

MONDAY, JULY 18

TECHNICAL PROGRAM

Monday, July 18

9:30AM - 12:15PM

The purpose of these sessions is the open exchange of ideas, therefore, remarks made by a participant or member of the audience cannot be quoted or attributed to either the individual or the individuals' company. No recording of the participants' remarks or discussion is permitted. Pictures of any material shown here are not permitted.

In respect for the presenters and the people attending the conference, ASABE would request that anyone having a pager, cell phone, or other electronic device please turn them off. If your situation does not allow for these devices to be turned off, please reseat yourself close to an exit such that everyone can benefit from the information presented here without disruption.

Monday, July 18 - 9:30AM - 12:15PM

SESSION 101

INNOVATIONS AND INTEGRATION OF INSTRUCTION

– Sponsored by EOPD-205, EOPD-206

Moderator:

LOCATION: Coronado T

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460609	Assessment of Performance of On-the-Job Training of Students: Basis for Empowerment Program Marta B. Macalad, Adventist University of the Philippines, Silang, Philippines (M.B. Macalad)
9:50AM	162461472	An alternative to the capstone experience in engineering technology Joel Peterson, University of Wisconsin - River Falls, River Falls, WI (J. Peterson, J. Shakal)
10:05AM	162461439	AGSM Capstone: Curriculum Integration and Career transition Russell O. McGee, TAMU, College Station, TX (R.O. McGee)
10:20AM	162461261	Empowering Undergraduate Engineering Students to Connect Laboratory Experiences with Industry Applications through Fictional Clients Jennifer Keshwani, University of Nebraska-Lincoln, Lincoln, NE (J. Keshwani, E. Curtis)
10:35AM	162459181	Potential risks of increased online and blended course delivery in a technical applied physics course David Mabie, University of Nebraska-Lincoln, Lincoln, NE (D. Mabie, E. Curtis, D. Keshwani)
10:50AM		Break
11:00AM	162458283	Animal Agriculture and Climate Change: Building Capacity of Extension Educators Working with Live-stock and Poultry Gary L. Hawkins, University of Georgia, Watkinsville, GA (G.L. Hawkins, D. Smith, R. Stowell, C. Powers, J. Heemstra, J. Harrison, E. Whitefield, S. Mukhtar, M. Risse, P. Knox, C. Gooch, J. Pronto, D. Schmidt, L. Jacobson)
11:15AM	162458213	Solar Powered Applications to Produce Food in Off-Grid Locations Gary L. Hawkins, University of Georgia, Watkinsville, GA (G.L. Hawkins, A. Speir, J. Jacobs, S. Carlson, J. Kichler, J. Lanier, J. Bernard, J. Worley, M. Risse)
11:30AM	162457451	The New Biology and Engineering Brahm P. Verma, The University of Georgia, Athens, GA (B.P. Verma)

11:45AM	162460723	Food Engineering Education in Nigeria the Journey so far J. O. Olajide, P.O. Ngoddy, Ladoke Akintola University of Technology, Ogbomosho, Nigeria (J.O. Olajide, P.O. Ngoddy)
12:00PM	162381652	The Capstone Experience at the University of Minnesota Sonia M. Jacobsen, Univ. of Minnesota, Roseville, MN (S.M. Jacobsen, J. Chaplin)

Monday, July 18 - 9:30AM - 12:15PM

SESSION 102

ADVANCES IN BIOMASS PREPROCESSING AND PRETREATMENT - PART 1

– Sponsored by ES-220

Moderator:

LOCATION: Coronado A

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461546	Effectiveness of biomass and biochar filters to remove tars from syngas Sunil Thapa, Environmental Science Graduate Program, Oklahoma State University, Stillwater, OK (S. Thapa, P. Bhoi, A. Kumar, R.L. Huhnke)
9:50AM	162458314	Impact of Grinding and Pelleting on Particle Size Distribution Neal A. Yancey, Idaho National Laboratory, Idaho Falls, ID (N.A. Yancey, J.S. Tumuluru, C.C. Conner)
10:05AM	162458300	Comparing RoTap Particle Size Distribution Data with Particle Characterization Using Digital Imaging Neal A. Yancey, Idaho National Laboratory, Idaho Falls, ID (N.A. Yancey, J.S. Tumuluru, C.C. Conner)
10:20AM	162458233	Ambient drying of Eucalyptus grandis in Hawaii: Experimental and model results David H. Harris, University of Hawaii, Honolulu, HI (D.H. Harris, S.Q. Turn)
10:35AM	162455623	Microbial Pretreatment to Improve the Densification of Canola and Barley Straw Lope G. Tabil, University of Saskatchewan, Saskatoon, Canada (C. Rathi, M. Soleimani, L.G. Tabil, T. Dumonceaux)
10:50AM		Break
11:00AM	162447920	Enhancing the physical quality of barley straw pellets by optimizing biological pretreatment Lope G. Tabil, University of Saskatchewan, Saskatoon, Canada (W. Gao, R. Zhao, L.G. Tabil, S. Espinel Rios, T. Dumonceaux)
11:15AM	162462864	Towards the Optimal Sub-millimeter Biomass Particles for Sugars Production at Low Cost Libing Zhang, Washington State University, Richland, WA (L. Zhang, D.N. Lanning, J.H. Dooley, b. yang)
11:30AM	162459815	Evaluation of Thermal Preconditioning on Switchgrass Mechanical Properties and Correlation to Pellet Quality Curtis R. Covelli, Pennsylvania State University, Chadds Ford, PA (C.R. Covelli, A. Karamchandani, D. Ciolkosz, H. Yi, V.M. Puri)
12:00PM	162462151	Effects of binders on densification characteristics of thermally treated energy crops Sudhagar Mani, University of Georgia, Athens, GA (M. Manouchehrinejad, S. Mani)

MONDAY, JULY 18

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

SESSION 103

CATALYTIC AND THERMOCHEMICAL CONVERSIONS OF BIOMASS - TORREFACTION, PYROLYSIS & LIQUEFACTION – Sponsored by ES-220

Moderators: Sandun Fernando, Texas A&M University, College Station, TX, Sudhagar Mani, University of Georgia, Athens, GA, Veronica Mbaneme,

LOCATION: Coronado B

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461791	Understanding the effect of biochemical composition of algae on the bio-oil yield from HTL and up-grading of the produced oil Rajdeep Shakya, Auburn University, Auburn, AL (R. Shakya, R. Mahadevan, S. Adhikari)
10:05AM	162461552	Catalytic pyrolysis of municipal solid wastes (MSW) in pyroprobe and a lab scale pyrolyzer Ajay Kumar, Oklahoma State University, Stillwater, OK (R.S. Tshikesho, A. Kumar, R.L. Huhnke, P. Bhoi)
10:20AM	162460916	Effect of alkali and alkaline earth metals on in-situ catalytic fast pyrolysis of lignocellulosic biomass – A micro-reactor study Ravishankar Mahadevan, Auburn University, Auburn, AL (R. Mahadevan, S. Adhikari, R. Shakya, D. Dayton, K. Wang)
10:35AM		Break
10:45AM	162460803	Co-hydrotreatment on Pyrolysis Oil and Vegetable Oil for the Production of Drop-in Alternative Jet Fuels Yinglei Han, Washington State University, Pullman, WA (Y. Han, M.P. Garcia)
11:00AM	162461748	Biomass Upgrading by Pyrolysis and Electrocatalysis Depots Christopher Saffron, Michigan State University, East Lansing, MI (C. Saffron, M. Garedew, R. Sak, P. Hao, J. Jackson)
11:15AM	162461644	Effect of torrefaction temperature on lignin macro-molecule and product distribution from pyrolysis Ravishankar Mahadevan, Auburn University, Auburn, AL (R. Mahadevan, S. Adhikari, R. Shakya, D. Dayton, K. Wang)
11:30AM	162461606	Impact of Sunflower Seed Hulls Particle Size on the Properties of Densified Energy Products Jamileh shojaeiarani, North Dakota State University, Fargo, ND (D.S. Bajwa, J. shojaeiarani)

Monday, July 18 - 9:30AM - 12:15PM

SESSION 104

ENGINEERING DESIGN AND SAFETY CONSIDERATIONS FOR AGRICULTURE – Sponsored by ESH

Moderator: Michael Pate, Utah State University, Logan, UT

LOCATION: Coronado C

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460528	Simulating SAE J2194 Standard Static Test to Predict the Roll-Over Protective Structure (ROPS) Behavior Using Finite Element Technique Farzaneh khorsandi, University of Tennessee, Knoxville, TN (F. khorsandi, P.D. Ayers)

9:50AM	162461169	Determination of Carbon Monoxide Content of Exhaust Gases from Agricultural and Road Transport Tractors in Nigeria: A Case Study of Ogbomoso Metropolis Adewunmi Taiwo, Ladoke Akintola University of Technology, Ogbomoso, Nigeria (A. Taiwo)
10:05AM	162460245	Ohio On-farm Grain Storage Facilities Management and Farmers' Behaviors about Agricultural Safety and Health S. Dee Jepsen, The Ohio State University, Columbus, OH (Y. Geng, S. Jepsen)
10:20AM	162543664	A Summary of Environmental Cab Standard Development, a Verbal Account of Some of the Important Issues from ASABE Paper #2461359 Richard Job, Richard W Job & Associates LLC, Ankeny, IA (R. Job)
10:20AM		Break
10:30AM	162457529	Grain entrapment pressure on the torso – can you breathe while buried in grain? Kevin G. Moore, Oklahoma State University, Stillwater, OK (K.G. Moore, C. Jones)
10:45AM	162461916	The effects of grain type and condition on the force needed to extricate a victim William E. Field, Purdue University, Lafayette, IN (S. Issa, W.E. Field, R. Strohshine, C. Wassgren)
11:00AM	162455907	Interagency Collaboration to Equip Farmers and Ranchers with Vocational Rehabilitation and Assistive Technologies Michael L. Pate, Utah State University, Logan, UT (R. Miller, A. Brown-Reither, M.L. Pate)
11:15AM	162460895	Measuring safety performance with workers' compensation claims data Sai Ramaswamy, Iowa State University, Ames, IA (S. Ramaswamy, G.A. Mosher)

Monday, July 18 - 9:30AM - 12:30PM

SESSION 105

ADVANCED COMPUTATIONAL APPROACHES FOR SOLVING AGRICULTURAL AND BIOLOGICAL ENGINEERING PROBLEMS - PART 1

– Sponsored by ITSC-217, ITSC-254

Moderator: Matthew Harper, University of Wisconsin-Madison, Madison, WI

LOCATION: Coronado D

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461449	A GIS-based Decision Support Tool for Center Pivot Irrigation Systems Manuel A. Andrade, USDA-ARS, Bushland, TX (M.A. Andrade, S. O'Shaughnessy, S.R. Evett)
9:50AM	162460870	A Method of Quantifying Discrete Element Method Simulations of Top Soil Burial from a Mouldboard Plough John Fielke, University of South Australia, Adelaide, Australia (M. Ucgul, C. Saunders, J. Fielke)
10:05AM	162460861	The Effect of Discrete Element Particle Parameters on Angle of Repose and Soil-Tool Force Simulation Results John Fielke, University of South Australia, Adelaide, Australia (M. Ucgul, C. Saunders, J. Fielke)
10:20AM	162460865	Fuel efficiency simulation for an agricultural tractor Wan Soo Kim, Chungnam National University, Daejeon Metropolitan City, Korea (the Republic of) (W. Kim, S. Chung, C. Choi, J. Cho, D. Choi, Y. Kim)
10:35AM		Break

MONDAY, JULY 18

10:45AM	162461057	Analysis of tractor PTO gear using simulation software Yong Joo Kim, Chungnam National University, Daejeon, Korea (the Republic of) (Y. Kim, S. Chung, W. Chun, S. Kim, W. Choo, K. Lee, J. Shin, Y. Choe, C. Choi, J. Jang)	11:30AM	162460628	Comparison of reference spectrum collection modes for Visible/NIR on-line application in fruit internal quality detection Qingqing Li, Zhejiang University, Hangzhou, China (Q. Li, L. Zhang, H. Xu)
11:00AM	162461087	Analysis of PTO Gear Pair using Gear Design Program Paul Lee, ChungNam National University, Dajeon, Yuseng-gu, Korea (the Republic of) (P. Lee, S. Chung, J. So, Y. Nam, C. Choi, Y. Kim)	11:45AM	162460925	Fast determination of heavy metal in tobacco leaves by laser-induced breakdown spectroscopy Jiyu Peng, College of Biosystems Engineering and Food Science, Zhejiang university, Hangzhou, China (J. Peng, W. Kong, F. Liu, K. Song, L. Ye, Y. He)
11:15AM	162460883	Study on Driving Performance Evaluation of Unmanned Tractors Using Carsim Yeon Soo Kim, Chungnam National University, Daejeon, Korea (the Republic of) (Y. Kim, Y. Kim, S. Chung, C. Choi, K. Lee)	12:00PM	162461687	NIR detection of pits and pit fragments in fresh cherries Ron P. Haff, USDA-ARS-WRRC, Albany, CA (P. Liang, R.P. Haff)
11:30AM	162462345	Construction of Automatic Weighing Lysimeters to Measure Evapotranspiration of Individual Plants Ali Mirzakhani Nafchi, Clemson University, Blackville, SC (J. O. Payero, A. Mirzakhani Nafchi, R. Davis)	12:15PM	162460644	Spectral differentiation among yellow rust, powdery mildew and aphid in winter wheat Jingcheng Zhang, Hangzhou Dianzi University, College of Life Information Science and Instrument Engineering, Hangzhou, China (L. Yuan, H. Zhang, Z. Bao, J. Zhang)
11:45AM	162461861	Comparison of traditional path assignment for multiple vehicles with computer generated one in agricultural field context Hasan Seyyedhasani, University of Kentucky, Lexington, KY (H. Seyyedhasani, J. Dvorak)	12:30PM	162460884	Discriminate copper contamination of fresh tobacco leaf based on laser induced breakdown spectroscopy Kunlin Song, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (K. Song, F. Liu, W. Kong, J. Peng, L. Ye, Y. He)

Monday, July 18 - 9:30AM - 12:45PM

SESSION 106

SPECTROSCOPIC SENSING

Moderator: Colm O'Donnell, University College Dublin, Dublin, Ireland

LOCATION: Coronado E

Time	Paper #	Title/Authors
9:30A		Introduction - Colm O'Donnell, Moderator
9:35AM	162459819	Detection and classification of Salmonella serotypes using spectral signatures collected by Fourier Transform Infrared (FT-IR) spectroscopy Jaya Sundaram, University of Georgia, Athens, GA (J. Sundaram, B. Park, A. Hinton, Jr.)
9:50AM	162461231	Effect of phlobaphenes on predicting total anthocyanin content of corn by near infrared spectroscopy Mary-Grace Danao, UIUC, Urbana, IL (A. Mangalvedhe, M. Danao, M. Paulsmeyer, J.A. Juvik, V. Singh, K.D. Rausch)
10:05AM	162459939	Assessment of the mineral nutrient status of fresh grape leaves using laser-induced breakdown spectroscopy Peter N. Schaare, The New Zealand Institute for Plant and Food Research Limited, Hamilton, New Zealand (P.N. Schaare, M. Seelye)
10:20AM	162460415	Detection of Sugar-acid Value of Tomato During Storage Using NIR Spectroscopy Xiaochun Zheng, China Agricultural University, Beijing, China (F. Wang, Y. Li, Y. Peng, W. Wang, X. Zheng)
10:35AM	162457595	Non-destructive NIR Detection of Zebra Chip disease in Whole Potatoes Peishih Liang, USDAARS, Albany, CA (P. Liang, R.P. Haff)
10:50AM	162461524	Potato soft rot detection under different bulk storage conditions using Field Asymmetric Ion Mobility Spectrometry (FAIMS) Rajeev R. Sinha, Department of Biological Systems Engineering, Washington State University, Pullman, WA (R.R. Sinha, L.R. Khot, B. Schroeder)
11:05AM		Break
11:15AM	162458939	Citrus disease classification based on ant colony optimization Yao Zhang, University of Florida, Gainesville, FL, United States (Y. Zhang, W. Lee, D. Choi, M. Li)

