural development; marketing; food processing and packaging; water and the environment; natural resource conservation; physical infrastructure; transportation, storage and distribution; special or extraordinary feeding programs; social organization and poverty elimination; economics and finance; policy analysis; and public advocacy.

Technical Session #154

OPPORTUNITIES IN THE FOOD – ENERGY – WATER NEXUS – INVITED SPEAKERS

Monday, July 17 – 11:00AM-12:30PM

LOCATION: Conference Theater

Moderator: Rabi H Mohtar, Texas A&M University, College Station, TX

This session will include guest speakers / panelist to explore the water – energy – food system that ASABE has and will continue to have in understanding the nexus between these primary resources.

Panelist: Jim Jones, University of Florida, Gainesville, FL
 Kenneth Quinn, World Food Prize, Des Moines, IA
 John Verboncoeur, Michigan State University, East Lansing, MI
 Hongda Chen, USDA NIFA, Fairfax, VA

E# 6

SPOUSE/GUEST LUNCH

LUNCH AND WINE TASTING AT THE HISTORIC GLOVER MANSION

Monday, July 17 - 11:30AM-2:30PM

We will transport you for a short 10-minute ride to gather at the Glover Mansion, built in 1888 for James Glover, the father of Spokane. It is one of the finest examples of the work of famed architect Kirtland Cutter who also designed the Davenport Hotel. The interior features the original stained glass windows and intricately carved woodwork, with wood coming from 10 different areas of the world. During lunch, a wine expert will walk you through the wines selected to pair with three courses. After lunch, there will be guided tours of this 12,000 square-foot mansion.

Includes: Transportation with guide, a three-course plated lunch, wine presentation and three tastings.

COST: Included in the Spouse/Guest Registration;

Guest Fee: \$70.00 per person

BOYD-SCOTT GRADUATE RESEARCH AWARD

Monday, July 17 - 12:00PM-2:30PM

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 for the top three finalists in the M.S. and Ph.D. categories, which is held at the ASABE Annual International Meeting.

ROBOTICS COMPETITION POSTER SESSION

Monday, July 17 - 12:30PM-1:30PM

Teams will submit a display poster which details the function, design, and specification(s) of their robot(s). Posters must be submitted by Midnight on June 30. There will not be a separate check-in for robotics; Joseph Trotochaud will walk around during the poster session and take a role of the teams.

Tour # 3

LOCAL AGRICULTURE TOUR: FARMING IN THE PALOUSE HILLS OF EASTERN WASHINGTON

Monday, July 17 - 1:00PM-6:00PM

Join the YPC in exploring the farming practices and techniques of the Palouse Hills of Eastern Washington. See the unique crop varieties by visiting the farm of a local producer and seeing a processing facility.

COST: \$50.00

FOUNTAIN WARS COMPETITION

Monday, July 17 - 1:00PM-8:00PM

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 and Build: 1:00PM-5:00PM

Team test / Adjustment in Fountain and Competition: 5:00-8:00PM

Technical Session #142

EXPLANATORY TIME SERIES ANALYSIS IN NRES – INVITED PRESENTATIONS

Monday, July 17 – 2:30PM-5:00PM

Sponsored by NRES

Moderator(s): Rafael Muñoz-Carpena, University of Florida, Deb Sahoo, Woolpert

2:30PM “Introduction”. Dynamic Factor Analysis of Environmental Systems

Rafael Muñoz-Carpena, University Florida

2:45PM Diagnosing and Reconstructing Real-World Hydroclimatic Dynamics from Time Sequenced Data

Ray Huffaker, University of Florida

3:00PM Statistical and Machine Learning Methods Using Large Space-Time Data: Forecasting Urban Water Demand

Nikolay Bliznyuk, University of Florida

3:15PM A Novel Quantile Method Reveals Spatiotemporal Shifts in Phytoplankton Biomass Descriptors between Bloom and Non-Bloom Conditions in a Subtropical Estuary

Natalie Nelson, University of Florida

3:30PM Granger Causality Analysis of Vegetation Dynamics in the Southwestern Amazon

	Gerald Klarenberg, University of Florida
3:45PM	BREAK
3:55PM	Mosquito Dynamics with Time Series Analysis: 30 Years of Mosquito Data in the Chesapeake Bay Maryland (USA)
	Ismael Rodea-Palomares, University of Florida
4:10PM	Data-driven Analysis of Environmental NonCompliance: Distinguishing Between Systematic and Random Volatility in Treatment Wetland Performance
	Miles Medina, University of Florida
4:25PM	Dynamic Linear Models to Explore Time-Varying Sediment-Discharge Rating Curves
	Scott Steinschneider, Cornell University
4:40PM	Challenges to Water Quality Conservation Measures within Western Lake Erie Basin
	Lawrence Sekaluvu, Kansas State Univ
5:05PM	Variability of E. coli in Stream Bottom Sediments and the Implications for Sediment Sampling
	Sadia Salam, South Dakota State University
5:20PM	Effects of Watershed Characteristics on Temporal Trends of Dissolved Nutrients in Low-Gradient Agricultural Streams
	William Ford, University of Kentucky

Technical Session #151

AOCABFE AND NERCITA CHINA EXCHANGE FORUM – INVITED PRESENTATIONS

Monday, July 17 – 2:30PM-5:00PM

Moderator: Zhiming Qi, McGill University

Sponsored by E-2050

The AOCABEF & NERCITA China Exchange Forum's theme in this year is "Bridging ABE Programs in the World". Under this theme, we will be hosting invited speakers from China, U.S., and Canada to introduce their institutions, professionals, international collaboration, as well as policies and programs that support research staff and student exchange.