Monday, July 18 - 9:30AM - 12:15PM

SESSION 107

3D AND HIGH-DIMENSIONAL IMAGING FOR SENSING AND AUTOMATION – Sponsored by ITSC-312

Moderator: Seung-Chul Yoon, USDA-ARS, Athens, GA

LOCATION: Coronado F

Time	Paper #	Title/Authors
9:30AM		Introduction -
9:35AM	162455540	Estimating Citrus Canopy Profile and Volume using an Array of Range Sensors and 3D Mapping Sanjeev Gangadharan, University of Florida, Gainesville, FL (S. Gangadharan)
9:50AM	162444593	Comparison of Structure-from-Motion and Stereo Vision Techniques for Full In-Field 3D Reconstruction and Phenotyping of Plants: An Investigation in Sunflower Thuy T. Nguyen, University of California, Davis, Davis, CA (T.T. Nguyen, D.C. Slaughter, B.T. Townsley, L. Carriedo, J.N. Maloof, N. Sinha)
10:05AM	162452828	A citrus yield forecasting system using Kinect depth and infrared sensors Daeun Choi, University of Florida, Gainesville, FL (D. Choi, W. Lee, J.K. Schueller, R. Ehsani, F.M. Roka)
10:20AM	162460814	Plant Recognition and Localization using 2D+3D Computer Vision for Robotic Intra-row Weed Control Jingyao Gai, Iowa State University, Ames, IA (J. Gai, L. Tang, B. Steward)
10:35AM		Break
10:45AM	162457246	Identification of Red Raspberry Floricanes and Primocanes using Hyperspectral Sensing Aadit Shrestha, Washington State University, Prosser, WA (A. Shrestha, M. Karkee, Q. Zhang)

MONDAY, JULY 18

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

SESSION 108

UAV FOR PRECISION AGRICULTURE

– Sponsored by ITSC-318

Moderator: Yan-Fu Kuo, National Taiwan University, Taipei, Taiwan

LOCATION: Coronado G

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460907	Simulation and optimization of multi spray factors in UAV Liping Zhou, Zhejiang University, Hangzhou, China (L. Zhou, Y. He)
9:50AM	162458189	Performance Study of a Multi-rotor Unmanned Aerial Vehicle (UAV) based Chemical Application System Hang Zhu, Jilin University, Changchun, IL, China (H. Zhu, A.P. Anderson, L. Li, L. Tian)
10:05AM	162458816	Onboard Strawberry Disease Geolocation using an UAV in Hover Christian A. Garcia, University of Central Florida, Orlando, FL (C.A. Garcia, Y. Xu)
10:20AM		Break
10:30AM	162459302	Nitrogen Rate Prescription Maps created using UAV-acquired Aerial Imagery in Support of Nitrogen Use Efficiency Studies on the Eastern Shore of Maryland Travis Ford, University of Maryland Eastern Shore, Princess Anne, MD (C. Hartman, A. Nagchaudhuri, T. Ford)
10:45AM	162447873	Development of a Real-Time Image Processing System for UAS Systems in Agriculture Randy R. Price, LSU AgCenter, Alexandria, LA (R.R. Price)

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

SESSION 109

ADVANCES IN SOIL-PLANT-MACHINE DYNAMICS

– Sponsored by MS-45

Moderators: Andrew Klopfenstein, OH, Shrinivasa Upadhyaya, CA
Thomas Way, USDA-ARS National Soil Dynamics Lab, Auburn, AL

LOCATION: Coronado M

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162462402	Determination of In-situ Engineering Properties of Soil Using an Inverse Solution Technique that Employs a Rotatable Central Composite Design Qingsong Zhang, Huazhong Agriculture University, Wuhan, CA, China (Q. Zhang, X. Li, S. Upadhyaya)
9:50AM	162460904	Impact of Machine Mass on the Productivity of US Farms Compared to Soil Cone Penetrometer Data Andrew A. Klopfenstein, The Ohio State University, Columbus, OH (A.A. Klopfenstein, S. Shearer)
10:05AM	162460571	Physical and mechanical properties of Zanthoxylum at harvesting time Longsheng Fu, Northwest A&F University, Yangling, China (Y. Feng, J. Peng, S. Sun, L. Fu)
10:20AM		Break
10:30AM	162461460	The Reaction of Maize (za maize) planted in a Sandy Loam Soil Incorporated with Organic and Inorganic Materials before Tra Traffic Application John O. Ohu, University of Maiduguri, Nigeria, Maiduguri, Nigeria (J.O. Ohu, E. Mamman)
10:45AM	162457931	Development of Tractor Driving Simulator: Nonlinear Dynamics of the Developed System Kenshi Sakai, Tokyo University of Agriculture and Technology, Fuchu, Japan (K. Sakai, M. Watanabe)

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

SESSION 110

AUTOMATION AND ROBOTICS FOR SPECIALTY CROPS

– Sponsored by MS-48

Moderator: Manoj Karkee

LOCATION: Coronado N

Time	Paper #	Title/Authors
9:30AM		Introduction
9:30AM	162459786	Development and tests of a self-propelled cabbage harvester in China dongdong du, Zhejiang University, Hangzhou, China (d. du, L. Xie, J. Wang, F. Deng)
9:45AM	162462088	A Robotic Platform “Bin-Dog” for Bin Management in Orchard Environment Yunxiang Ye, Washington State University, Prosser, WA (Y. Ye, L. He, Q. Zhang)
10:00AM	162461363	Economic Analysis of Row Cover Insect Exclusion for Cucurbit Crops Mark Hanna, Iowa State University, Ames, IA (M. Hanna, D. Polk, K. Rosentrater, B. Steward)
10:15AM	162460666	A self-adapting shaker for vibratory harvesting fruit Jianneng Chen, Zhejiang Sci-Tech University, Hangzhou, China (L. He, J. Chen, C. Wu, X. Du, G. Li)
10:45AM		Break
10:55AM	162455128	Development and Performance Evaluation of a Vacuum Powered Robotic Orange Harvesting End-effector Kyusuk You, University of Florida, Gainesville, FL (K. You, T.F. Burks)
11:10AM	162458883	The Design of an Automation Process for the Steam Treatment of Citrus Trees Carlos A. Merchan, University of Central Florida, Orlando, FL (C.A. Merchan, Y. Xu, R. Ehsani, J. Trotochaud)
11:25AM	162461343	Desin and Simulation of Seed Distributer for the Vacuum Low-temperature Plasma Seed Processing Equipment Base on EDEM Changbin He, College of Engineering, China Agricultural University, Beijing, China (J. Feng, A. Pang, D. Wang, G. Wang, L. Liu, L. Shuai, C. He)
11:40AM	162456923	A Study on Intercepting Falling Fruits with Canopy-Penetrating Rods Joshua P. Munic, University of California, Davis, Davis, CA (J.P. Munic, S.G. Vougioukas, R. Arikapudi)

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

SESSION 111

MACHINERY SYSTEMS FOR CROP PRODUCTION - PART 1

– Sponsored by MS-49

Moderator: Niels Dybro

LOCATION: Coronado R

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461895	A Novel Adaptive Canopy Shaking System for Citrus Mechanical Harvesting Yingjun Pu, University of Florida, Department of Agricultural and Biological Engineering, Citrus Research & Education Center, 700 Experiment Station Road, Lake Alfred, FL, United States (Y. Pu, R. Ehsani, F. Yang)
9:50AM	162461420	A Shake and Catch Harvesting System for ‘Jazz’ Apples Trained in Vertical Fruiting Wall Architecture Long He, CPAAS, Washington State University, Prosser, WA (L. He, H. Fu, D. Sun, M. Karkee, Q. Zhang)
10:05AM	162456644	Economic analysis of a self-propelled apple harvest and in-field presorting system for the apple industry Zhao Zhang, USDA-ARS-Sugarbeet and Bean Research Unit, East Lansing, MI (z. zhang, A.K. Pothula, r. lu)

MONDAY, JULY 18

10:20AM	162460060	Study in the effect of excitation frequency on the fruit trees acceleration response Huan Lin, Nanjing Forestry University, Nanjing, China (H. Lin, L. Xu, Y. Xuan, W. Zhou, L. Weng, J. WANG)
10:35AM	162460605	Parameter optimization experiment of impact hybrid rice pollination machine Jun Chen, Department of Biosystems Engineering and food science, Zhejiang University, Hangzhou, China (J. Chen, Y. Wang, J. Wang, Z. He)
10:50AM		Break
11:00AM	162455891	Development and Field Trials of Thermotherapy Systems for Combating Citrus Greening (Huanglong-bing) Joseph Trotochaud, University of Florida, Lake Alfred, FL (J. Trotochaud, R. Ehsani)
11:15AM	162459215	Identifying Potential Mechanization Options for Use in Cocoa Farms Cininta Pertiwi, University of Florida, Gainesville, FL (C. Pertiwi, R. Ehsani, K. Ingram)
11:45AM	162455876	Coating of Hulled Extra-large Confectionary Sunflower Kernels for Improved Plantability and Viability Ewumbua Monono, Agricultural and Biosystems Engineering, North Dakota State University, Fargo, ND (H. Sidhu, D. Haagenson, S. Bajwa, G.C. Bora, B. Johnson, E. Monono, D. Wiesenborn)

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

SESSION 112

PRECISION AGRICULTURE - POSTERS – Sponsored by MS-54

Moderator: H Mark Hanna

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
1	162459617	The Development in Research on the Variable Rate Fertilizer Applicator Cailling Liu, China Agricultural University, Beijing, China (Y. Li, C. Liu, T. Ma, Y. Wang)
2	162462813	Development of an Algorithm for Goldenrod Detection using Digital Image Processing Techniques Tanzeel u. Rehman, Dalhousie University, Agricultural Campus, Truro, Canada (T.u. Rehman, Q. Zaman, A. Schumann, Y.K. Chang)
3	162462821	Hydraulic System Modeling and Optimization to Achieve Performance Characteristics Brian Steward, Iowa State University, Ankeny, IA (K. Kline, B. Steward)
4	162461162	Atmospheric stability determination using fine time-step intervals for timing of aerial application Yanbo Huang, USDA ARS, Stoneville, MS (Y. Huang, S. Thomson)

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

SESSION 113

PRODUCTION, PROCESSING AND CONVERSION OF ALGAE FOR BIOFUELS

– Sponsored by MS-23, ES

Moderator: Sudhagar Mani, University of Georgia, Athens, GA

LOCATION: Coronado Q

Time	Paper #	Title/Authors
9:30AM		Introduction -
9:35AM	162462455	The Influence of Media Ingredients and pH on the Growth of Chloromonas rosae var. psychrophila Czarena Crofcheck, University of Kentucky, Lexington, KY (C. Crofcheck, C. Zheng, A. Shea, M. Crocker)

9:50AM	162461689	Microwave Assisted Pyrolysis of Oklahoma Native Microalgae Strain SP46 for Bio-Oil Production Nurhan T. Dunford, Oklahoma State University, Stillwater, OK (N.T. Dunford, N. Zhou)
10:05AM	162461397	Ammonia Fungi Pelletization of Microalgae for Treatment of High Strength Wastewater Tyler J. Barzee, University of California Davis, Davis, CA (T.J. Barzee, R. Zhang, Z. Fan, H. El-Mashad)
10:20AM		Break
10:30AM	162460302	Microalgae logistics modeling and analysis Shahab Sokhansanj, Oak Ridge National Lab, North Vancouver, Canada (S. Sokhansanj, E. Webb)
10:45AM	162459946	Conversion of microalgal biomass to green diesel via the simultaneous extraction- transesterification and hydrotreating processes Bo Zhang, North Carolina A&T State UniversityNorth Carolina A&T State University, Greensboro, NC (B. Zhang, L. Wang, R. Li, A. Shahbazi)
11:00AM	162455974	Thermogravimetric analysis of bio-crude from hydrothermal liquefaction of Enteromorpha prolifera Jixiang Zhang, China University of Petroleum - Beijing, Beijing, China (J. Zhang, B. Jiang, D. Wang)

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

SESSION 114

NRES DISTINGUISHED LECTURE SERIES - INVITED – Sponsored by NRES

Moderator: Sherry Hunt, USDA-ARS

LOCATION: Fiesta 5

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162493598	Agricultural Impacts on Water Resources: Recommendations for Leading Applied Research Daren Harmel, USDA-ARS, Temple, TX (D. Harmel)
10:05AM	162493839	A Look at Irrigation Technology Advancements through the Rear View Mirror, the Kansas Experience Danny H. Rogers, Kansas State Univ, Manhattan, KS (D.H. Rogers)
10:35AM		Break
10:45AM	162493842	Reflections - Better Irrigation by Using What We Already Know Robert D. von Bernuth, Retired, Waynesboro, VA (R.D. von Bernuth)
11:15AM	162493862	From an Undergraduate Agricultural Engineer to Head of an ABE Department: Some Things I've Learned Along the Way Bernard Engel, Purdue University, West Lafayette, IN (B. Engel)

MONDAY, JULY 18

Monday, July 18 - 10:30AM-12:30PM

SESSION 115

NATURAL RESOURCES AND ENVIRONMENTAL SYSTEMS POSTER SESSION - POSTERS

– Sponsored by NRES-21, NRES-22, NRES-23, NRES-24, NRES-25, NRES-26

Moderators:

Carmen Agouridis, University of Kentucky, Lexington, KY,
Srinivasulu Ale, Texas A&M AgriLife Research, Vernon, TX,
Garey Fox, Oklahoma State University, Stillwater, OK,
Fouad Jaber, Texas A&M AgriLife, Dallas, TX,
Freddie Lamm, Kansas State University, Colby, KS,
Teng Lim, University of Missouri, Columbia, MO,
Debasmita Misra, University of Alaska, Fairbanks, AK,
Mindy Spiehs, USDA ARS, Clay Center, NE
Yongping Yuan, USEPA-Office of Research and Development, Research Triangle Park, NC

LOCATION Veracruz B:

Poster #	Paper #	Title/Authors
6	162436345	Visualization and software applications of 3D geological models Mi Lin, McGill University, Montreal, Canada (M. Lin, H. Peng, A. Biswas)
7	162461431	Influence of changes in land use and cover in water and energy balances in Brazil using multi-temporal remote sensing data. Celso B. de Melo Ribeiro, Federal University of Juiz de Fora, Juiz de Fora, Brazil (A.B. de Carvalho, C.B. de Melo Ribeiro, A.B. Mirambell)
8	162462942	Effects of Climate Change on Hydrology of the Nueces River Basin in South Texas Tushar Sinha, Texas A&M University - Kingsville, Kingsville, TX (J. Ji, T. Sinha)
9	162460848	Evaporation estimates for two hydroelectric power plants reservoirs in the Tocantins river basin - Brazil Demetrius D. Silva, Universidade Federal de Viçosa, VI-COSA, Brazil (C.D. Coelho, D.D. Silva, M.C. Moreira, Â.M. LANA, G.C. SEDIYAMA, S.B. Pereira)
10	162460855	Applying the SAC-SMA hydrologic model to a tropical watershed in Brazil Demetrius D. Silva, Universidade Federal de Viçosa, VI-COSA, Brazil (D.D. Silva, E.M. Uliana, M.C. Moreira, S.B. Pereira)
11	162460830	Water footprint of hydroelectricity: a case study for two hydropower plants in the Tocantins river basin - Brazil Demetrius D. Silva, Universidade Federal de Viçosa, VI-COSA, Brazil (C.D. Coelho, D.D. Silva, M.C. Moreira, G.C. Sedyama, Â.M. Lana, S.B. Pereira)
12	162461062	Temporal assessment of the Arroyo Pelotas water quality, South of the Rio Grande do Sul state, Brazil Demetrius D. Silva, UFV, Viçosa, Brazil (H. Guedes, L. Centeno, S. Ceconello, D.D. Silva, S. Beskow, R. Damé)
13	162459865	Impact of groundwater withdrawals for irrigation on aquifer storage in Indiana Sanoar Rahman, Purdue University, West Lafayette, IN (S. Rahman, L. Bowling)
14	162459838	Temporal Variations in Baseflow for the Little River Experimental Watershed in South Georgia David D. Bosch, USDA-ARS, SEWRL, Tifton, GA (D.D. Bosch, R. Williams, J. Arnold, P. Allen)