2:30PM	Canada-China: Past, Current and Future Vijaya Raghavan, President Canadian Society of Bioengineering, McGill University, Sainte-Anne-de-Bellevue, QC, Canada
2:50PM Problems	Sino-US Cooperation in Water Saving Technologies: Essential International Dr. Steven Evett, USDA ARS, (Representative to USDA-China Most Water Saving Technologies Flagship Project), Bushland, TX
3:10PM	Agricultural Engineering at Zhejiang University Songming Zhu, Dean of the Biosystems Engineering and Food Science Zhejiang University, Hangzhou, China
3:30PM	BREAK
3:50PM	US-China Partnerships: from Individuals to Professional Societies Mary Leigh Wolfe, Past President ASABE, Chair and Professor Biosystems Engineering Dept, Virginia Tech, Blacksburg, VA
4:10PM	Water Crisis in North China Plain and Collaboration Opportunities in Agricultural Water Saving and Environmental Restoration Yanjun Shen, Center for Agricultural Resources Research, Chinese Academy of Sciences, Shijiazhuang, China
4:30PM	IJABE Based on Open Access: Past, Present, and Prospect Yingkuan Wang, Director of Information Center, Chinese Academy of Agricultural Engineering, Beijing, China
4:50PM	Question and Discussion

Technical Session #155

EQUIPMENT FOR COMMERCIAL POST HARVEST PROCESSING OF BIOMASS – INVITED SPEAKER

Monday, July 17 – 2:30PM-5:00PM

Sponsored by ES

Moderator(s): Shahab Sokhansanj, Oak Ridge National Lab, Oak Ridge, TN

Quang Nguyen, Idaho National Lab, Idaho Falls, ID

How do we develop the equipment and technology to support an industry with the potential to account for 30% of US petroleum consumption? This session will explore some of the challenges and solutions to post harvest processing transport and storing one billion tons of biomass. The session will cover the 2016 Billion-Ton Report and look at how process equipment manufacturers (size reduction, drying, ad densification) are equipped to meet the projections of the report with conventional and advanced equipment.

ORDER OF THE ENGINEER INDUCTION CEREMONY

Monday, July 17 - 4:00pm-5:00pm

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 ROBOTICS STUDENT DESIGN COMPETITION

Monday, July 17 and Tuesday, July 18

The 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 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 adviser who is also the contact person with ASABE. There are no classes or leagues, every team will work on the same Challenge.

Monday, July 17 Robotics Competition Testing - 4:00PM-6:00PM

Robotics Judges Orientation - 5:00PM-6:00PM

Tuesday, July 18 Robotics Competition: Round 1 - 8:00AM-10:00AM
Robotics Competition: Round 2 - 10:30AM-12:30PM
Robotics Competition: Round 3 - 2:00PM-4:00PM

E #7

WOMEN IN ASABE SOCIAL

Monday, July 17 - 4:30PM-5:30PM

The Women in ASABE Social is an informal mixer open to all female ASABE members. Hosted by Past Presidents Mary Leigh Wolfe and 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

Technical Session #153

PERSPECTIVES ON COGENERATION ON THE 21ST CENTURY – INVITED PRESENTATIONS

Monday, July 17 – 5:00PM-7:00PM

Sponsored by ES-210

Moderator: Jaime Theisen, University of Illinois, Urbana, IL

In era of increasing global demand for energy use and more sustainable energy, efforts in both the public and private sector of various scales have sought to meet demand in the 21st Century. However, cogeneration is a concept that all-too frequently slips under the radar.

5:00PM Introduction

5:05PM TBA – Jaime Thissen

5:20PM TBA – Dr. Gary Hawkins

5:35PM TBA – Dr. Sergio Capareda

5:50PM TBA – Dr. Adetoyese Oydeun

6:05PM TBA –

E# 8

ASSOCIATION OF OVERSEAS CHINESE AGRICULTURAL, BIOLOGICAL, AND FOOD ENGINEERS (AOCABFE) ANNUAL BUSINESS MEETING AND AWARD BANQUET

Monday, July 17 - 5:00PM-9:30PM

The AOCABFE Annual Business Meeting will be held from 5pm to 6pm at the ASABE conference venue.

The meeting will review AOCABFE activities in 2016-2017 and discuss plans of action for 2017-2018.

The award Banquet will follow the business meeting at an off-site restaurant from 6:30pm-9:30pm. The meeting and the banquet provides a great opportunity for socializing with peers. All ASABE meeting attendees with Chinese origin or with international collaboration interests are invited.

COST: \$65.00 member

\$20.00 student

E# 9

ASSOCIATION OF AGRICULTURAL FOOD AND BIOLOGICAL ENGINEERS OF INDIAN ORIGIN (AABFEIO) BUSINESS MEETING AND DINNER

Monday, July 17 - 5:30PM-9:30PM

The 2017 Annual Business Meeting of AABFEIO will be held from 5:30PM to 6:30PM on Monday, July 17 at the ASABE conference venue. Following the meeting, the association will have its annual dinner from 7:00PM to 9:30PM. Dinner location will be announced. Tickets for students are discounted.

COST: \$25.00 AABFEIO ASABE Member & Family

\$15.00 Student Member

\$35.00 Non-AABFEIO ASABE member

FELLOWS INDUCTION CEREMONY / RECEPTION

Monday, July 17 - 6:00PM-8:00PM

All registrants are invited to this special recognition ceremony and reception honoring the 2017 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.

TEXAS A&M FORMER STUDENTS AND FRIENDS' SOCIAL

Monday, July 17 - 7:00PM-9:00PM

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 pm for complimentary appetizers and a cash bar. Gather with us to enjoy an update on the department!

INTERNATIONAL PREPROFESSIONAL COMMUNITY (IPC) BUSINESS MEETING AND SOCIAL

Monday, July 17 - 7:30PM-9:00PM

This is the main event of the International Preprofessional Community at AIM 2017. The current IPC officers will focus on networking with other students, electing new IPC officers, and briefly reviewing what sessions IPC members should plan to attend to make the most of the conference. Attendance to this meeting is expected for all students and especially those in undergraduate competitions. Come represent your school and preprofessional chapter! All students are highly encourage to come to this function. All pre-professional are invited to attend our social which follows our business meeting. This is a good time to network with other attendees and to make further plans for dinner after the reception. Refreshments will be served. Registration is required but there is no charge for this event.

E# 10

GRADUATE STUDENT SOCIAL

Monday, July 17 - 7:30PM-9:30PM

This event will provide an informal setting for graduate students from all over the world to meet up, socialize and make connections with each other. It's a great chance to get to know the people you'll be seeing in the hallways, sessions, and events throughout the week! This is a YPC sponsored event, open to all graduate students.

COST: Preregistration is required

IOWA STATE UNIVERSITY ABE RECEPTION

Monday, July 17 - 8:00PM-9:30PM

Meet your old friends and make new ones and find out what is happening in the Department of Agricultural & Biosystems Engineering at Iowa State University.

VIRGINIA TECH ALUMNI & FRIENDS SOCIAL

Monday, July 18 - 8:00PM-10:00PM

The Biological Systems 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 happenings in the department and at Virginia Tech!

E# 11

UNIVERSITY OF ILLINOIS ALUMNI & FRIENDS RECEPTION

Monday, July 17 - 8:00PM-10:30PM

Alumni and friends of the University of Illinois are invited to attend. We will feature a hosted car and snacks. There is no fee for the event, but registration is appreciated. Please stop by to visit and hear what is new with the Orange and Blue I-L-L-I-N-I!

COST: Preregistration is required

TUESDAY, JULY 18

PURDUE ALUMNI & FRIENDS- COMPLIMENTARY BREAKFAST

Tuesday, July 18 - 7:00AM-8:00AM

Purdue University's Dean of Agriculture, the Agricultural & 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

E# 12

INTERNATIONAL BREAKFAST

Tuesday, July 18 - 7:00AM-8:30AM

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 2017 recipient of ASABE's prestigious Kishida Award .

COST: \$15.00

E# 13

PENN STATE ALUMNI AND FRIENDS BREAKFAST

Tuesday, July 18 - 7:00AM-8:30AM

This event is open to all alumni, student, 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 the current happenings in the ABE Department. All guests are eligible to win door prizes.

COST: \$14.00

E#21

WASHINGTON AGRICULTURAL SYSTEMS 101

Tuesday, July 18 - 7:00AM-9:00AM

An event sponsored and organized by the YPC of ASABE to explore the local agricultural activities in the state of Washington. Invited speaker, Dr. Troy Peters from the IAREC, WSU, Prosser, will be talking about geography and geology of Washington State and its influence on rainfall patterns and growing conditions, popular crops in WA, and various other problems. In addition, his talk will include resource limitations and projected changes and challenges due to climate change.

COST: Preregistration is required

K.K. BARNES STUDENT PAPER COMPETITION

Tuesday, July 18 - 8:00AM-9:00AM

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 AEM/ASABE Student Awards Breakfast on Wednesday.

ASABE ROBOTICS STUDENT DESIGN COMPETITION

Tuesday, July 18

The 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 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 adviser who is also the contact person with ASABE. There are no classes or leagues, every team will work on the same Challenge.

Tuesday, July 18

Robotics Competition: Round 1 - 8:00AM-10:00AM

Robotics Competition: Round 2 - 10:30AM-12:30PM

Robotics Competition: Round 3 - 2:00PM-4:00PM

Tour# 4

GREEN BLUFF ORCHARDS

Tuesday, July 18 - 9:00AM-12:30PM

Visit the unique area of Green Bluff where over 30 small growers and ranchers open their doors to the public. The first stop is at Willow Pond Pottery and Herbs, where you can stroll with the owners through the fragrant herb gardens and learn what herbs are best for cooking and how to incorporate them into your recipes. In the century-old barn see their handmade stoneware pottery and specialty herb teas. Next, you will visit a cherry orchard where you can pick some cherries, and if inclined, line up for a "cherry pit spit" contest (the current record is 32' 9" for women and 49' 4" for men)! There are prizes for the winners! Our last stop is at High Country Orchards for where you can indulge in a piece of fresh baked apple pie ala' mode and enjoy some great shopping in their large gift shop.

Includes: Transportation, guide, cherry picking and pie.

COST: \$48.00 per person.

GUNLOGSON ENVIRONMENTAL DESIGN COMPETITION

Tuesday, July 18 - 9:30AM-10:30AM

The top three entries for the environmental design competition have been invited to this oral competition. Winners will be recognized at the AEM/ASABE Student Awards Breakfast on Wednesday.