15	162460300	Impacts of Land Use and Climate Change on Hydrological Processes in James River Watershed Manashi Paul, South Dakota State University, Brookings, SD (M. Paul, L. Ahiablame, M. Rajib)
16	162461303	Assessing sensitivity of two Indianan river basins water quality, quantity and agriculture to drought Nina Omani, Purdue University, West Lafayette, IN (N. Omani, I. Chaubey, S. Sharma)
17	162462724	Reliability of statistical downscaling of GCM output over the Great region Sushant Mehan, Purdue University, West Lafayette, IN (S. Mehan, M. Gitau)
18	162457311	Evaluation of climate and land use changes on hydrologic processes in the Salt River Basin, Missouri, United States. Quang Phung, Department of Bioengineering, University of Missouri, Columbia, MO (Q. Phung, A. Thompson, C. Baffaut, C. Costello, J. Sadler, A. Lupo, B. Svoma, S. Gautam)
19	162461537	Assessment of climate change impacts on drought in Virginia River basins Hyunwoo Kang, Virginia Tech, Blacksburg, VA (H. Kang, V. Sridhar)
20	162461528	Analysis of Meteorological Droughts using Copulas in a Changing Climate Madusanka Thilakarathne, Virginia Polytechnic Institute and State University, Blacksburg, VA (M. Thi21lakarathne, E. Naeini, V. Sridhar)
21	162455904	Comparison of computer models in estimating hydrology and water quality at watershed scales Yaoze Liu, Purdue University, West Lafayette, IN (Y. Liu, B. Engel, L. Theller)
22	162462613	Representing effectiveness of best management practices over time Yaoze Liu, Purdue University, West Lafayette, IN (Y. Liu, B. Engel, L. Theller)
23	162463307	Reconstructing the historical water regime of the contributing basins to the Hawizeh marsh: Implications of water control structures Prasad Daggupati, Texas A & M University, College Station, TX (P. Daggupati)
24	162427943	Analysis of Best Management Practices Implementation on Water Quality Using the Soil and Water Assessment Tool Jason C. Motsinger, University of Illinois, Urbana, IL (J.C. Motsinger, R. Bhattarai, P.K. Kalita)
25	162461806	Best management practice (BMP) evaluations in the Maumee River watershed using a calibrated SWAT model Chelsie Boles, LimnoTech, Ann Arbor, MI (C. Boles, T. Redder, J. Depinto)
26	162448084	Evaluation of Best Management Practices on Water Quality and Quantity using SWAT and remote sensing data Prem Parajuli, Mississippi State University, Starkville, MS (X. Ni, P. Parajuli, Y. Ouyang)
27	162461809	The dynamics of farmers' tillage-crop choices: an application of Markov chain model using aggregate data for water quality modeling and management Dat Q. Tran, North Carolina A&T State University, Greensboro, NC (D.Q. Tran, L. Kurkalova)
28	162462865	Bacteria transport simulation using APEX model in the Toenepi watershed, New Zealand Eunmi Hong, USDA-ARS, College park, MD (E. Hong, Y. Pachepsky, Y. Park, D. Shelton, R. Muirhead)
29	162456114	Spatio-temporal Variation of Nutrients and Sediments in Two Agricultural Watersheds in Northeast Arkansas Niroj Aryal, USDA-ARS, DWMRU, Jonesboro, AR (N. Aryal, M.L. Reba)
30	162462490	Retrofitting aged stormwater detention areas for increased nitrogen and phosphorus retention Rajendra P. Sishodia, University of Florida, Immokalee, FL (S. Shukla, R.P. Sishodia, a. shukla)

MONDAY, JULY 18

- | | |
|--|--|
| <p>31 162461075 Simulating the of impacts potential future climate change and land management scenarios on microbial water quality
Rory Coffey, Oak Ridge Associated Universities, Arlington, VA (R. Coffey, T. Johnson)</p> <p>32 162456240 Water Quality Management in the Holland Marsh, Ontario
Genevieve Grenon, McGill University, Ste-Anne-de-Bellevue, Canada (G. Grenon, C. Madramootoo, B. Singh, N. Gaj)</p> <p>33 162430735 Vegetated Treatment Area Effectiveness at Reducing Nutrient and E. coli Runoff from Small Swine Operations in Central Texas
Daren Harmel, USDA-ARS, Temple, TX (D. Harmel, K. Higgs, R. Pampell, K. Wagner, P. Smith, r. Haney, D. Smith, T. Gentry)</p> <p>34 162430002 Expansion of the MANAGE Database with Forest and Drainage Studies
Daren Harmel, USDA-ARS, Temple, TX (D. Harmel, L. Christianson, M. McBroom, D. Smith, K. Higgs)</p> <p>35 162459352 Reduction of Labor in Weeding Activity due to Weed Suppression in Conservation Agriculture Vegetable Production
Don Immanuel A. Edralin, North Carolina Agricultural and Technical State University, Greensboro, NC (D.A. Edralin, G. Sigua, M.R. Reyes, G. Gayle, M.J. Mulvaney)</p> <p>36 162458049 Sweet corn production with different mulches, varieties, and planting dates in North Dakota
Hannah Bye, North Dakota State University, Fargo, ND (H. Bye, A. Gatzke, J. Ransom, X. Jia)</p> <p>37 162461393 An experimental study on the relationship between soil moisture and infiltration in frozen soils in the Red River Basin (RRB)
Debjit Roy, North Dakota State University, Fargo, ND (D. Roy, X. Jia, D. Steele, X. Chu, Z. Lin)</p> <p>38 162461222 Impacts of strategic tillage on soil erosion, nutrient loss in runoff and nitrous oxide emission
Alice R. Melland, University of Southern Queensland, Toowoomba, Australia (A.R. Melland, D.L. Antille, Y.P. Dang)</p> <p>39 162462589 Slope length effects on processes of phosphorus loss under simulated rainfall
Yuguo Han, Beijing Forestry University, Beijing, China (Y. Han)</p> <p>40 162461900 Modeling of occurrence of Forest Fire Risk in the city of Barreiras
Charles C. Santana, University os State of Bahia, Barreiras, Brazil (M.A. Silva, C.C. Santana, S.A. Souza, T.K. Souza)</p> <p>41 162459083 Influence of thinning and burning on soil, biomass and nutrient allocation in pine plantations in the Florida panhandle
J. M. Grace, USDA-Forest Service, Southern Research Station, SRS-4353, Tallahassee, FL (K.J. Nwaokorie, O.S. Mbuya, J.M. Grace)</p> <p>42 162457473 Calculating the Cost of Typical Conservation Practices Across the US
William R. Reck, USDA-NRCS, Washington, (W.R. Reck)</p> <p>43 162458164 Linear sediment control BMPs' effect on stormwater runoff turbidity from highway construction.
Charles V. Privette, Clemson University, Clemson, SC (C.V. Privette, C. Sawyer, D. David)</p> <p>44 162461210 Assessing erosion processes associated with establishment of coal seam gas pipeline infrastructure in Queensland, Australia
Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (C.A. Vacher, D.L. Antille, N.I. Huth, S.R. Raine)</p> <p>45 162460165 Soil erosion control with different plant configurations in a Mediterranean environment
Francesco Gentile, Università di Bari, BARI, Italy (G. Romano, F.Z. Lahmer, M. Palasciano, N. Lamaddalena, F. Gentile)</p> | <p>46 162460606 Snowmelt Runoff Modeling and Impact of Climate Change in the Himalayan River Basin
Ashish Pandey, IIT Roorkee, Roorkee, India (B.S. Dhami, A. Pandey, A. Gautam)</p> <p>47 162430448 Response of Soil Organic Matter to Changes in the differing intensities of grazing in semi-arid rangelands in Iran
Elnazsadat Hosseiniaghdam, University of Florida, Gainesville, FL (E. Hosseiniaghdam, B. Bahrami, S. Hosseiniaghdam, A. Ghorbani, A. Mohseni)</p> <p>48 162459934 Development of Remote Sensing Protocols for Inventorying Cover Crop Adoptions
Carolina Bermudez, Iowa State University, Ames, IA (C. Bermudez, A. Kaleita)</p> <p>49 162459772 Yield Response to Deficit Irrigation Strategies Based on Plant Available Water in Support of Precision Agriculture Studies in Field Corn
Travis Ford, University of Maryland Eastern Shore, Princess Anne, MD (T. Ford, A. Nagchaudhuri, C. Hartman)</p> <p>50 162459909 Towards dielectric water quality sensing: Characterization of ions in tile drain water
Amy Kaleita, Iowa State University, Ames, IA (B. Zimmerman, A. Kaleita)</p> <p>51 162461616 Simulating effects of drainage water management on drainage outflow and water quality using DRAIN-MOD-NII
Vinayak S. Shedekar, The Ohio State University, Columbus, OH (V.S. Shedekar, K. King, N. Fausey, K. Islam, L. Brown)</p> <p>52 162456868 Evaluation of Land Suitability for Irrigation and Potential of Water Sources Using GIS and MCE Technique for Lake Tana Basin
Manoj Jha, North Carolina A & T State University, Greensboro, NC (T. Assefa, M. Jha, M.R. Reyes, R. Srinivasan, A. Worklul)</p> <p>53 162460820 Effects of lateral depth on spatial distribution of enzyme activities and nitrate in soil for subsurface drip irrigation applying treated sewage effluent
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li)</p> <p>54 162460810 Response of maize growth, nitrogen uptake, and yield to drip irrigation applying sewage effluent with different qualities
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li)</p> <p>55 162460816 Wetting patterns and E. coli distributions in sandy soil from a point source applying sewage effluents
Jiusheng Li, China Institute of Water Resources and Hydropower Research, Beijing, China (J. Li)</p> <p>56 162460822 Response of Corn for Silage to Water in a Semi-Arid Environment
Abdelaziz Nilahyane, University of Wyoming, Laramie, WY (A. Nilahyane, A. Islam, A. Garcia y Garcia, A. Mesbah)</p> <p>57 162461474 Comparison of Infiltration Rate and Hydraulic Conductivities of Three Dominant Soil Types in Federal University of Agriculture, Abeokuta Southwestern Nigeria
John O. Ohu, University of Maiduguri, Nigeria, Maiduguri, Nigeria (J.O. Ohu)</p> <p>58 162462872 Spatial variability of soil properties and its effect on corn production in the Southeast United States
Vaishali Sharda, Washington State University, Manhattan, KS (V. Sharda, c. handyside, R. McNider, G. Hoogenboom)</p> <p>59 162459654 Yield responses of sugarcane cultivars to different water regimes in Brazilian Savannah
Vinicius B. Bufon, Embrapa, Brasilia, Brazil (V.B. Bufon, N.C. Marcante)</p> <p>60 162461005 Water use efficiency and productivity of major cereal foods crops in Uganda
Nicholas Kiggundu, Makerere University, Kampala, Uganda (N. Kiggundu)</p> |
|--|--|

- | | |
|---|--|
| <p>61 162456909 An analysis on influencing factors on soil salt distribution in Hetao irrigation district of China
Shaoyuan Feng, Yangzhou University, Yangzhou, China (S. Feng, J. Wan, T. Lou, T. Su)</p> <p>62 162461192 Effects of oxygenating rhizosphere under ameliorating waterlogging stress on morphological and physiological characteristics of summer maize.
Hengji Qin, Hohai University, Nanjing, China (H. Qin, I. Liao, X. Shao)</p> <p>63 162460172 Tuber yield, irrigation water use efficiency and starch content of two potato varieties as affected by drip tape and solid set irrigation systems
Behnaz Molaei, Department of Water Engineering, College of Agriculture, Isfahan University of Technology, Isfahan, Iran (the Islamic Republic of) (B. Molaei, M. Gheysari, B. Mostafazadeh-Fard, E. Landi, K. Molaei)</p> <p>64 162456751 Effect of fertigation on short-term N₂O and CH₄ emissions, and yield of cotton grown in a black Vertisol
Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (D.L. Antille, A.C. McCarthy)</p> <p>65 162456070 Analysis of water markets as an adaptive tool to water scarcity in SE Spain's agriculture
Bernardo Martin-Gorriz, Universidad Politecnica de Cartagena, Cartagena, Spain (V. Martinez-Alvarez, J. Calatrava, D. Martinez-Granados, B. Martin-Gorriz)</p> <p>66 162460633 Effect of Irrigation Amount and Uniformity on Alfalfa Yield and Quality under Center Pivot Irrigation System
Maona Li, China Agricultural University, Beijing, China (M. Li, H. Yan, Y. Wang, R. Sui)</p> <p>67 162478435 Improving Irrigation and Nitrogen Best Management Practices (BMPs) in Corn and Peanut Rotations in North Florida
Maria I. Zamora Re, University of Florida, Gainesville, FL (M.I. Zamora Re)</p> <p>68 162514005 Salinization of Soil Under the Optimal Ratio of Phosphorus Nitrogen Levels on the Influence of Soil Water and Salt and Yield
Shu-Qing Yang, Inner Mongolia Agricultural University, Inner Mongolia, China (S. Yang, X. Fu, D. Liu, H. Zhang)</p> <p>69 162461412 Crop coefficient and cumulative thermal unit of <i>Jatropha curcas</i> L.
Bruno P. Lena, University of Sao Paulo, Piracicaba, Brazil (B.P. Lena, M.V. Folegatti, S. Irmak)</p> <p>70 162461462 Development of crop coefficients for scheduling irrigation of crops in humid environments
Sungkwang Mun, Mississippi State University, Mississippi State, MS (S. Mun, R. Prabhu, G. Sassenrath, N. Lee, M. Murphy, A.M. Schmidt, J. Corbitt)</p> <p>71 162460209 Analysis of crop coefficient for the highland barley and oat in Tibet high altitude farming areas
Pengcheng Tang, Institute of Water Resources for Pastoral Area, China Institute of Water Resources and Hydropower Research, Hohhot, China (P. Tang, B. Xu, Z. Gao, H. Li, S. Miao)</p> <p>72 162461830 Modeling Large-scale Crop Irrigation Requirements and Surface Water Availability in the Platte River Basin
Mitchell Maguire, University of Nebraska-Lincoln, Lincoln, NE (M. Maguire, D. Grier, D. Rico, F. Muñoz Arriola)</p> <p>73 162461053 Comparison of irrigation scheduling with water balance and sensor-based methods for a variable rate irrigation system of center pivot
Weixia Zhao, China Institute of Water Resources and Hydropower Research, Beijing, China (W. Zhao, J. Li, Y. Li)</p> <p>74 162462910 Modeling Large-scale Crop Irrigation Requirements and Surface Water Availability in the Platte River Basin
Mitchell Maguire, University of Nebraska-Lincoln, Lincoln, NE (M. Maguire, F. Muñoz Arriola, D. Rico, D. Grier)</p> | <p>75 162460862 Effects of Hydroclimate on In-ditch Water Quality: Case Study of Two Tailwater Recovery Ditches in Mississippi
Juan D. Pérez-Gutiérrez, Mississippi State University, Mississippi State, MS (J.D. Pérez-Gutiérrez, J.O. Paz, M.M. Tagert, Y. Ouyang, M. Sepehrifar)</p> <p>76 162462837 Drought-stressed tree saplings grown in soil amended with super absorbent polymer
Maryam Kargar, McGill University, Montreal, Canada (M. Kargar, R. Suresh, M. Legrand, P. Jutras, O. Clark, S. Prasher)</p> <p>77 162457917 Influence of El Niño Southern Oscillation (ENSO) on the irrigation scheduling for tomato production in Mozambique.
Eduardo Gelcer, University of Florida, Gainesville, FL (E. Gelcer, D. Perondi, C. Fraisse, L. Zotarelli)</p> <p>78 162460112 Water Savings in Maize Under Deficit Irrigation with a Shallow Groundwater in a Semi-Arid Region
Xiaoyu Gao, China Agricultural University, Beijing, China (X. Gao, Z. Huo, g. huang, T. Steenhuis)</p> <p>79 162450220 Climate Change and Irrigation Withdrawal Effects on Groundwater Availability in Semi-Arid South India
Rajendra P. Sishodia, University of Florida, Immokalee, FL (R.P. Sishodia, S. Shukla, W. Graham, S.P. Wani)</p> <p>80 162460110 Groundwater contribution to evapotranspiration in an arid irrigation region with shallow groundwater
Zhongyi Liu, China Agricultural University, Beijing, China (Z. Liu, h. chen, Z. Huo, f. wang, s. clinton)</p> <p>81 162460674 A Research on Return Flow in Multi-reservoir and Gravity Irrigation Districts
Li Yao, Zhejiang University, Hangzhou, China (L. Yao, Z. Wang, Z. Guo)</p> <p>82 162462974 Improving Surface Irrigation Efficiencies: A Review
Vaishali Kandpal, University of Arkansas, Fayetteville, AR (V. Kandpal, C. Henry)</p> <p>83 162459705 Estimating the ratio of pond size to irrigated soybeans land in Mississippi: A case study
Ying Ouyang, USDA Forest Service, Mississippi State, MS (Y. Ouyang, G. Feng, J. Read)</p> <p>84 162475328 A Study on Improvement of Dangerous Reservoir Data Base using Unmanned Aerial Vehicle System
Yong-Seong Kim, Kangwon National University, Chuncheon-si, Korea (the Republic of) (Y. Kim, J. Kim, H. Lim, S. Park, J. Kim)</p> <p>85 162475314 A Study on Application of Storm and Flood Damage for Risk-Weighted Value for Applying to Individual Insurance Rate
Yong-Seong Kim, Kangwon National University, Chuncheon-si, Korea (the Republic of) (Y. Kim, H. Lim, H. Lee, S. Park, J. Kim, J. Kim)</p> <p>86 162460221 Simplified Limited Data Hargreaves' ET₀ Formular Adapted for High Elevation Locations
Bing Xu, Institute of Water Resources for Pastoral Area, China Institute of Water Resources and Hydropower Research, Hohhot, China (B. Xu, P. Tang, H. Li, S. Miao, Z. Gao)</p> <p>87 162459763 Spatiotemporal variability of extreme precipitation events in the Kentucky River Basin
Somsubhra Chattopadhyay, University of Kentucky, Lexington, KY (S. Chattopadhyay, D. Edwards)</p> <p>88 162461563 Precipitation characteristics in a changing climate over Southeastern Virginia for urban flooding
Prasanth Valayamkunnath, Virginia Tech, Blacksburg, VA (P. Valayamkunnath, M. Billah, V. Sridhar)</p> <p>89 162461314 Lessons Learned in Stepped Chute Research
Sherry L. Hunt, USDA-ARS, Stillwater, OK (S.L. Hunt, K. Kadavy)</p> <p>90 162461177 The recreation benefits of NRCS Flood Control Dams in Virginia
Alica J. Ketchum, USDA, Mechanicsville, VA (A.J. Ketchum, M.J. Lyons)</p> <p>91 162414202 Finite Element Analysis for Filter Diaphragm Design in Dam Rehabilitation Projects
Benjamin C. Doerge, USDA-NRCS, Fort Worth, TX (B.C. Doerge)</p> |
|---|--|

MONDAY, JULY 18

92	162461096	Sedimentation Prediction Models for Gobindsagar Reservoir Umesh C. Chaube, IIT Roorkee, Roorkee, India (U.C. Chaube)	108	162460351	Trends and hotspots of crop species diversity in the contiguous US Jonathan Aguilar, Kansas State University, Garden City, KS (J. Aguilar, J. Hendrickson, G. Gramig, M. Liebig, F. Forcella, D. Archer)
93	162460152	Performance Evaluation of Low Water Crossings in Illinois Sudip Gautam, University of Illinois, Champaign, IL (S. Gautam, R. Bhattarai)	109	162461259	A comparison of five forest interception models Anna C. Linhoss, Mississippi State University, Starkville, MS (A.C. Linhoss)
94	162460730	Investigation of the effect of expansion angle on gradually expanding hydraulic jump in trapezoidal channel Hossein Ghoveisi, University of Florida, Gainesville, FL (H. Ghoveisi, M. Omid, G.A. Kiker)	110	162461761	Quantifying Wetland Evapotranspiration Using Eddy Covariance Ian K. Hahus, University of Florida, Gainesville, FL (I.K. Hahus, K. Migliaccio, W. Shoemaker, D. Surratt)
95	162460728	Investigation of kinetic adsorption of phosphorus with zeolit Hossein Ghoveisi, University of Florida, Gainesville, FL (H. Ghoveisi, G.A. Kiker)	111	162458746	Modeling sugarbeet for biofuel production using the Decision Support System for Agrotechnology Transfer (DSSAT) Mohammad J. Anar, North Dakota State University, Fargo, ND (M.J. Anar, Z. Lin)
96	162459893	Going Live: web-based mapping of groundwater-surface water interactions in an irrigated landscape Troy E. Gilmore, Conservation and Survey Division, School of Natural Resources, University of Nebraska-Lincoln, Lincoln, NE (T.E. Gilmore, D. Hallum, C. Hobza, J. Johnson)	112	162461728	Can we rejuvenate bioreactors using wetting and drying cycles? Bryan M. Maxwell, NCSU, Raleigh, NC (B.M. Maxwell, F. Birgand)
97	162458155	Georeferenced river sensor and video for water quality, aquatic habitat, fish population and streambank erosion mapping Paul Ayers, University of Tennessee, Knoxville, TN (P. Ayers)	113	162535807	Development of a Passive Water Delivery Rooting Module for Use in Microgravity Braydi C. McPherson-Hathaway, The Ohio State University, Hilliard, OH (B.C. McPherson-Hathaway, A. Jensen)
98	162432365	Sensitivity of Streambank Stability Assessment by Empirical Sediment Capacity Analysis Jordan D. Muell, Iowa State University, Ames, IA (J.D. Muell, J. Vogel)	114	162462860	Yield of Vegetables grown in Conservation agriculture with Unheated High Tunnels Don Immanuel A. Edralin, North Carolina Agricultural and Technical State University, Greensboro, NC (D.A. Edralin, M.R. Reyes)
99	162449427	Bankfull Regional Curves and Hydraulic Geometry Curves for the Eastern Kentucky Coalfields Ashlan Berry, University of Kentucky, Lexington, KY (A. Berry, C.T. Agouridis)	115	162529846	Effect of Bamboo Biochar on "Micro-Tom" Tomato Development and Postharvest Quality Ratna Suthar, University of Florida, Gainesville, FL (R. Suthar, B. Gao)
100	162461602	Measuring the Water Quality Impact of a Stream Restoration During Construction Danielle Winter, North Carolina State University, Raleigh, NC (D. Winter, F. Birgand, C. Lin)	117	162461268	Quantifying the impacts of a Cereal Rye cover crop on soil water content and temperature in Central Iowa Kristina Craft, Iowa State University, Ames, IA (K. Craft, M. Helmers, M. Castellano)
101	162449369	Long-Term Effects of Forestry Best Management Practices on Hydrology and Water Chemistry in Three Appalachian Headwater Catchments Carmen T. Agouridis, University of Kentucky, Lexington, KY (K. Wright, C.T. Agouridis, C. Barton)	118	2461594	Effect of winter cover cropping practices on nutrient cycling and maize yield. Jude A. Holscher, University of Illinois, Palestine, IL (J.A. Holscher, P. Davidson)
102	162460898	Shifting watershed boundaries in a low relief landscape: seasonality, identification, and implications Karl M. Wallace, University of Florida, Gainesville, FL (K.M. Wallace, S. Shukla)	119	2468317	Effect of Fertility Improvement on Tobacco-planted Soil Aggregate and Soil Carbon Pool Zhi-peng Li, Henan Agricultural University, Zhengzhou, China (X. Ye, Z. Li)
103	2461911	Reducing Pesticides from Nursery Runoff Using Constructed Wetlands John McMaine, Oklahoma State University, Stillwater, OK (J. McMaine, J. Vogel, J. Belden, G. Fox, M. Schnelle)	120	162461919	Valuing Organic Matter: Putting an economic value to organic matter in manure for building soil Daniel Andersen, Iowa State University, Ames, IA (D. Andersen)
104	162460978	Impact of Diurnal and Seasonal Variation of Raw Water Quality on Treatability: A Case of Gaba Complex Nicholas Kiggundu, Makerere University, Kampala, Uganda (N. Kiggundu)	121	162459634	Impacts of Surface Wind Speed and Deployment Duration on Measuring Accuracy of Closed Chamber Boyue Ji, China Agricultural University, Beijing, China (L. Yu, C. Wang, J. Liu, L. Ding, B. Li, Z. Shi, B. Ji)
105	162461179	Albedo estimated in different periods of the year and in two types of land use in western Bahia using satellite image Marcos A. Silva, University of State of Bahia, Barreiras, Brazil (M.A. Silva, C.C. Santana, A.N. Silva, W.P. Ferreira, T.K. Souza)	122	162461767	How about: Laboratory Evaluation of Co-digesting Beef Manure and Waste Kitchen Grease Ricardo G. Nogueira, University of São Paulo, Pirassununga, Brazil (R.G. Nogueira, T. Lim, W. Hao Qi)
106	162460094	Cradle-to-farm gate environmental impact assessment of beef production in the U.S. Northern Plains and Midwest Senorpe Asem-Hiablie, USDA-ARS, University Park, PA (S. Asem-Hiablie, C. Rotz)	123	162460357	Effects of ammonia and salinity on recycling digested effluent as dilution water for anaerobic digestion process Iftikhar Zeb, Washington State University, Pullman, WA (I. Zeb, J. Ma, C. Frear, G.K. Kafle)
107	162430462	Soil organic matter fractions and aggregate distribution in response to plant community changes Elnazsadat Hosseiniaghdam, University of Florida, Gainesville, FL (B. Bahrami, E. Hosseiniaghdam, A. Ghorbani, A. Mohseni, S. Hosseiniaghdam)	124	162461491	Changes in sludge accumulation of anaerobic swine lagoons receiving pretreated influent Matias Vanotti, USDA-ARS, Florence, SC (M. Vanotti, A. Szogi, D. Rashash)

MONDAY, JULY 18

125	162460616	Effect of HRTs of Wastewater After Anaerobic Digestion on Growth of <i>Desmodesmus</i> sp. Changbin He, College of Engineering, China Agricultural University, Beijing, China (A. Pang, Y. Zhou, F. Ji, C. Pang, C. He, J. Feng)
126	162460773	Post-Hydrothermal Liquefaction Wastewater Treatment at Supercritical Conditions Using Activated Carbon Catalysts Jamison T. Watson, University of Illinois, Urbana, IL (J.T. Watson, B. Si, Y. Zhang)
127	162457548	Optimization of Algae Production from Beef Manure Digestate and Runoff Holding Pond Effluent Amy M. Schmidt, University of Nebraska - Lincoln, Lincoln, NE (M. Goedecken, A.M. Schmidt, Y. Ge, G. Erickson, A. Watson)
128	162456252	Crop yield and phosphorus uptake as affected by long-term availability of phosphorus in swine manure Chin Tan, Agriculture & Agri-Food Canada, Harrow, Canada (T. Zhang, X. Hao, C. Tan, T. Welacky, Y. Wang)
129	162456242	Simulating crop yield, surface runoff and DRP loss in a clay loam soil of the Lake Erie region using EPIC model Chin Tan, Agriculture & Agri-Food Canada, Harrow, Canada (Z. Wang, T. Zhang, C. Tan)
130	162461877	Nutrient Leaching under Manure Staging and Sludge Drying Areas Rhonda Miller, Utah State University, Logan, UT (R. Miller, M. Jensen, T. Nielson, D. Tye)
131	162458559	Utilization of Biochar as a Filter Media to Capture Nutrients from Swine Manure Wastewater Sammy Sadaka, Univ. of Arkansas, Little Rock, AR (S. Sadaka)
132	162429987	Nutrient Cycling via Hydrochar Produced from Dairy Manure Brian He, University of Idaho, Moscow, ID (Z. Bi, G. Staggs, B. He)
133	162456971	Pathogen die-off in algal turf scrubbers John Rains, Auburn University, Auburn, AL (J. Rains, D.M. Biersch)

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

SESSION 116

PLANT, ANIMAL, AND FACILITY SYSTEMS DISTINGUISHED LECTURE SERIES - INVITED

– Sponsored by PAFS

Moderator: Jeremiah Davis, Auburn, AL

LOCATION: Coronado S

This series highlights the contributions of individuals whose work has advanced the structures and environment field. Keynote speakers are the 2015 recipients of the Henry Giese Structures and Environment Award and G.B. Gunlogson Countryside Engineering Award, followed with presentations by the 2015 PAFS Superior Paper recipients.

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162493919	Challenges and Emerging Needs for the Next Generation of Animal Production Facilities Jay D. Harmon, Iowa State University, Ames, IA (J.D. Harmon)
10:20AM	162493922	to come Gregory D. Williams, Facility Engineering Services, Springdale, AR (G.D. Williams)
11:05AM		Break
11:15AM	162493923	Effect of Measurement Density on Characterizing Air Velocity Distribution in Commercial Broiler Houses Brian D. Luck, University of Wisconsin-Madison, Madison, WI (B.D. Luck)

11:35AM	162493924	Heat and Moisture Production Rates of a Modern U.S. Swine Breeding, Gestation, and Farrowing Facility John P. Stinn, Iowa Select Farms, State Center, IA (J.P. Stinn, H. Xin)
---------	-----------	---

Monday, July 18 - 9:30AM - 10:45AM

SESSION 117

CHALLENGES IN LIGNOCELLULOSIC CONVERSION

– Sponsored by PRS-280, ES-220

Moderator: Veronica Mbaneme,

LOCATION: Fiesta 7

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162462237	Effect of biomass addition steps and intervals on ethanol production during fed-batch simultaneous saccharification and fermentation processes Ganti S. Murthy, Oregon State University, Corvallis, OR (H. Kadhum, G.S. Murthy)
9:50AM	162457229	Modified stochastic molecular model of cellulose hydrolysis by synergistic action of multiple enzymes Deepak Kumar, University of Illinois at Urbana-Champaign, Urbana, IL (D. Kumar, G.S. Murthy)
10:05AM	162454809	Enhanced Biological Ethanol Production from Syn-gas Using Novel Control Method Hasan Atiyeh, Oklahoma State University, Stillwater, OK (J.R. Phillips, H. Atiyeh, R.L. Huhnke)

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

SESSION 118

FOOD SAFETY ENGINEERING

– Sponsored by PRS-703

Moderator: Kingsly Ambrose

LOCATION: Fiesta 8

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162462401	Synergistic Effect of UV-light and Essential Oil for Inactivating <i>Escherichia coli</i> O157:H7 on Goat Meat Hema L. Degala, Fort Valley State University, Fort Valley, GA (H.L. Degala, A.K. Mahapatra, G. Kannan)
9:50AM	162461675	Ultraviolet light as a Novel Non-thermal Approach for Inactivation of Foodborne Pathogens in Food Industry: a Review Hema Degala, Fort Valley State University, Fort Valley, GA (H. Degala, J. Scott, A.K. Mahapatra, G. Kannan)
10:05AM	162461494	Development of a risk model for human <i>Toxoplasma gondii</i> infection from consumption of fresh pork in the United States Abani Pradhan, University of Maryland, College Park, MD (M. Guo, A. Pradhan)
10:20AM		Break
10:30AM	162461482	Recovery and concentration of microbial pathogens using a portable electroflotation system Daniel Jenkins, University of Hawaii at Manoa, Honolulu, HI (L. Diaz, D. Jenkins)
10:45AM	162461471	Package Defect and Material Integrity Failure Detection using Dynamic Scanning Infrared Thermography Scott A. Morris, University of Illinois at Urbana-Champaign, Urbana, IL (S.A. Morris)

MONDAY, JULY 18

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

SESSION 119

TECHNO-ECONOMIC MODELING OF FOOD, COPRODUCT, BYPRODUCT, AND WASTE STREAMS – Sponsored by PRS-707

Modeerator: Christopher Callahan

LOCATION: Fiesta 9

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460922	Does a NIR system provide low-cost alternative to on-farm feed and forage testing? A Techno-economic analysis Sai Ramaswamy, Iowa State University, Ames, IA (S. Ramaswamy, K. Rosentrater, G.A. Mosher)
9:50AM	162460679	Techno-economic Assessment of Pipeline Hydro-transport vs. Truck Delivery of Forest and Agricultural Residue Biomass to a Bio-based Energy Facility Based on Experimental Measurements Mahdi Vaezi, University of Alberta, Edmonton, Canada (M. Vaezi, A. Kumar)
10:05AM	162460305	Techno-economic assessment of dairy manure granulation Mahmoud A. Sharara, University of Wisconsin-Madison, Madison, WI (M.A. Sharara, Q. Yang, T.L. Cox, T. Runge)
10:20AM	162459907	Techno-economic analysis of maize value chain for smallholder farmers in Tanzania Ashish Manandhar, The Ohio State University, Wooster, OH (A. Manandhar, P. Milindi, A. Shah, H. Keener)
10:35AM		Break
10:45AM	162460375	Effect of pre-sorting and pre-infrared drying of walnut on energy saving Ragab K. Gebreil, University of California, Davis, CA (Z. Pan, R.K. Gebreil, C. Venkatasamy, B. Wang, H. Teh, J. Chen, I. Rabasa, L. Pan)
11:00AM	162459940	Comparison of impact hulling of almonds using 3 impeller geometries John Fielke, University of South Australia, Mawson Lakes, Australia (J. Fielke, M. Coates, M. Shirmohammadi)
11:15AM	162460035	Effect of high pressure treatment on texture characteristics of fresh-cut apple Menglong Xu, Zhejiang University, Hangzhou, China (M. Xu, S. Zhu, Y. Yu)