Technical Session #219

WATERSHED MANAGEMENT AND WATER AVAILABILITY: FLOOD VERSUS DROUGHT – INVITED PRESENTATIONS

Tuesday, July 18 – 9:30AM-12:00PM

Moderator: Sherry Hunt, USDA-ARS, Stillwater, OK

9:30AM

Introduction

9:35AM

The Columbia Basin Project: Recipient of Irrigation Water Supply from Grand

Coulee

Dam

Toni Turner, Program Manager, US Bureau of Reclamation, Ephrata, WA

10:00AM

History of USDA-Assisted Dams

Steve Durgin, USDA NRCS, Washington DC

10:20AM

What a mess! – Sedimentation Issues in Reservoirs

Jon Fripp, USDA NRCS NDCSMC, Fort Worth, TX

10:40AM

From Detention to Retention - Dam Rehabilitation Issues when Water Storage is added to Flood Control Dam

- Thomas Brown, USDA NRCS NDCSMC, Fort Worth, TX
- 10:55AM Break**
- 11:00AM Converging Stepped Chutes for Embankment Dams**
Sherry Hunt, USDA ARS, Stillwater, OK
- 11:15AM Evolution of USDA Hydrology**
Claudia Hoefft, USDA NRCS, Washington DC
- 11:30AM Spatial Evaluation of Lost Water Holding Capacity of Watersheds**
Bhavna Sharma, Iowa State Univ, Ames, IA
- 11:45AM A simulation model for optimal sizing of water harvesting structures in rainfed agricultural regions**
Vamsikrishna Vema, Indian Institute of Technology Madras, Chennai, Tamil Nadu India

Technical Session #222

CHALLENGES AND OPPORTUNITIES FOR FOOD PROCESS ENGINEERS – PANEL DISCUSSION

Tuesday, July 18 – 9:30AM-12:00PM

Sponsored by PRS, Organized by Task Force for Food Engineering

Moderator(s): Litha Sivanandan, West Virginia Univ, Morgantown, WV

Chris Butts, USDA ARS, Dawson, GA

Juming Tang, Washington State Univ., Pullman, WA

The Processing Systems Community has organized this session to honor the recipient of the 2017 ASABE International Food Engineering Award and provide an opportunity for food process engineers from industry, government and academia to discuss challenges and share their vision for the future of food processing engineers.

9:30AM Introduction

9:35AM Historical Challenges and Potential Opportunities for Food Engineers

Yrio Roos, Ph.D, University College Cork, Cork, Ireland

10:10AM Challenges in Food Engineering Education and Research

Bradley P. Marks, Ph.D, P.E., Michigan State University, East Lansing, MI

10:35AM Challenges and Opportunities in Sensing and Measurement in Food Processing

Brady P. Carter, Ph.D, METER Corp, Pullman, WA

11:00AM New Funding Opportunities for Food Engineering Programs

Hongda Chen, Ph.D, USDA National Institute of Food and Agriculture, Washington, DC

11:25AM Panel Discussion

AGCO NATIONAL STUDENT DESIGN COMPETITION

Tuesday, July 18 - 11:00AM-12:00PM

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 AEM/ASABE Student Awards Breakfast on Wednesday.

E# 14

GRADUATE STUDENT PROFESSIONAL DEVELOPMENT ROUNDTABLE

Tuesday, July 18 - 12:00PM-2:00PM

A panel of esteemed members of our society will share their academic and professional experiences with current graduate students. This is not be a technical session, but instead a time to ask questions and gain advice from others who have been there before you. This is a YPC sponsored event and is open to all graduate students.

COST: \$10.00

QUARTER SCALE TRACTOR STUDENT DESIGN COMPETITION

Tuesday, July 18 - 12:30PM-2:30PM

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 18 - 1:00PM-2:00PM

The ASABE Business Meeting will be conducted by ASABE President Maynard Herron, P.E., Engineering Manager, AGCO and ASABE President-Elect Stephen Searcy, Professor, Texas A&M University

GRAD SCHOOL 101: A PANEL DISCUSSION FOR UNDERGRADUATES

Tuesday, July 18 - 2:00PM-4:00PM

Thinking about graduate school? Wondering what it's all about or if it's the right place for you? A panel of current graduate students from different backgrounds, programs, and experiences will share their journey as well as answer questions on everything from the application process to every day grad life. This is a YPC sponsored event.

ASABE FOUNDATION BOARD OF TRUSTEES

Tuesday, July 18 - 2:00PM-5:00PM

The Foundation Board of Trustees meeting will be led by Robert Gustafson, President.

Technical Session #223

FOSTERING AFRICAN-CHINESE AND INDIAN PARTNERSHIPS TOWARD DELIVERING MUTUALLY BENEFICIAL SOLUTIONS IN AGRICULTURE – PANEL DISCUSSION

Tuesday, July 18 – 2:30PM-5:00PM

Sponsored by E-2050 –Global Engagement

Moderator(s): Klein Ileleji, Purdue Univ, West Lafayette, IN

Nourredine Abdoulmoumine, Univ of Tennessee, Knoxville, TN

China, India and countries in Africa have one of the largest numbers of smallholder farmers who still utilize low input and low level technologies in their farming operations. Farmer sizes are characteristically small (2 ha on average) with productivity less than the potential when compared to the west. However, smallholder assistance, infrastructure and support from research and higher institutions differ in these three places. This session will provide an opportunity for African, Chinese and Indian ASABE members to present opportunities to foster collaboration between these three communities today the goal of uplifting the level of agricultural productivity of smallholders in their countries.