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

SESSION 120

MODELING AND OPTIMIZATION IN FOOD PROCESSING – Sponsored by PRS-703

Moderator: Karunanithy Chinnadural

LOCATION: Fiesta 10

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162455263	Bulk Cohesion of Wheat Flour Kaliramesh Siliveru, Kansas State University, Manhattan, KS (K. Siliveru, K. Ambrose)
9:50AM	162458505	Developing Webcam Imaging System to Determine Sugar Content, Maturity, Weight, and Shape for Tai-Farm No. 2 Papaya (Carica papaya L.) Ching-Lu Hsieh, National Pingtung University of Science and Technology, Pingtung, Taiwan (R. Firmansyah, C. Hsieh)
10:05AM	162458696	Optimization of Parboiling Conditions for Rice Milling Daniel D. Uyeh, Kyungpook National University, Daegu, Korea (the Republic of) (D.D. Uyeh, Y. Ha, S. Woo)

10:20AM	162461376	A Simulation Platform for Accurate Prediction of In-bin Drying and Storage of Rough Rice Griffiths G. Atungulu, University of Arkansas Division of Agriculture, Fayetteville, AR (H. Zhong, G.G. Atungulu)
10:35AM		Break
10:45AM	162432038	Modeling Soybean Flow in a Mixed Flow Grain Dryer Achint Sanghi, Purdue University, West Lafayette, IN (K. Ambrose, J. Boac, D. Maier, A. Sanghi)
11:00AM	162456675	Use of a 3D Finite Element Model for Sensitivity Analysis of Phosphine Fumigation to Changing Weather Conditions in Australia Benjamin Plumier, Kansas State University, Manhattan, KS (B. Plumier, D. Maier, J. Lawrence, M. Casada)
11:15AM	162458323	Modeling high capacity solar dryers for drying corn in Ghana Achint Sanghi, Purdue University, West Lafayette, IN (A. Sanghi, K. Ambrose)

TECHNICAL PROGRAM

Monday, July 18

2:30PM - 5:00PM

The purpose of these sessions is the open exchange of ideas, therefore, remarks made by a participant or member of the audience cannot be quoted or attributed to either the individual or the individuals' company. No recording of the participants' remarks or discussion is permitted. Pictures of any material shown here are not permitted.

In respect for the presenters and the people attending the conference, ASABE would request that anyone having a pager, cell phone, or other electronic device please turn them off. If your situation does not allow for these devices to be turned off, please reseat yourself close to an exit such that everyone can benefit from the information presented here without disruption.

Monday, July 18 - 2:30PM - 4:30PM

SESSION 121

CURRICULUM INTEGRATION: THE CAPSTONE COURSE - PANEL DISCUSSION

– Sponsored by EOPD-205

Moderator: Russell McGee

LOCATION: Cancun

This session will facilitate the exchange of ideas and innovative methods that have been successful in the development of the senior Capstone Course at various universities. It is targeted toward the Ag-Mech/Ag-Systems course of study, but applicable to engineering senior design courses as well. Attendees will hear brief presentations on four different programs then participate in a discussion and interaction time.

2:30PM

Introduction -

Panelist:

Leon Schumacher, University of Missouri
Deepak R. Keshwani, University of Nebraska-Lincoln
Bob Stwalley, Purdue University
Russell McGee, Texas A&M University

MONDAY, JULY 18

Monday, July 18 - 2:30PM - 5:00PM

SESSION 122

KEY PERFORMANCE INDICATORS TO EVALUATE THE SUSTAINABILITY OF AGRICULTURAL SYSTEMS – Spon-

sored by ASE-16, ASABE Global Engagement Task Force

Moderator: Todd Howatt, AGCO, Jackson, MN

LOCATION: Coronado A

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM		Review of Existing Key Performance Indicators (KPIs) used for Agriculture Marty Matlock
2:50PM	162461251	Estimating Cropland Fertilizer Nitrogen Use Impacts on Nitrous Oxide Emissions Lara Moody, The Fertilizer Institute, Washington, MD (L. Moody, C. Snyder, A. Thompson)
3:05PM	162461381	A gridded ARID index for crop water stress monitoring: Associations with historical rainfed maize yield in Nebraska. Caroline G. Staub, University of Florida, Gainesville, FL (C.G. Staub, D. Dantas, D. Pequeno, E. Gelcer, X. Shen, C. Fraisse, N. Guindin, C. Crawford)
3:20PM	162460290	Nitrogen Flow Characterization of Laying Hen Production Systems: Preliminary results Stephane Godbout, IRDA, Quebec, Canada (S. Godbout, F. Pelletier, K. Boullagui, F. Philippe)
3:35PM		Break
3:45PM	162460742	Effect of LED light wavelength and intensity on accumulation of phytochemicals in lettuce Srinivasa Reddy, McGill University, Sainte Anne De-Bellevue, Canada (S. Reddy, M.G. Lefsrud)
4:00PM	162461508	Phase Doppler Flux Comparisons Scott Post, Lincoln Agritech, Lincoln, New Zealand (R. Roten, S. Post, A. Hewitt)
4:15PM	162460661	Analysis of Deflection Characteristics of Selected Cultivation Hoes Used in Mechanized Tillage Within West Africa Sabbas N. Asoegwu, Federal University of Technology Owerri, Owerri, Nigeria (S.O. Ohanyere, K.N. Nwaigwe, S.N. Asoegwu, C.I. Ijioma)
4:30PM	162461100	Model-Based Monitoring of Dust Emission From Broiler Houses Using PLF Technology Alberto Pena Fernandez, KU Leuven, Heverlee, Belgium (A. Youssef, T.G. Demmers, V. Exadaktylos, D. Berckmans, A. Pena Fernandez)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 123

BIOMASS CATALYTIC AND THERMOCHEMICAL CONVERSIONS - GASIFICATION – Sponsored by ES-200

Moderator: Robert Frazier, Oklahoma State University, Stillwater, OK

LOCATION: Coronado B

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461842	Development and Thermochemical Equilibrium Analysis of a rice husk gasifier stove Michael Ngadi, McGill University, St Anne-de-Bellevue, Canada (E.M. Kwofie, M. Ngadi)
2:50PM	162460900	Thermogravimetric analysis (TGA) and pyrolysis kinetic study of aspen and pine hardwood Madhumita Patel, Mechanical Engineering, University of Alberta, Edmonton, Canada (M. Patel, A.O. Oyedun, A. Kumar, R. Gupta)

3:05PM	162460889	Gasification: a prospective swine manure solution for North Carolina Zachary Lentz, North Carolina State University, Raleigh, NC (Z. Lentz, J. Classen, P. Kolar)
3:20PM	162460583	Thermal behavior of pelletized fiber mix with different ratios of plastic in a downdraft gasifier Edris Madadian, McGill University, Montreal, Canada (E. Madadian, M.G. Lefsrud, C. Crowe, E. Austin)
3:35PM		Break
3:45PM	162459829	Performance of a unique downdraft gasifier for a mobile power generation Prakash Bhoi, Oklahoma State University, Stillwater, OK (P. Bhoi, S. Thapa, N. Indrawan, A. Kumar, R.L. Huhnke)
4:00PM	162456386	Ex-situ catalytic fast pyrolysis of pine sawdust over two different catalysts Shouyun Cheng, South Dakota State University, Brookings, SD (S. Cheng, L. Wei, J. Julson)
4:15PM	162456383	Effect of Co-Mo/HZSM-5 on ex-situ catalytic fast pyrolysis of different biomass feedstocks Shouyun Cheng, South Dakota State University, Brookings, SD (S. Cheng, L. Wei, J. Julson)
4:30PM	162460243	Fractionation and characterization of lignin streams from pretreatment of engineered switchgrass Enshi Liu, Biosystems and Agricultural Engineering, University of Kentucky, Lexington, KY (E. Liu, M. Kulshrestha, T. Morgan, B. Zhao, M. Crocker, J. Shi)

Monday, July 18 - 2:30PM - 5:15PM

SESSION 124

ADVANCED AND DROP-IN BIOFUELS PRODUCTION - BIOCHEMICAL & THERMOCHEMICAL APPROACH

– Sponsored by ES-220

Moderator: Nourredine Abdoulmoumine, Univ of Tennessee, Knoxville, TN

LOCATION: Coronado C

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460621	Jet Fuels from Biomass-Derived Lignin Bin Yang, Washington State University, Richland, WA (B. Yang)
2:50PM	162461756	Hydrocarbon Fuels Produced by Microwave-assisted Pyrolysis of Low Density Polyethylene (LDPE) over Carbon Catalysts Lei Zhu, Washington State University, Richland, WA (L. Zhu, H. Lei, X. Zhang, G. Yadavalli, Y. Liu, D. Yan, M. Qian, X. Zhu, J. Chan)
3:05PM	162460191	Overcoming the blend wall: Ethanol as a green solvent for thermochemical conversion of whole biomass into high-value aromatics and purified cellulose Joe Sagues, University of Florida, Gainesville, FL (J. Sagues, Z. Tong, H. Bao)
3:20PM		Break
3:30PM	162460395	Evaluation of Hydrothermally Pretreated Lignocellulosic Biomass for Anaerobic Digestion Subhash Paul, University of Guelph, Guelph, Canada (S. Paul, A. Dutta)
3:45PM	162425623	Investigation of the nature of lignin and enzyme interaction Xiang Li, Environment Engineering and Earth Sciences Department, Clemson University, Clemson, SC (X. Li, Y. Zheng)
4:00PM	162461189	Investigation on the Extracellular Enzymes from Thraustochytrids Rui Xiao, Clemson University, Clemson, SC (R. Xiao)

MONDAY, JULY 18

Monday, July 18 - 2:30PM - 5:15PM

SESSION 126

BIG DATA, DATA ANALYSIS AND APPS (INCLUDING TEACHING METHODS) - PART 1 – Sponsored by ITSC-254

Moderator: Hasan Seyyedhasani, University of Kentucky, Lexington, KY

LOCATION: Fiesta 5

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162458730	Predicting attacked time of tomato seedling by E-nose based on Kernel Principal Component Analysis Yubing Sun, Department of Biosystems Engineering, Zhejiang University, Hangzhou, China (Y. Sun, J. Wang, S. Cheng)
2:50PM	162461370	From Tweets to farm management: Mining agricultural information and discovering agricultural communities in social networks Wei-Ting Liao, UIUC, Urbana, IL (W. Liao, L.F. Rodriguez, A. Marshall, S. Wang, Y. Gao, T. Lin)
3:05PM	162459684	AgroClimate: Climate information and Decision Support for the Agricultural Industry in the Southeast USA Clyde Fraisse, University of Florida, Gainesville, FL (C. Fraisse, O. Uryasev, V. Cerbaro, A.P. Wagner, E. Gelcer, C.G. Staub)
3:20PM	162458296	AgroClimate.org: Monitoring Vegetation with a Web Remote Sensing Based Interactive Tool Ana P. Wagner, University of Florida, Gainesville, FL (A.P. Wagner, C. Fraisse, D. Perondi, V. Cerbaro, O. Uryasev, X. Shen, H. Gerardo-Cuervo)
3:35PM		Break
3:45PM	162457348	Improving data quality with data integrity zones Elizabeth Hawkins, Purdue University, West Lafayette, IN (E. Hawkins, D. Buckmaster, R. Nielsen, D. Ess, J. Krogmeier, S.K. McMillan)
4:00PM	162448004	Compiling, processing and analyzing big data Using R and Excel VBA Collin C. Craige, Oklahoma State University, Stillwater, OK (C.C. Craige, N. Sulastri, M. Buser)
4:15PM	162461159	Monitoring crop condition: Creating a decision support system at the National Agricultural Statistics Service Noemi Guindin, United States Department of Agriculture, Washington, (N. Guindin, C. Fraisse, A.P. Wagner, C. Crawford, D. Noleto Luz Pequeno, C.G. Staub, J. Okalebo, K.G. Hubbard, O. Uryasev, J. Andreis, V. Cerbaro, X. Shen, D. Dantas Barreto, E. Gelcer)
4:30PM	162461569	Viticultural Zoning Using Bio-Climatic Indices Golnaz Badr, AgWeatherNet, Washington State University, Prosser, WA (G. Badr, G. Hoogenboom)
4:45PM	162458453	Study on Feed Rate Measurement Method for Grain Combine-Harvester Yanxin Yin, National Engineering Research Center for Information Technology in Agriculture, Beijing, China (Y. Yin, Z. Meng, H. Mei)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 127

SENSING FOR HIGH-THROUGHPUT PHENOTYPING – Sponsored by ITSC-348, ITSC-312

Moderator: Sindhuja Sankaran, Washington State University, Pullman, WA

LOCATION: Coronado E

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162472820	Integrating Science and Engineering to Address Needs in High-Throughput Phenotyping Sindhuja Sankaran, Washington State University, Pullman, WA (S. Sankaran, D.C. Slaughter, A. Carter, L. Kalcsits, J.K. Okamura, H. Kirchhoff, J. Poland)
2:50PM	162462338	Infield Biomass Sorghum Yield Component Traits Extraction Pipeline Using Stereo Vision Yin Bao, Iowa State University, Ames, IA (Y. Bao, L. Tang, P.S. Schnable, M.G. Salas Fernandez)
3:05PM	162460562	Field Phenotyping for Wheat and Soybean Breeding Geng Bai, University of Nebraska - Lincoln, Lincoln, NE (G. Bai, Y. Ge, W. Hussain, P. Baenziger, L. Ruff, G.L. Graef)
3:20PM	162461532	Low-Cost 3D Platform Development for Automated Crop Phenotyping in Controlled Environment Chongyuan Zhang, Washington State University, Pullman, WA (C. Zhang, H. Gao, J. Zhou, A. Cousins, M. Pumphrey, S. Sankaran)
3:35PM		Break
3:45PM	162461943	Sorghum Phenotyping Using A Fixed-wing UAV-based Sensing System Yeyin Shi, Texas A&M University, College Station, TX (Y. Shi, A. Thomasson, N. Pugh, J. Olsenholler, W. Rooney, J. Valasek)
4:00PM	162461174	Height estimation for blueberry bushes using LiDAR based on a field robotic platform Shangpeng Sun, University of Georgia, Athens, GA (S. Sun, C. Li)
4:15PM	162460894	Measuring Cotton Plant Height Using High Resolution Aerial Images Rui Xu, University of Georgia, Athens, GA (R. Xu, Y. Jiang, C. Li, A. Paterson)
4:30PM	162540198	UAV-Based Imaging to Assess Potato Emergence in Horticulture and Breeding Programs Sindhuja Sankaran, Washington State University, Pullman, WA (S. Sankaran, J.J. Quiros, L.R. Khot, N. Knowles, L.O. Knowles)

Monday, July 18 - 2:30PM - 5:15PM

SESSION 128

MACHINE VISION AND SENSORS FOR AUTONOMOUS VEHICLES AND ROBOTICS – Sponsored by ITSC-312

Moderator: Yufeng Ge, University of Nebraska - Lincoln, Lincoln, NE

LOCATION: Coronado F

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460869	Effort towards robotic apple harvesting in Washington State Abhisesh Silwal, Washington State University, Prosser, WA (A. Silwal, J. Davidson, M. Karkee, C. Mo, Q. Zhang, K. Lewis)
2:50PM	162460500	Developing an image processing based algorithm to detect and count soybean aphids under field conditions Mohammadmehdi Maharlooei, Shahid Bahonar University of Kerman, Kerman, ND, Iran (the Islamic Republic of) (M. Maharlooei, S. Sivarajan, A. Shirzadifar, S. Bajwa, J. Nowatzki, J.P. Harmon)

MONDAY, JULY 18

3:05PM	162461332	Pest Eye: A study of wavelength reflectance on corn pests Daniel Flippo, Kansas State University, Manhattan, KS (D. Flippo, A. Sharda)
3:20PM		Break
3:30PM	162460475	Image processing for crop/weed discrimination in fields with high weed pressure Nan Li, China Agricultural University, Beijing, China (N. Li, T.E. Grift, T. Yuan, C. Zhang, M. Momin, W. Li)
3:45PM	162461685	Water stress tolerance detection in potatoes using visible-near infrared sensing techniques Carlos Zúñiga, Washington State University, Pullman, WA (C. Zúñiga, S. Jarolmasjed, L.R. Khot, N. Knowles, M.J. Pavek, S. Sankaran)
4:00PM	162462582	Design, Development, and Evaluation of Fuzzy-based Automatic Guidance System for a Combine Harvester Alireza Mahdavian, Tarbiat Modares University, Tehran, Iran (the Islamic Republic of) (A. Mahdavian, S. Minaei, A. Banakar)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 129

FREITAG-WISMER MEMORIAL SESSION ON TRACTION AND MOBILITY - INVITED – Sponsored by MS-45

Moderators: Andrew Klopfenstein, OH, Shrinivasa Upadhyaya, CA
Thomas Way, USDA-ARS National Soil Dynamics Lab, Auburn, AL

LOCATION: Coronado G

The Freitag-Wismer Memorial Session on Traction and Mobility is a session in honor of Dean Freitag and Bob Wismer. In this introductory presentation, Dr. Carol Plouffe will summarize the career of Bob Wismer and will present highlights of Wismer's contributions in the areas of off-road traction and mobility, and related topics. Professor R. Lal Kushwaha will be making a presentation on Dr. Freitag's lifelong contribution to this field.

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461416	Dr. Freitag's Contributions on Traction and Mobility Lal Kushwaha, Department of Chemical and Biological Engineering, University of Saskatchewan, Saskatoon, Canada (L. Kushwaha)
3:05PM	162477751	Contributions of Bob Wismer in the Advances of Traction and Mobility Carol Plouffe, Deere & Co, Moline, IL (C. Plouffe)
3:35PM	162461902	Evaluation of Low Inflation Tire Technologies on Soil Compaction Mehari Tekeste, Iowa State University, AMES, IA (M. Tekeste, T. Way, W. Birkenholz, S. Brodbeck)
4:05PM		Break
4:15PM	162459271	Why tractive footprint length matters Thomas Way, USDA-ARS National Soil Dynamics Lab, Auburn, AL (F. Zoz, T. Way)
4:35PM	162460914	Modeling Soil-Cone Penetrometer Interaction Using Continuum and Discontinuum Approach Mehari Tekeste, Iowa State University, AMES, IA (M. Tekeste, Z. Syed)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 130

ADVANCES IN CROP PROTECTION APPLICATION AND FORMULATION –

Sponsored by MS-23-6
Moderator: Harold Thistle

LOCATION: Coronado M

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461129	Identifying and Ranking of Factors Influencing Spray Drift: from a Semi-Field Scale Spray Drift Wind Tunnel Kevin Wright, Waterborne Environmental, Champaign, IL (K. Wright, R. Gali, G. Kruger, D. Perkins, F. Abi-Akar)
2:50PM	162462115	Determination of Possibilities of Microwave Application for Killing Weeds ikbal aygun, Ege University, Bornova, Turkey (i. aygun, e. cakil, k. kacan)
3:05PM	162460634	Spray coverage and deposition distributions inside tree canopies from a variable-rate air-assisted sprayer Weimin Ding, Nanjing Agricultural University, Nanjing, China (J. Gu, W. Ding, H. Zhu)
3:20PM	162460834	Discharge Coefficients of Flat Fan Spray Nozzles Scott Post, Lincoln Agritech, Lincoln, New Zealand (S. Post, R. Roten, R. Connell)
3:35PM	162460336	Aerial Electrostatic Spray Deposition and Canopy Penetration in Cotton Daniel E. Martin, USDA-ARS, College Station, TX (D.E. Martin)
3:50PM		Break
4:00PM	162460314	Sprayer Evaluation on Tall Pecan Trees Matthew B. Rogers, Oklahoma State University, Stillwater, OK (M.B. Rogers, C.C. Craigie, K.G. Moore, J.M. Long, P. Weckler)
4:15PM	162460220	Deposition and Drift from UTV and Backpack Spraying: Open-Ground Spray Trials Harold Thistle, USDA Forest Service, Waynesburg, PA (H. Thistle, J. Bonds, G. Kees)
4:30PM	162460187	Evaluation of Wind Effects on Boomless Nozzle Spray Patterns Matthew B. Rogers, Oklahoma State University, Stillwater, OK (M.B. Rogers, J.M. Long)
4:45PM	162462225	Investigating the Effect of Thermotherapy on Physiological Factors in HLB-Infected Citrus Saman Souri, University of Florida, Lake Alfred, FL (A. Alizadeh, S. Souri, Z. Jia, K. Migliaccio, R. Ehsani)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 131

INNOVATIONS IN PRECISION AGRICULTURE - PART 1 – Sponsored by MS-54

Moderator: Ganesh Bora

LOCATION: Coronado N

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162462971	Precision Agriculture, Climate Change and Food Security in Upper Midwest Ganesh C. Bora, North Dakota State University, Fargo, ND (G.C. Bora)
2:50PM	162375420	SID: A software tool for aerial image analysis, crop scouting, zone development, and more Kendall R. Kirk, Edisto REC, Clemson University, Blackville, SC (K.R. Kirk)
3:05PM	162461631	Android Application for Cotton Management Dharmendra Saraswat, Purdue University, West Lafayette, IN (D. Saraswat)

MONDAY, JULY 18

3:20PM	162461448	Using low power Lasers as an alternative pesticide. Daniel Flippo, Kansas State University, Manhattan, KS (P. Dix, D. Flippo, A. Sharda, S. Zukoff, B. McCornack, E. Frink)
3:35PM		Break
3:45PM	162458361	Evaluation of a Low-Cost, Single Frequency RTK GPS system John M. Long, Oklahoma State University, Stillwater, OK (J.M. Long, N. Wang)
4:00PM	162461541	Coverage Map Sharing between Multiple Vehicles using Automated Section Control Ajay Sharda, Kansas State University, Urbandale, IA (J.D. Bennett, C. Wilson, A. Sharda, T. Griffin)
4:15PM	162453474	A Leaf Monitoring System for Continuous Measurement of Plant Water Status to Assist with Precision Irrigation Management in Specialty Crops Francisco Rojo, UC Davis, Davis, CA (F. Rojo, E. Kizer, S. Ozmer, C. Ko-Madden, Q. Zhang, S. Upadhyaya)

Monday, July 18 - 12:00PM - 2:30PM

SESSION 133

NRES COMMUNITY: HOW THE PIECES FIT TOGETHER - PANEL DISCUSSION – Sponsored by NRES

Moderator:

LOCATION: Coronado P

The Natural Resources and Environmental Systems is a diverse Technical Community with many subject matters committees. With the recent ASABE reorganization there is an opportunity to give a fresh look at our committees. This panel discussion will include presentations by NRES committees to better understand the roles and responsibilities of each committee. All technical committee members are invited to engage in a dialogue on the NRES technical community and discuss needs for the future.

Monday, July 18 - 2:30PM - 5:00PM

SESSION 132

UNMANNED AIRCRAFT FOR AGRICULTURE – Sponsored by MS-60, MS-54, MS-23, ITSC-353, ITSC-312, NRES-21, NRES-24, NRES-28 Moderator: Wayne Woldt **LOCATION: Fiesta 6**

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162462670	Real-time UAV tile line mapping for precision cover crop management Liu Jun Li, University of Illinois at Urbana-Champaign, Urbana, IL (L. Li, L. Tian, R.A. Cooke, J. Compass, B.R. Trenhaile, H. Filippini, S. Wilkin)
2:50PM	162460327	Development and Demonstration of a Field Safety Beacon for Improved Awareness of Unmanned Aircraft Flight Operations in the Vicinity of Low Flying Manned Agricultural Flights Wayne Woldt, University of Nebraska-Lincoln, Lincoln, NE (W. Woldt, J. Smith, M. Kamm)
3:05PM	162417110	Development of a Trailer for UAS Extension and Research Activities Randy R. Price, LSU AgCenter, Alexandria, LA (R.R. Price)
3:20PM	162460809	Influence of Tree Canopy on Radio Path Losses Between a Unmanned Aerial Vehicle and Ground-Based Wireless Sensor Network Joshua Ward, California State University, Bakersfield, CA (J. Ward, Y. Ampatzidis)
3:35PM		Break
3:45PM	162455253	Rain-induced cherry fruit cracking prevention: effectiveness of an unmanned mid-sized helicopter in rainwater removal from Y-trellised tree canopies Lav R. Khot, Center for Precision and Automated Agricultural Systems, Washington State University, Prosser, WA (J. Zhou, L.R. Khot, T. Peters, M. Whiting, Q. Zhang, D. Granatstein)
4:00PM	162459762	Rapid assessment of hail damage in potato crops using remote sensing technology Jianfeng Zhou, Department of Biological Systems Engineering, Washington State University, Pullman, WA (J. Zhou, L.R. Khot, M.J. Pavek, S. Sankaran)
4:15PM	162458010	Developing an Unmanned Aerial Remote Sensing of ET System José L. Chávez, Colorado State University, Fort Collins, CO (J.L. Chávez, J.C. Hathaway)
4:30PM	162485732	Large-scale UAS Data Collection, Processing and Management for Field Crop Management Sreekala Bajwa, North Dakota State University, Fargo, ND (J. Nowatzki, S. Bajwa)

Monday, July 18 - 2:30PM - 5:45PM

SESSION 134

CLIMATE VARIABILITY AND CLIMATE CHANGE IMPACTS ON AGRICULTURE, WATER AND NATURAL RESOURCES – Sponsored by NRES-21

Moderator: Joel Paz

LOCATION: Coronado P

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461492	Quantifying the effects of GCM selection and bias correction techniques on future projections of regional hydrologic response Seungwoo J. Chang, University of Florida, Gainesville, FL (S.J. Chang, W. Graham, S. Hwang)
2:50PM	162462183	Using Fuzzy Logic to Predict and Evaluate the Magnitude and Distribution of Precipitation on Rainfed Maize and Soybean Yields in Nebraska Daran R. Rudnick, University of Nebraska-Lincoln, North Platte, NE (D.R. Rudnick, V. Sharma, G.E. Meyer, S. Irmak)
3:05PM	162462168	Temporal and Spatial Trends in Irrigated and Rainfed Crop Grain Yields and Climatic Variables in Nebraska from 1960 to 2010 Jasreman Singh, University of Nebraska-Lincoln, Lincoln, NE (J. Singh, D.R. Rudnick)
3:20PM	162462572	Assessing the Impacts of Future Climate Change on Watershed Hydrology and Water Quality under different Grazing Management Practices Srinivasulu Ale, Texas A&M AgriLife Research, Vernon, TX (J. PARK, S. Ale, W.R. Teague)
3:35PM		Break
3:45PM	162460578	Assessment of Climate Change Impact on Water Quality and Crop Yield in East-central Illinois Chunhua Jang, University of Illinois at Urbana-Champaign, Urbana, IL (C. Jang, R. Bhattarai)
4:00PM	162460240	Impact of Climate Change on Components of the Water and Nitrogen Budgets of Dryland Wheat Systems in the US Pacific Northwest Tina Karimi, WSU-BSYSE, Pullman, WA (T. Karimi, C. Stöckle, R. Nelson)
4:15PM	162463515	The Impacts of Climate Change on Soil Loss Based on Projected Climate Data in the Southeastern United States Ryan P. McGehee, Auburn University, Auburn, AL (R.P. McGehee, P. Srivastava)

MONDAY, JULY 18

4:30PM 162461769 Hydroclimatology of the New River Basin for effective land and water management
Venkat Sridhar, Virginia Polytechnic Institute and State University, Blacksburg, VA (A. Krinos, M. Billah, P. Valayamkunnath, V. Sridhar)

Monday, July 18 - 2:30PM - 5:45PM

SESSION 135 MODELING OF WATER QUALITY AND HYDROLOGY – Sponsored by

NRES-21

Moderator: Derek Schlea

LOCATION: Coronado Q

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162458368	Riparian erosion suitability model based on environmental features Alejandra Botero-Acosta, University of Illinois Urbana-Champaign, Champaign, IL (A. Botero-Acosta, M. Chu, J. Guzman)
2:50PM	162462856	New submodel for watershed-scale simulations of fecal bacteria fate and transport at agricultural and pasture lands Yongun Park, USDA, ARS, Beltsville, MD (Y. Park, Y. Pachepsky, E. Hong, D. Shelton, G. Whelan)
3:05PM	162460392	Development of a distributed hydrologic model to facilitate watershed management Sisi Li, Purdue University, West Lafayette, IN, United States (S. Li, M. Gitau, B. Engel, L. Zhang, C. Wallace, Y. Du, D.C. Flanagan)
3:20PM	162457632	Urbanization Impact on Surface Runoff of the Contiguous United States Jingqiu Chen, Purdue University, West Lafayette, IN (J. Chen, B. Engel, L. Theller, M. Gitau)
3:35PM	162460771	Evaluation of upland-floodplain delineation methods across scales and DEM resolutions Hendrik Rathjens, Purdue University, West Lafayette, IN (H. Rathjens, K. Bieger, I. Chaubey, J. Arnold, P. Allen, R. Srinivasan, M. Volk)
3:50PM		Break
4:00PM	162459418	An Effective Parameter Screening Strategy for High Dimensional Models: Do we really need to maximize sample spread for the Morris method? Yogesh P. Khare, Everglades Foundation, Palmetto Bay, FL (Y.P. Khare, C. Martinez, R. Munoz-Carpena)
4:15PM	162462227	Impacts of normalizing the SWAT topographic index based on watershed size Amy S. Collick, University of Maryland Eastern Shore (UMES), Princess Anne, MD (A.S. Collick, T.L. Veith, D.R. Fuka, P.J. Kleinman, Z.M. Easton)
4:30PM	162459872	Improving the spatial representation of soil properties and hydrology using topographically derived initialization processes in the SWAT model Zachary M. Easton, Virginia Tech, Blacksburg, VA (Z.M. Easton, A. Collick, D.R. Fuka)
4:45PM	162460997	Development Web-based SWAT LUC with SWAT BFlow Alpha Factor and Slope-based CN modules Dongjun Lee, Kangwon National University in South Korea, Chuncheon-si, Korea (the Republic of) (D. Lee, D. Kum, W. Jang, J. Kim, J. Yang, B. Engel, K.J. Lim)
5:00PM	162462797	Modeling water quality impacts of hay production under potential land use change in an agricultural dominated watershed Laurent Ahiablame, South Dakota State University, Brookings, SD (L. Ahiablame, M. Rajib, M. Paul)