Panelists:

Dr. Gajendra Singh, Formerly with Asian Institute of Technology, Bangkok, Thailand

Dr. Joseph Mpagalile, FAO, Rome, Italy

Dr. Xiongkui He, China Agricultural University, Beijing, China

Dr. Alan Hansen, University of Illinois, Urbana, Champaign, Illinois

Technical Session #232

WILLIAM J. CHANCELLOR MEMORIAL SESSION ON SOIL TILLAGE, TRACTION, AND COMPACTION – INVITED PRESENTATIONS

Tuesday, July 18 – 2:30PM-5:00PM

Moderator: Dick Godwin

ASABE Fellow William Chancellor, Davis, Calif., passed away peacefully on February 16, surrounded by his family. He was 85 years old.

Chancellor received a bachelor of engineering degree from the University of Wisconsin-Madison, and masters and doctoral degrees from Cornell University. He joined the University of California-Davis in 1957, and he worked and taught topics relating to soil mechanics, soil-machine relations, vehicle stability and traction, forage harvesting and handling, rice production and processing, economic optimization of farm equipment use, agricultural technology for developing nations, energy relations in agricultural production, and many others. He was a global authority on smallholder-farm mechanization. Following on his early interests in information theory, he was one of the first to recognize the interconnection and substitutability of information and energy in developing more advanced, efficient, and sustainable food production systems.

With an encyclopedic knowledge of everything in the agricultural engineering field, and many other fields as well, he was also the author of a pioneering searchable database of articles and other information that earned him a Presidential Citation from ASABE in 1996. Without his untiring support as a key member of the Editorial Board, the three volume Advances in Soil Dynamics published by ASABE would have been impossible to accomplish. He held a deep concern for the needs and welfare of his students, who have continued his work and influence around the world. Few would have noticed his retirement, in 1994 after 37 years with the university, as he remained a notable presence in the department and on campus, and if approached for advice or assistance, selflessly provided the benefit of his experience, insight, and wisdom. He continued to actively participate in the Annual International ASABE meetings on a regular basis until recently.

Chancellor was the recipient of numerous awards serving as testament to the wide recognition and significance of his work, including election to the National Academy of Engineering in 2005. In honor of his great service to the campus, he was recently informed he would be presented with the UC-Davis Medal.

Chancellor was a brilliant scholar, teacher, and mentor. His passing is a great loss for the department and the University. He is survived by his wife and daughter and the rest of his family and friends who have been steadfast in their support.

He was a 63-year member of ASABE. He was awarded Kishida International Award in 1984, inducted as ASABE Fellow in 1985 and received John Deere Gold Medal in 2004 from ASABE.

2:30PM Introduction

2:35PM Prof. William J. Chancellor Memorial Session on Soil Tillage, Traction and Compaction

Shrini Upadhyaya, Univ of California, Davis, CA

3:05PM Laboratory Investigations on Draft and Power Requirements of a Front Active and Rear Passive Set Combined Offset Disc Harrow

Ganesh Upadhyaya, India

3:20PM Operational analyses of walking tractors fitted with rubber tracks and pneumatic wheels

Showkat Rasool, India

3:35PM Impact of Machine Mass on Agricultural Productivity Compared to Soil Cone Penetrometer Data

Andrew A Klopfenstein, Ohio State University, Columbus, OH

3:50PM BREAK

4:00PM An investigation into the effect of traffic and tillage on soil properties using X-ray computed tomography

William Millington, Harper Adams University, Shropshire, United Kingdom

4:15PM System design and economics for Controlled Traffic Farming (CTF) in grass silage production

Sven Peets, Harper Adams University, Edgmond, Newport, United Kingdom

4:30PM Soil stresses beneath tire traffic as affected by stress state transducer burial method

Thomas Way, USDA ARS, Auburn, AL

4:45PM Modelling the Influence of Incorporating Inorganic Fertilizer on the Recovery Pattern of Two Agricultural Soils After Load Application

Eli Mamman, Univ of Maiduguri, Maiduguri, Borno, Nigeria

5:00PM Mechanics of a Model Chisel Furrower

Technical Session #242

MANURE AND LIABILITY ISSUES IN PNW – INVITED SPEAKERS

Tuesday, July 18 – 2:30PM-5:00PM

Sponsored by: NRES-27

Moderator(s): Joseph Harrison, Washington State Univ, Puyallup, WA

Teng Teeh Lim, Univ of Missouri, Columbia, MO

This session will provide a case study of air and water related liability issues in the Pacific Northwest, Washington State.

2:30PM Introduction

2:35PM AIR

- **What are Major Concerns**
Pius Ndegwwa, Washington State University
- **Outreach – Engagement**
Bill Wavrin, Dairy Producer
- **Yakima Air Quality Authority**
Yakima Air Quality Authority

3:30PM BREAK

3:45PM WATER

- **Defining the Issue**
Ginny Prest, WSDA
- **Industry Perspective**
Jay Gordon, WSDA
- **Addressing the Issue – GWMA**
David Bowen, WA DOE

4:45PM Discussion / Questions

Technical Session #249

VULNERABILITY ASSESSMENT OF LAND RESOURCES FOR SUSTAINABLE DEVELOPMENT – INVITED PRESENTATIONS

Tuesday, July 18 – 2:30PM-5:00PM

Sponsored by NRES-26

Moderator: Aavudai Anandhi Swamy, Florida Agr & Mechanical Univ, Tallahassee, FL

This invited technical session addresses developing vulnerability assessments for land resources and also explores ways to link these assessments for sustainable development of the land resources. These speakers will address soil and water components of land resources; their vulnerability and sustainability to changes in climate and land-use. The invited presentations are given by multi-disciplinary professionals (e.g. engineers, agronomists, soil scientists, economists) who share case studies, lessons learned, overviews of cutting-edge technologies and design strategies, and best practices that are aimed at improving the land resources sustainability through vulnerability assessments. This multi-disciplinary approach through a series of talks can open up avenues to explore climate and land-use stressors important for vulnerability assessments and how the stressors can be represented using indicators.