Monday, July 18 - 2:30PM - 5:15PM

SESSION 136

SOIL EROSION RESEARCH

– Sponsored by NRES-22, NRES-223, NRES-25

Moderator: Sara McMillan, Purdue University, West Lafayette, IN

LOCATION: Coronado R

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162462954	Water Erosion Prediction Project (WEPP) Model Status and Updates Dennis C. Flanagan, USDA-Agricultural Research Service, West Lafayette, IN (D.C. Flanagan)
2:50PM	162459871	Comparison of Field Jet Erosion Tests and WEPP-Predicted Erodibility Parameters for Varying Land Cover Whitney Lisenbee, Oklahoma State University, Stillwater, OK (W. Lisenbee, G. Fox, R. Miller)
3:05PM	162461503	Investigation of detachment characteristics of vegetated soil using laboratory mini-JETs Garey Fox, Oklahoma State University, Stillwater, OK (A. Khanal, G. Fox)
3:20PM	162460595	Influence of Rainfall Sequence Patterns on Soil Resistance to Ephemeral Gully Erosion Aleksey Sheshukov, Kansas State University, Manhattan, KS (V. Karimov, A. Sheshukov)
3:35PM	162461481	Topographical Thresholds for Ephemeral Gully Identification in Watersheds with Highly Disturbed Terrain Aleksey Sheshukov, Kansas State University, Manhattan, KS (L. Sekaluvu, A. Sheshukov)
3:50PM		Break
4:00PM	162455246	The impact of deposition of eroded sediments on rill development and bifurcation. Greg Obiechefu, Imo State Polytechnic Umuagwo, Umuagwo, Nigeria (P.N. Egbuikwem, G. Obiechefu)
4:15PM	162457754	Development of Web EROsivity Module (WERM) and its Application for Estimation of Annual and Monthly R factor in Korea Avay Risal, Kangwon National University, Chuncheon, Korea (the Republic of) (A. Risal, K. Lim, R. Bhattarai, J. Yang, Y. Park, D. Kum)
4:30PM	162458115	Predicting the Impact of Streambank Stabilization Practices on Sediment Loads using a Process-Based Bank Stability and Toe Erosion Model Holly K. Enlow, Oklahoma State University, Stillwater, OK (K.R. Klavon, G. Fox, H.K. Enlow)
4:45PM	162461032	Modeling soil erosion and sediment load at different time scales in a medium-sized watershed Francesco Gentile, Università di Bari, Bari, Italy (O.M. Abdelwahab, F. Milillo, F. Gentile)
5:00PM	162461304	Development and Evaluation of Modified AGNPS Model in an Agricultural Watershed using a Variable Cell Size Approach Pradeep Goel, University of Guelph, Guelph, Canada (A.K. Gupta, R. Rudra, P. Goel)

MONDAY, JULY 18

Monday, July 18 - 2:30PM - 5:15PM

SESSION 137

PROGRESS WITH SUBSURFACE DRIP IRRIGATION FOR COMMODITY CROPS – Sponsored by NRES-24, NRES-245

Moderator: Freddie Lamm

LOCATION: Coronado S

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461219	Investigating SDI Design, Installation and Management Practices for Improved Row Crop Production in the Texas South Plains: A 15 Year Review of Research James P. Bordovsky, Texas A&M AgriLife Research, Plainview, TX (J.P. Bordovsky, J. Mustian, D. Porter)
3:00PM	162460953	Evapotranspiration, crop coefficients, irrigation frequency, crop water productivity and planting date and population density impacts for SDI-irrigated crops: Twelve years of research summary Suat Irmak, University of Nebraska-Lincoln, Lincoln, NE (S. Irmak)
3:25PM	162459996	Management Strategies for Sub-surface Drip Irrigation under Declining Water Resources Saleh Taghvaeian, Oklahoma State University, Stillwater, OK (S. Taghvaeian, J.G. Warren, D. Sims)
3:50PM		Break
4:00PM	162462968	Developing Subsurface Drip Irrigation Strategies for Alfalfa in California Daniele Zaccaria, University of California, Davis, Davis, CA (D.H. Putnam, A. Montazar, D. Zaccaria, K. Bali)
4:25PM	162461575	Long term performance of a research subsurface drip irrigation system Freddie R. Lamm, Kansas State University, Colby, KS (F.R. Lamm, D.H. Rogers)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 138

TURF AND LANDSCAPE IRRIGATION WATER CONSERVATION – Sponsored by NRES-24, NRES-246

Moderator:

LOCATION: Coronado T

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162477732	Comparing Smart Irrigation Technologies: ET, SWS, and Apps Kati Migliaccio, University of Florida, Homestead, FL (K. Migliaccio)
2:50PM	162476818	Turf Grass Irrigation Water Requirements and Irrigation Frequency Derived from Sensor Controlled Irrigation Garry Grabow, North Carolina State Univ, Raleigh, NC (G. Grabow)
3:05PM	162476830	An Update Landscape Irrigation Standards Brent Mecham, Irrigation Assoc, Fairfax, VA (B. Mecham)
3:20PM	162461665	Developing a Standard for Evaluation of Soil Moisture Based Landscape Irrigation Controllers Charles Swanson, Texas A&M Agrilife Extension Service, College Station, TX (C. Swanson)
3:35PM	162461635	Seasonal Kc Curves for Turfgrass Using FAO-56 Dual Crop Coefficient Method Mark A. Crookston, Northern Water, Berthoud, CO (M.A. Crookston)
3:50PM		Break
4:00PM	162476826	Beyond DU: A New Approach to Characterize Sprinkler Performance in the Landscape Brent Mecham, Irrigation Assoc, Fairfax, VA (B. Mecham)

4:15PM	162461409	Landscape Irrigation Patterns as Influenced by Smart Irrigation Controllers Eliza Breder, University of Florida, Gainesville, FL (E. Breder, M.D. Dukes)
4:30PM	162457432	Smart Water Application Technologies: a review of multi-study results Bernardo Cardenas, University of Florida, Gainesville, FL (B. Cardenas, M.D. Dukes)
4:45PM	162461325	Weather Station Siting in Urban Areas to Support Development of the WaterMyYard Program Charles Swanson, Texas A&M Agrilife Extension Service, College Station, TX (C. Swanson, G. Fipps, S. Traore)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 139

MANURE MANAGEMENT AND AIR QUALITY – Sponsored by NRES-27, PAFS-50

Moderator: Mindy Spiehs

LOCATION: Fiesta 7

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460363	Evaluation of near infrared spectroscopy for rapid sensing of dairy manure nutrients Gopi K. Kafle, Washington State University, Pullman, WA (G.K. Kafle, L.R. Khot, P. Ndegwa, I. Zeb)
2:50PM	162460381	Dairy-CropSyst: a gaseous emission and nutrients fate modeling tool Tariq Mahmood Khalil, Washington State University, Pullman, WA (T. Khalil, B. Carlson, N. Uslar-Valle, C. Frear, R. Nelson, J. Ma, C. Stöckle)
3:05PM	162460457	Evaluation of Dairy Manure Management Practices for Greenhouse Gas Emissions Mitigation in California Tyler J. Barzee, UC Davis, Davis, CA (S.M. Zicari, R. Williams, H. El MASHad, T.J. Barzee, R. Zhang, S. Kaf-fka)
3:20PM	162459669	Modeling of carbon and nitrogen gaseous emissions from cattle manure compost windrows Henry F. Bonifacio, USDA-ARS PSWMRU, University Park, PA (H.F. Bonifacio, C. Rotz, T. Richard)
3:35PM		Break
3:45PM	162460150	A Mathematical Model for Ammonia Emissions from Laying-hen Manure Ruihong Zhang, UC Davis, Davis, CA (H. El MASHad, X. Lin, T. Rumsey, R. Zhang)
4:00PM	162447784	Source apportionment of ambient PM2.5 by using Unmix and PMF reception models at Flint Hills rural site and Kansas City urban site Yang Liu, Kansas State University, Manhattan, KS (Y. Liu, Z. Liu)
4:15PM	162456770	Quantification and Characterization of Particulate Matter Generated From Unpaved Roads in the Oil Development Area of Western North Dakota Sumon Datta, North Dakota State University, Fargo, ND (S. Datta, S. Rahman, M. Borhan, B. Saini-Eidukat, L. Cihacek, K. Ringwall)

MONDAY, JULY 18

Monday, July 18 - 2:30PM - 5:00PM

SESSION 140

PHYSICAL, BIOLOGICAL, AND SOCIO-ECONOMIC WORLDS COLLABORATE FOR ECOSYSTEM SERVICES PROGRAMS: LESSONS LEARNED - INVITED – Sponsored by

NRES-28

Moderator: Sanjay Shukla

LOCATION: Fiesta 8

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162527401	Ecosystem Services: What Engineers Should Learn from Ecologist and Ecologists from Engineers William Mitsch, Ohio State University, Columbus, OH (W. Mitsch)
2:55PM	162527409	(EPES) 1: Everglades Payment for Environmental Services (EPES) - Water, Biodiversity, People Hilary Swain, Archbold Biological Station, Venus, FL (H. Swain)
3:10PM	162527413	Quantification and Tradeoffs for Water Storage and Treatment Services (EPES2) Sanjay Shukla, UF/IFAS, Immokalee, FL (S. Shukla, G. Hendricks, A.M. Engel)
3:25PM	162527418	EPES3: Quantification and Tradeoffs for Biodiversity Services Patrick J. Bohlen, Univ of Central Florida, Orlando, FL (P.J. Bohlen)
3:40PM	162527422	Implementing a Payment for Water Storage and Treatment Services Program Benita Whalen, Dispersed Water LLC, Jupiter, FL (B. Whalen)
3:55PM		Break
4:05PM	162541568	Application of The Nature Conservancy's Resource Investment Optimization System (RIOS) to Evaluate Watershed Management Investments Stephen Suau, Progressive Water Source, Sarasota, FL (S. Suau)
4:20PM	162527426	Can Water Quality Trading Improve Water Quality: The Myth and the Reality Leonard Shabman, Resources for Future, Arlington, VA (L. Shabman)
4:35PM	162527427	Designing Payments to Landowners Who Provide Wetland Ecosystem Services Leonard Shabman, Resources for Future, Arlington, VA (L. Shabman)
4:50PM		Discussion and Concluding Remarks

Monday, July 18 - 2:30PM - 5:00PM

SESSION 141

EMERGING CHALLENGES IN GLOBAL FOOD AND WATER SECURITY - INVITED – Sponsored by AAFBEIO, E2050

Moderator: Ashish Pandey, Indian Institute of Technology, Roorkee, India

LOCATION: Fiesta 9

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162527536	Global Challenges of Irrigation Water Management and Food Security Ashish Pandey, University of California Davis, Davis, CA (A. Pandey)
3:15PM	162456808	Global Food (In) Security under Climate Change Ashutosh Singh, University of Guelph, Guelph, Canada (A. Singh, A. Gowman)

3:35PM	162540096	Global Postharvest Loss Prevention and the ADM Institute at the University of Illinois Prasanta K. Kalita, University of Illinois, Urbana, IL (P.K. Kalita)
3:55PM		Break
4:00PM	162540100	Role of Sustainable Intensification of Agricultural Practices for Improving Crop Productivity and Climate Resiliency of Smallholder Farmers: Lessons Learnt From West Africa P.V. Vara Prasad, Kansas State Univ, Manhattan, KS (P. Prasad)
4:20PM	162527548	Opportunities and Challenges in Utilization of Food and Agricultural Wastes Ajay Kumar, Oklahoma State University, Stillwater, OK (A. Kumar)
4:40PM		Panel Discussion

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

SESSION 142

GUIDELINES FOR HYDROLOGIC AND WATER QUALITY MODELING CALIBRATION AND VALIDATION PROJECT - RAP SESSIONS

– Sponsored by NRES-21

Moderator: Bruce Wilson

LOCATION: Fiesta 9

Leader(s)

Bruce Wilson, University of Minnesota

Daniel Moriasi, USDA-ARS

Daren Harmel, USDA-ARS

Purpose: To 1) enable leaders of the proposed topic-specific engineering practices to present results to all members of the 201 hydrology group, and 2) discuss the drafted topic-specific model calibration and validation engineering practices to reach consensus prior to submitting to ASABE Standards Committee for the formal approval process.

Monday, July 18 - 2:30PM - 5:00PM

SESSION 143

GREENHOUSE AND NURSERY TECHNOLOGY - INNOVATIVE SYSTEM AND RESOURCE SAVINGS, A JOINT SESSION – Sponsored by

PAFS-303

Moderator: Lucas McCartney, McGill University, St-Gabriel-de-Valcartier, Canada

LOCATION: Fiesta 10

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162485881	Cannabis: A Field of Opportunity Nadia Sabeh, Guttman & Blaevot Consulting Engineers, Sacramento, CA (N. Sabeh)
3:05PM	162460470	Cubic Farming: An Overview of Intercanopy Lighting and Crop Trials Lucas McCartney, McGill University, St-Gabriel-de-Valcartier, Canada (L. McCartney, M.G. Lefsrud)
3:20PM	162461249	Microbiological Evaluation of a Nutrient Solution Used in a Hydroponic System Enoch Caryl B. Taclan, Central Luzon State University, Science City of Munoz, Philippines (E.B. Taclan)
3:35PM		Break
3:45PM	162460478	Electrical savings comparison of supplemental lighting control systems in greenhouse environments Kale Harbick, Cornell University, Ithaca, NY (K. Harbick, L.D. Albright, N. Mattson)

MONDAY, JULY 18

- 4:00PM 162455669 Modeling of Heating Requirement in Chinese Solar Greenhouse**
Md Shamim Ahamed, University of Saskatchewan, Saskatoon, Canada (M. Ahamed, H. Guo, T. Karen)
- 4:15PM 162454215 Comparative Evaluation of Naturally ventilated Screenhouse and Evaporative Cooled Greenhouse based on Optimal Vapor Pressure Deficit**
Ramin Shamshiri, Universiti Putra Malaysia, Serdang, Malaysia (R. Shamshiri, D. Ahmad, w.b. wan ismail, H. Che Man, M. Yamin)

Monday, July 18 - 2:30PM - 3:30PM

SESSION 144

STRUCTURAL DESIGN, ANALYSIS AND TESTING OF BUILDING SYSTEMS AND COMPONENTS

— Sponsored by PAFS-20

Moderator: Tom Gettings, GSI Group Inc., Taylorville, IL

LOCATION: Fiesta 4

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460665	Rigid Concrete-to-Wood Post Connection David Bohnhoff, University of Wisconsin-Madison, Madison, WI (D. Bohnhoff)
2:50PM	162460547	Precast Concrete Posts for Agricultural Use David Bohnhoff, University of Wisconsin-Madison, Madison, WI (D. Bohnhoff)
3:05PM	162460772	Bending Properties for a Steel Reinforced Plastic-to-Wood Column Connection Caynen Klessig, Jack Walters & Sons Corp., Allenton, WI (D. Bohnhoff, D. Pederson, C. Klessig)

Monday, July 18 - 3:30PM - 6:00PM

SESSION 145

AGRI-INDUSTRIAL FACILITY DESIGN OPERATION

— Sponsored by PAFS

Moderator: Gregory Williams

LOCATION: Fiesta 4

Time	Paper #	Title/Authors
3:30PM		Introduction
3:35PM	162459460	Design Practices for Grain bin and Silo Floor Slabs Gregory D. Williams, FES, Springdale, AR (G.D. Williams)
3:50PM	162461889	Some nutritional and physical properties of alfalfa (Medicago sativa Linn) seeds Dandan Kong, China Agricultural University, Beijing, China (Y. Gao, J. Yang, D. Kong)
4:05PM	162467037	Numerical Simulation and Experimental Study on Static Storage of Bulk Grain Zhongjie Zhang, Academy of State Administration of grain, Beijing, China (Z. Zhang)
4:20PM	162467051	Numerical Simulation and Experimental Study on In-store Drying of Grain Zhongjie Zhang, Academy of State Administration of grain, Beijing, China (Z. Zhang)
4:35PM	162460841	The effect of the expansion chamber on the flow pattern and performance of cyclones Guogang Sun, China University of Petroleum - Beijing, Beijing, China (G. Sun)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 146

CATASTROPHIC DISEASE OUTBREAKS: ENGINEERING RESPONSES FOR LIVESTOCK PRODUCTION - INVITED

— Sponsored by PAFS-40

Moderator: Timothy Shepherd, Iowa State University, Ames, IA

LOCATION: Fiesta 3

Invited Speakers and highlighted research will provide insight and discussion surrounding the engineering challenges and needs of past and future catastrophic disease outbreaks in livestock production.