2:30PM Introduction

2:35PM Vulnerability Assessment of Land Resources for Sustainable Development: Overview of the Lessons Learned and Next Steps

Dr. Aavudai Anandhi, Florida Agricultural & Mechanical University, Tallahassee, FL

2:50PM Modeling of the Integrated Water Cycle: Insights on the Energy-Water-Land Nexus

Dr. L. Ruby Leung, Pacific Northwest National Laboratory, Richland, WA

3:05PM Winter Wheat Yield Responses to Climate Variation in the U.S. Central Great Plains

Dr. Robert Aiken, Kansas State University, Manhattan, KS (Robert Aiken, Xiaomao Lin, Zachary Zambreski)

- 3:20PM** **Climate-Induced Vulnerability of Land Resources and Approaches for Sustainable Development**
Dr. Puneet Srivastava, Auburn University, Auburn, AL
- 3:35PM** **BREAK**
- 3:45PM** **Adaptation Strategies and Tools to Increase the Climate Resilience of the Agricultural Industry in the Southeastern U.S.**
Dr. Clyde W. Fraisse, University of Florida, Gainesville, FL
- 4:00PM** **Crop Consumptive use – A Complex Link Between Climate Change and Crop Productivity**
Dr. George Paul, Formation Environmental, LLC, Sacramento, CA
- 4:15PM** **Ecohydrological Modeling Can Measure Surface Hydrological and Ecological Response to Land Use and Climate Change**
Kyle R. Douglas-Mankin, USGS New Mexico Water Science Center, Albuquerque, NM
- 4:30PM** **To Come**
Dr. Indrajeet Chaubey, Purdue University, West Lafayette, IN

Technical Session #251

INCENTIVIZING AND FACILITATING UNDERGRADUATES TO TAKE THE FUNDAMENTALS OF ENGINEERING (FE) EXAM – INVITED PRESENTATIONS

Tuesday, July 18 – 2:30PM-5:00PM

Sponsored by EOPD-414, EOPD-205, EOPD-211

Moderator: Thomas Bon, North Dakota State Univ, Fargo, ND

This is intended to be an interactive session between the invited panel members from several universities and the audience. Our goal is to share ideas and methods that are currently being used to encourage and/or assist undergraduates to take the Fundamentals of Engineering Exam. It is hoped that this session will be the starting point to great discussion in ASABE in methods to encourage more students to consider becoming registered Professional Engineers, especially in the Agricultural and Biological Engineering discipline.

Technical Session #252

BROCK FAULKNER MEMORIAL SESSION ON AGRICULTURAL AIR QUALITY – INVITED PRESENTATIONS

Tuesday, July 18 – 2:30PM-5:00PM

Sponsored by PAFS-50, MS-23/7/3

Moderator: Russell McGee, Texas A&M Univ, College Station, TX

W. Brock Faulkner, PhD, PE, ASABE member was an Assistant Professor of Biological and Agricultural Engineering at Texas A&M University from 2008 until his death February 17, 2016. He was an active member of the society, in research, publications, and especially a student favorite in teaching. This memorial session will commemorate his life and service to his profession.

- 2:30PM** **Introduction**
- 2:35PM** **Career in Review**
Bryan Shaw, Texas Commission on Environmental Quality, Austin, TX
- 2:50PM** **Personal Remembrances**
John Wanjura, USDA ARS, Lubbock, TX
- 3:05PM** **Professional Impact:**
- **Air Quality Research:** Kelley Green, Texas Cotton Ginners Assoc, Austin TX
 - **USDA AAQTF:** Bill Norman, National Cotton Council, Cordova, TN
 - **Teaching:** TBA
 - **Cotton Research:** Derek Whitelock, USDA ARS Southwestern Cotton Ginning Research Laboratory, Mesilla Park, NM

4:30PM **Mentoring Impact:** Selected former grad students (Lauren Hazelrigs, Raleigh Smith, etc.)
4:50PM **Wrap up**
Russell McGee, Texas A&M Univ, College Station, TX

Technical Session #253

STUDENT SUCCESS: PREDICTION AND ENHANCEMENT

Tuesday, July 18 – 2:30PM-5:00PM

Sponsored by EOPD-203, EOPD-211

Session Organizer: Jennifer Keshwani, University of Nebraska-Lincoln, Lincoln, NE

Moderator: David Jones, Raj Raman & Evan Curtis,

Presenters will share examples of strategies used to enhance student success. Following the examples, there will be an open dialogue among attendees to discuss ways student data can be leveraged to guide student success programming.

AFRICAN NETWORK GROUP OF THE ASABE ANNUAL BUSINESS MEETING

Tuesday, July 18 - 4:00PM-6:00PM

Annual business meeting to assess the past year's milestones and set new goals. New officers will be elected. Old and new members as well as interested parties are cordially welcome to contribute and network.

Technical Session #243

FINALIZING MODEL CALIBRATION AND VALIDATION GUIDELINES – RAP SESSION

Tuesday, July 18 – 5:00PM-7:00PM

Sponsored by NRES-21

Moderator: Claire Bauffaut, USDA ARS, Columbia, MO

This session will learn about the final version of model calibration and validation guidelines. Interested persons will become or stay involved in the process for developing and updating these guidelines.

Technical Session #250

TECHNICAL TRENDS AND CAREER OPPORTUNITIES IN THE U.S. AND KOREA – AKABFE INVITED PRESENTATIONS

Tuesday, July 18 – 5:00PM-7:30PM

Sponsored by E-2050

Moderator: Seung-Chul Yoon, USDA ARS, Fayetteville, AR

This session is intended to facilitate communication between Korean and U.S. professionals and students in the field of agricultural, biological and food engineering. Discussions will center on 'Technical Trends and Career Opportunities in the U.S. and Korea,' and the invited speakers will address a wide range of topics covering trends both past and present as well as directions the profession will likely take in the future. Speakers will also offer practical advice on pursuing professional careers.

5:00PM **Introduction**

5:05PM **Bio/Nano Technology for Advanced Hybrid Materials and Devices**

Jin-Woo Kim, University of Arkansas, Fayetteville, AR

5:25PM **Trends of Precision Agriculture in Korea**

Sun-ok Chung, Chungnam National University, Daejeon, Republic of Korea

5:45PM **Research and Development Direction and Prospect of Korean Agricultural Tractor**

Ji-hoon Yu, LS Mtron Ltd., Republic of Korea

6:05PM **Research Spotlights (Student/Postdoctoral competition)**
AKABFE students/postdoctoral members

E# 15

ASSOCIATION OF KOREAN AGRICULTURAL, BIOLOGICAL, AND FOOD ENGINEERS (AKABFE) MEETING

Tuesday, July 18 - 5:00PM-7:30PM

Association of Korean 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 member
\$15.00 student

YOUNG PROFESSIONAL'S COMMUNITY BUSINESS MEETING

Tuesday, July 18 - 5:15PM-7:00PM

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.

E# 16

ASABE FOUNDATION DINNER – AN EVENING AT ARBOR CREST WINE CELLARS CLIFF HOUSE ESTATE

Tuesday, July 18 - 6:00PM-10:00PM

An incredible evening is planned for your enjoyment at the Arbor Crest Winery Estate, built in 1924 for inventor Royal Riblet. The estate sits on a cliff and offers panoramic views of the Spokane River and surrounding valley. During the reception, enjoy music as you wander the grounds where you'll view unique basalt rock structures, a small vineyard, thousands of flowers, a 16'x16' checkboard complete with dinner plate size wooden checkers (yes you can play), some of Riblet's unique inventions, and a croquet court on the cliff's edge. Arbor Crest's award winning wines and their Square Wheel Brewing Co. brews will be available for your enjoyment. Guides will be on hand to offer tours of the grounds and answer questions. Sit-down to dinner in the Vineyard Tent with sweeping views of the area and the majestic sun setting over the vineyards below.

Includes: All transportation, guides, hors d'oeuvres and buffet dinner.

COST: \$100.00 per person

WEDNESDAY, JULY 19

E# 17

MEET AND GREET BREAKFAST WITH DEPARTMENT CHAIRS AND SENIOR FACULTY

Wednesday, July 19 - 7:00AM-8:00AM

This networking event is meant to connect late-career graduate students with department chairs/heads as well as senior faculty members to discuss opportunities for future research and/or faculty position openings. This is a YPC sponsored event, open to all graduate students as well as interested faculty members.

COST: \$5.00 students

\$10.00 faculty

E# 18

AEM/ASABE STUDENT AWARDS BREAKFAST

Wednesday, July 19 - 7:30AM-9:00AM

The Association of Equipment Manufacturers (AEM) and the American Society of Agricultural and Biological Engineers (ASABE) invites all of the ASABE student members to attend the AEM/ASABE Student Awards Breakfast. This event is a wonderful time to learn more about the professional side of the world as you dine. Reservations must be made by Tuesday, July 18. Breakfast reservations will be confirmed in your ASABE registration packet. All annual meeting attendees are encouraged to attend.

COST: \$5.00 for students

\$20.00 for all other registrants

Technical Session #324

ABET PROGRAMMING

9:00AM-10:00AM

ABET Program Evaluator Information Session

Panelists: Ann Kenimer, Texas A&M Univ
Donald Slack, Univ of Arizona
Mike Hirschi, Univ of Illinois
Sonia Maassel Jacobsen, Univ of Minnesota
David Jones, Univ of Nebraska
Peter Livingston, Cal Poly Univ – SLO
Richard Cavaletto, Cal Poly Univ - SLO

Your department struggles with preparing for ABET visits. This is your chance. Take the program evaluator (PEV) training and become a PEV for agricultural and/or biological engineering programs. You'll learn by making accreditation visits to other universities as well as through the ABET training program which includes face-to-face training and working with a mentor. Learn all the details. Chat with current PEVs about their experiences. You'll be the hero or heroine of your department! If you're not in academia, you're valuable to provide information as to what employers of graduates are looking for and EOPD-204 would like to recruit you as a PEV also. This is a chance to give back to the discipline.

Session 324: ABET Criteria 4 Assessment and Continuous Improvement

10:00AM-10:45AM

Chairs: Mark Riley, Evan Curtis, University of Nebraska-Lincoln

10:00AM

Non-Onerous and Sometimes Effective Approaches to Continuous Improvement Processes for a mid-Sized Engineering Degree Program

Raj Raman, Iowa State University

10:20AM

Criterion 4 Lessons Learned at the University of Kentucky after a Recent ABET Review

Czar Crofcheck, University of Kentucky

10:35AM

Discussion on Assessment Methods among programs in Ag/Bio Disciplines

10:45AM-12:15PM

Roundtable Discussion on Assessment

Moderators: Mark Riley, Evan Curtis, University of Nebraska-Lincoln

Panelists: TBA

Hear first-hand experiences from programs with recent ABET accreditation visits and participate in discussions about what works and doesn't work for assessment and continuous improvement as required in ABET Criterion 4. Bring your questions and your experiences for the roundtable discussion.

ETHICS IN ENGINEERING – ESSAY AND VIDEO COMPETITION

Wednesday, July 19 - 9:30AM-12:00PM

The ASABE P-128 committee invites ASABE preprofessionals and young professionals to participate in the 2017 Professional Engineering Ethics Video Challenge. In a video of five minutes or less, describe an ethical issue(s) faced by agricultural and biological engineers in practice or research. Winners will receive a travel grant to the 2017 ASABE Annual International Meeting (AIM) where winning videos will be presented at the 2017 Ethics session sponsored by P-128, as case studies for discussion on ethical scenarios.

INTERNATIONAL PREPROFESSIONAL COMMUNITY (IPC) BUSINESS MEETING - PART 2

Wednesday, July 19 - 10:00AM-11:00AM

This business meeting will briefly review the results of this year's annual meeting and will elect new officers for the 2017-2018 year. These new officers will be introduced at the Wednesday Awards Banquet at 12:30pm.

E# 19

ASABE AWARDS LUNCHEON

Wednesday, July 19 - 12:30PM-2:30PM

A complete list of awards to be presented will be posted at a later date. A luncheon ticket is included with your full meeting registration. Additional luncheon tickets are available \$40.00 per person.

COST: Included with full meeting registration

Additional tickets \$40.00

Tour # 5

DOWNTOWN WINE, FOOD AND ART WALKING TOUR

Wednesday, July 19 – 2:30PM-5:00PM

Meet your guide at the hotel and begin an afternoon of Spokane delights! Learn about the farm-to-table food movement at Santé where the chef is known nationally for his awards and locally raised, housemade charcuterie. Taste wine at Cougar Crest Estate Winery and note what makes them special. Visit an art gallery that showcases over 20 local artists featuring everything from pottery, to glass blowing, to fiber art, to paintings on canvas, fabric, or other mediums. And taste more wine at the Nectar Tasting Room, highlighting wines from around Washington State.

Includes: Local guide, two wine tastings, charcuterie tasting platter and other local delights.

COST: \$45.00 per person. Tour covers about 1.5 miles at a leisurely pace, with stops.

Tour# 6

THE SPECTACULAR LASER LIGHT SHOW ON THE SPILLWAY OF GRAND COULEE DAM

Wednesday, July 19 - 5:30PM-12:30AM

Travel through Eastern Washington's rich farm country, learning along the way about the Cataclysmic Ice Age Flood that sculpted the landscape. Arrive at Grand Coulee Dam, one of the largest concrete structures in the world. The dam sits astride the Columbia River; the second largest river in the United States. Grand Coulee Dam was built in the 1930s to produce hydroelectric power and provide irrigation to 500,000 acres in central Washington State, and is a major contributor in the Bonneville power grid supplying electrical power throughout the western United States. As night falls, enjoy the Laser Light Show that tells the story of the river and is projected on the spillway as water pours down the face of the dam. The show is narrated and accompanied by music and you'll be seated in bleacher seats. There will be time to explore the Visitor Center at the Dam. Dinner is hosted in Grand Coulee.

Includes: Transportation, guide and dinner in Grand Coulee (the laser light show is complimentary).

COST: \$82.00 per person

THURSDAY, JULY 20

ASABE BOARD OF TRUSTEES & COUNCILS

Thursday, July 20 - 7:45AM-2:00PM

LOCATION: Davenport Grand

The Publications, Meetings, Standards, Membership Councils will meet from 8:00AM-10:00AM. The ASABE Board of Trustees will be meeting 10:30AM-3:00PM.

Tour# 7

THE HISTORIC SILVER VALLEY AND THE CRYSTAL GOLD MINE

Thursday, July 20 - 9:30AM-2:30PM

Spend a day re-living the boom days of the late 1800's! As you travel to the richest Silver Mining District in the world, view beautiful Lake Coeur d'Alene and the world-class Coeur d'Alene Resort & Golf Course. Tour the Cataldo Mission, the oldest building in the State of Idaho, which was built by the Coeur d'Alene Indian Tribe and Jesuit Missionaries in 1853. Walk through the Visitor Center and see items on loan from the Smithsonian. The display presents a fascinating tour through the shared history of the Catholics and the Coeur d'Alene native tribe. Enjoy lunch at the Enaville Resort, the former "Snake Pit", built in 1880 for the fur traders and early miners during the Mining Rush. This log building has driftwood and elk-horn furniture, and eclectic art hangs from the walls and ceilings: a definite backroads spot in Idaho! Continue to the Crystal Gold Mine, an authentic 1890's underground gold mine. (Note you can walk into the side of the mountain and the ground is flat to offer easy access for all.) Observe native silver, gold bearing quartz, unusual crystal formations and mining artifacts. Learn how the miners worked with only the use of a pick ax, dynamite, and a candle on their hard-hat for light. You can even try your hand at panning for gold and precious gem stones that are native to Idaho.

Includes: All arrangements with transportation, guide, admission to the Cataldo Mission and Crystal Gold Mine, and lunch at the Enaville Resort

COST: \$83.00 per person