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162537392	Engineering challenges and responses to the highly pathogenic avian influenza outbreak in Minnesota in 2015 Kevin A. Janni, University of Minnesota, St. Paul, MN (K.A. Janni, L. Jacobson, S. Noll, C.J. Cardona, W. Martin, A. Neu)
3:05PM	162461800	Whole house poultry vaccination system: Development and Field Implementation Joseph L. Purswell, USDA-ARS, Mississippi State, MS (J.L. Purswell, S.L. Branton)
3:35PM	162537390	Positive Pressure Ventilation and Filtration of Swine Facilities-Application and Performance John P. Stinn, Iowa Select Farms, State Center, IA (J.P. Stinn, B. Smith)
3:50PM	162537395	Nutrient management considerations for mass depopulation events Kris Kohl, Iowa State University, Ames, IA (D. Andersen, K. Kohl, K. Arora)
4:05PM	162460129	Modeling Airborne Transmission of Avian Influenza Using Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) Model Yang Zhao, Iowa State University, Ames, IA (Y. Zhao, H. Xin, E. Takle)
4:20PM	162461774	Rapid assessment of cleanliness of commercial hog transport trailers using ATP bioluminescence method Alvin Alvarado, Prairie Swine Centre Inc, Saskatoon, Canada (J. Cabahug, A. Alvarado, B. Predicala)

Monday, July 18 - 2:30PM - 5:30PM

SESSION 147

BIOPROCESSING FOR VALUE ADDED PRODUCTS

— Sponsored by PRS-280

Moderator: Ganti Murthy

LOCATION: Yucatan 1

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461773	Recovery Strategies for Recombinant Osteopontin from Microalgae Shengchun Guo, Texas A&M University, College Station, TX (S. Guo, A. Ravi, S. Kulkarni, B. Rasala, S. Mayfield, Z. Nikolov)
2:50PM	162460750	Aryl alcohol oxidase production under growth-limited conditions using a mutant Aspergillus nidulans strain Oscar Pardo-Planas, Oklahoma State University, Stillwater, OK (O. Pardo-Planas, R. Prade, M. Mueller, M.R. Wilkins)
3:05PM	162460189	The Antioxidant Activity of Phlorotannins from Edible Brown Algae Xin Liu, North Carolina State University, Raleigh, NC (X. Liu, W. Yuan)

MONDAY, JULY 18

3:20PM	162460323	Extraction of high-value protein products from <i>Chlorella vulgaris</i> Sayali Kulkarni, Texas A&M University, College Station, TX (S. Kulkarni, Z. Nikolov)
3:35PM	162461550	Separation of polyphenols from grape pomace by use of polymeric adsorbents Ayca Seker, Biological Systems Engineering, Washington State University, Pullman, WA (A. Seker, S. Chen)
3:50PM		Break
4:15PM	162462878	Performance of Mercerized Fiber from Distiller's Dried Grain with Solubles as a Filler in HDPE Composites Pankaj Pandey, North Dakota State University, Fargo, ND (P. Pandey, S. Bajwa, D.S. Bajwa)
4:45PM	162460108	Development of bio-based flocculants by hydrolysis of meat and bone meal with dilute acid Congmu Zhang, USDA-ARS-Eastern Regional Research Center, Wyndmoor, PA (C. Zhang, R.A. Garcia, G.J. Piazza)
5:00PM	162386543	The effect of combined treatment of NaOH and high-pressure homogenization on the extraction of phenolic acid from potato peel residues Xindi Zhu, China Agricultural University, Beijing, MN, China (X. Zhu, P. Peng, P. Chen, R. Ruan, D. Li, S. LIU)
5:15PM	162432587	Extracting Carotenoids from Corn Gluten Meal with Supercritical CO₂ bonnie f. cobb, NDSU, Fargo, ND (B.F. Cobb, S.W. Pryor, J. Kallenbach, C. Hall)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 148 SPECTRAL SCATTERING, FLUORESCENCE, AND RAMAN TECHNOLOGY FOR FOOD QUALITY AND SAFETY – Sponsored by PRS-701

Moderator: Jianwei Qin

LOCATION: Yucatan 2

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460153	Structured Illumination Reflectance Imaging for Enhanced Detection of Subsurface Tissue Bruising in Apples Richard Li, Michigan State University, East Lansing, MI (R. Li, r. lu, Y. Lu)
2:50PM	162460063	Using Composite Sinusoidal Patterns in Structured-illumination Reflectance Imaging (SIRI) for Enhanced Detection of Defects in Food Yuzhen Lu, Michigan State University, East Lansing, MI (Y. Lu, r. lu)
3:05PM	162460815	Acoustic emission technique for detection of Codling moth infested apples Akinbode A. Adedeji, University of Kentucky, Lexington, KY (N. Ekramirad, A. Rady, M. Li, A.A. Adedeji, R. Alimardani, A. Patwardham)
3:35PM	162457471	Development of near infrared spectroscopy model for the quantitative determination of oil content of camelina Ke Zhang, Kansas State University, Manhattan, KS (K. Zhang, z. Tan, C. Chen, X. Sun, D. Wang)
3:50PM		Break
4:00PM	162460307	Detecting adulterants in milk powder using high-throughput Raman chemical imaging Jianwei Qin, USDA-ARS, Beltsville, MD (J. Qin, M. Kim, K. Chao, S. Dhakal, H. Lee)
4:15PM	162458037	Study on Raman spectral imaging method for simultaneous estimation of ingredients concentration in food powder Sagar Dhakal, USDA-ARS, Beltsville, MD (S. Dhakal, K. Chao, J. Qin, M. Kim, W. Schmidt)

4:30PM	162461927	Application of Raman spectroscopy to detect adulteration of beef products Colm O'Donnell, University College Dublin, Dublin, Ireland (C. O'Donnell, G. Downey, M. Zhao)
4:45PM	162460193	Application of Hyperspectral Imaging Technique to Detect Adulteration in Processed Meats Ahmed Rady, University of Kentucky, Lexington, KY (A. Rady, A.A. Adedeji)

Monday, July 18 - 2:30PM - 5:00PM

SESSION 149 MICROWAVE AND RADIO FREQUENCY HEATING AND DRYING IN AGRICULTURAL AND FOOD PROCESSING – Sponsored by PRS-703

Moderator:

LOCATION: Yucatan 3

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162455972	Performance of a heating block system designed for studying the heat resistance of bacteria in foods Xiaoxi Kou, Northwest A&F University, Xi'an, China (X. Kou, R. Li, S. Wang)
2:50PM	162455958	Developing radio frequency treatments to control surrogate microorganism <i>Escherichia coli</i> ATCC 25922 in in-shell almonds Rui Li, Northwest A&F University, Xi'an, China (R. Li, X. Kou, S. Wang)
3:05PM	162455715	Computer simulation model development and validation of radio frequency heating for bulk chestnuts based on single particle approach Lixia Hou, Northwest A&F University, Xi'an, China (L. Hou, Z. Huang, X. Kou, S. Wang)
3:20PM	162461803	Microwave Energy Penetration into Rice of Different Bed Thicknesses and Impacts on Rice Quality and Microflora Deandrae Smith, The University of Arkansas, Fayetteville, AR (D. Smith, G.G. Atungulu, G.A. Olatunde, S. Sadaka, S. Rogers)
3:35PM		Break
3:45PM	162460409	One-pass Drying of Rough Rice with an Industrial Microwave- Quality and Energy Use Consideration Gbenga A. Olatunde, University of Arkansas, Fayetteville, AR (G.A. Olatunde, G.G. Atungulu, D. Smith, S. Sadaka, S. Rogers)
4:00PM	162460051	Dielectric loss mechanism of powdered infant formula milk Yanhong Liu, China Agricultural University, Beijing, China (Y. Lin, Z. Gao, S. Wang, J. Rao, Y. Liu)
4:15PM	162462973	Anthracnose control in guava fruit throughout microwave-assisted hydrothermal treatments Roberto Rojas-Laguna, Universidad de Guanajuato, Salamanca, Mexico (R. García-Martínez, A. Cerón-García, R. Rojas-Laguna, M.E. Sosa-Morales)

MONDAY, JULY 18

Monday, July 18 - 2:30PM - 5:00PM

SESSION 150

PROCESSING SYSTEMS POSTER SESSION

— Sponsored by PRS

Moderator: Shaojin Wang, Northwest A&F University

LOCATION: Veracruz C

Poster #	Paper #	Title/Authors
1	162459761	Techno-Economic Analysis of Integrated Enzyme Assisted Aqueous Extraction of Soybean Oil Ming-Hsun Cheng, Iowa State University, Ames, IA (M. Cheng, W. Zhang, J.K. Sekhon, K. Rosentrater, T. Wang, S. Jung, L.A. Johson)
2	162460326	Techno-economic analysis (TEA) of biofuels production with integrated corn and soybean biorefinery Weitao Zhang, Iowa State University, Ames, IA (W. Zhang, J.K. Sekhon, T. Wang, L.A. Johson, S. Jung, K. Rosentrater)
3	162461466	Techno-Economic Analysis of traditional adhesives used in wood sheet production Minliang Yang, Iowa State University, Ames, IA (M. Yang, K. Rosentrater)
4	162460720	Purification and component analysis of anthocyanin from blueberry peel Kai Peng, China Agricultural University, Beijing, China (K. Peng, C. Liu, W. Shunxi)
5	162460216	Antifungal activity of orange extract in corn seed stored Rayane L. Castro, Federal University of Mato Grosso, Rondonópolis, Brazil (R.L. Castro, R.L. Carvalho, N.C. Alves, M.P. Silva, N.B. Galle)
6	162458619	Effect of twin-screw extrusion processing of rice bran expansion rate Xu Wang, College of Engineering, China Agricultural University, Beijing, China (X. Wang, D. Liang, Y. Xu, Y. Zheng, H. Shi)
7	162459436	Quality Management in Pellet Feed Mill Based on Statistical Process Control (SPC) Dandan Kong, China Agricultural University, Beijing, China (F. Lv, H. Wang, D. Kong, X. Chen, Y. Yue, P. Fang)
8	162460014	Moisture sorption and desorption isotherms of powdered infant formula milk with different compositions Yanhong Liu, China Agricultural University, Beijing, China (L. Wang, Z. Gao, S. Wang, Y. Liu)
9	162460797	Physico-Chemical Analysis of Dehydrated Bananas via Charcoal Gasification and Conventional Drying Maria C. Oliveira, Universidade Federal de Mato Grosso, Ames, IA (M.C. Oliveira, J.N. Silva, R.M. Figueiredo, A.J. Queiroz, K.S. Sousa, J.L. Oliveira)
10	162461571	Ethics of Food Resource Consumption Carolina Bermudez, Iowa State University, Ames, IA (J. Behrens, C. Bermudez, S.T. Marripudi, K. Rosentrater)
11	162461963	Design of modified atmosphere package for guava and modeling shelf-life of stored guava Sanchita Biswas Murmu, Indian Institute of Technology Kharagpur, Kharagpur, India (S. MURMU)
12	162434576	A Neural Network Approach to Predict Quality of Pellet Feed Basing on Material and Process Parameters Dandan Kong, China Agricultural University, Beijing, China (X. Chen, H. Wang, D. Kong, Y. Yue, F. Lv, P. Fang)
13	162460724	Effects of conditioning processes and parameters on starch gelatinization of feed Kai Peng, China Agricultural University, Beijing, China (K. Peng, S. Zhou, C. Liu, W. Shunxi)
14	162461970	Rheological properties of lactose-free custard desserts Maria E. Sosa-Morales, Universidad de Guanajuato, Irapuato, Mexico (J.J. Ramírez-Morales, J.A. Gómez-Salazar, M.E. Sosa-Morales)

15	162461957	Postharvest quality of prickly pear fruits subjected to microwave-assisted hydrothermal treatments Priscilla I. Figueroa-Novella, Universidad de Guanajuato, Irapuato, Mexico (P.I. Figueroa-Novella, A. Cerón-García, M. Abraham-Juárez, M.E. Sosa-Morales)
16	162461777	Eggs quality in organic and conventional production system Danilo F. Pereira, Unesp, Tupã, Brazil (B.d. Tavares, D.F. Pereira, P.A. Lean, P. De Oliveira Neto, D.D. Salgado)
17	162426669	Concentrated High Intensity Electric Field (CHIEF) System for Non-thermal Pasteurization of Liquid Foods: Modeling and Simulation of fluid mechanics, electrostatics, and heat transfer Peng Peng, University of Minnesota-Twin Cities, Minneapolis, MN (P. Peng, Y. Cheng, Y. Li, X. Lin, H. Song, P. Chen, R. Ruan)
18	162454951	Analysis of pasting properties of different maize cultivars used as feed ingredient Dandan Kong, China Agricultural University, Beijing, China (D. Kong, H. Wang, X. Chen, Y. Yue, F. Lv, P. Fang)
19	162459781	Environmental Impact Analysis of Soybean Oil Production from Expelling, Hexane Extraction and Enzyme Assisted Aqueous Extraction Ming-Hsun Cheng, Iowa State University, Ames, IA (M. Cheng, W. Zhang, J.K. Sekhon, K. Rosentrater, T. Wang, S. Jung, L.A. Johson)
20	162459784	Optimization of Low Moisture Anhydrous Ammonia (LMAA) Pretreatment for Corn Stover Enzymatic Digestibility during Hydrolysis Process Ming-Hsun Cheng, Iowa State University, Ames, IA (M. Cheng, X. Cao, M. Yang, K. Rosentrater)
21	162459834	Development of advanced extraction and purification system for accurate detection of aflatoxin Jaya Sundaram, University of Georgia, Athens, GA (J. Sundaram, N. Puppala, G. Gary)
22	162460142	Sensory, microbiological and physical-chemical analysis of peanut extract enriched with strawberry pulp Rayane L. Castro, Federal University of Mato Grosso, Rondonópolis, Brazil (R.L. Castro, N.C. Alves, N.B. Galle, M.P. Silva, A.d. Vilela)
23	162460352	Assessment of low temperature closed-cycle grain drying system Kurt Rosentrater, Iowa State University, Ames, IA (M. Ma, K. Rosentrater)
24	162460355	Techno-economic analysis (TEA) and Life cycle assessment (LCA) of a closed-cycle grain drying system Kurt Rosentrater, Iowa State University, Ames, IA (M. Ma, K. Rosentrater)
25	162461143	Nondestructive detection of meat freshness using lightweight device based a ring light source structure Yankun Peng, China Agricultural University, Beijing, China (W. Wei, Y. Peng, P. Li, K. Chao, J. Qin)
26	162461187	A non-destructive detection system for determination of multi-quality parameters of meat Yankun Peng, China Agricultural University, Beijing, China (W. Wang, Y. Peng, X. Zheng, F. Tian, W. Wei)
27	162461233	Non-destructive prediction of moisture of wheat seed kernel by using VIS/NIR hyperspectral technology Xiaochun Zheng, China Agricultural University, Beijing, China (X. Zheng, Y. Peng, Y. Li, W. Wang, P. Li)
28	162462209	Inactivation of Escherichia coli O157:H7 on Goat Meat Surface Using Ozonated Water Alone and in Combination with Electrolyzed Oxidizing Water Hema Degala, Fort Valley State University, Fort Valley, GA (H. Degala, J. Scott, P. Nakkiran, A.K. Mahapatra, G. Kannan)
29	162459505	Combined mid-infrared and hot air impingement drying of cucumber slices Yanhong Liu, China Agricultural University, Beijing, China (J. Rao, Y. Xie, K. Kladniam, Y. Lin, Y. Xie, Z. Gao, Y. Liu)

- 30 162461196 **Effect of Storage Structures on Paddy Seed Quality in Bangladesh**
Md. A. AWAL, Bangladesh Agricultural University, Mymensingh, Bangladesh (M.A. AWAL, M. Hossain, M. ALI, M. Alam)
- 31 162461211 **The Moisture Change with time in Wheat Bulk under the Condition of Temperature Differences**
Jun Yin, Chinese Academy of State Administration of Grain, Beijing, China (J. Yin, Z. Zhang, T. Wang, Z. Wu, Q. Yao, Z. Mao)
- 32 162461265 **Research on the High Efficient Biological Compound Agents against the Grain Pests and the Large-scale Application**
Zhongjie Zhang, Chinese Academy of State Administration of Grain, Beijing, China (Z. Zhang, X. Zhang, J. Yin, C. Zhao, Z. Wu, Z. Mao, Q. Yao)
- 33 162461413 **Desorption Isotherm of Osmo-Convectively Dried Fresh and Frozen Blueberries**
Felix U. Akharume, West Virginia University, Morgantown, WV (F.U. Akharume, K. Singh, L. Sivanandan)
- 34 162461819 **Evaluation of Physiological Quality of Soybeans Stored in Uncontrolled Environment through Respiratory Activity**
Vinicius L. Nogueira, Universidade Federal de Mato Grosso, Rondonópolis, Brazil (A.d. Vilela, N.C. Alves, M.P. Silva, N.B. Galle, R.L. Castro, V.L. Nogueira)
- 35 162462533 **Effects of Mixing High Moisture Rough Rice with Heated Husk on Dried Rice Quality**
Sammy Sadaka, Univ. of Arkansas, Little Rock, AR (S. Sadaka, G.G. Atungulu, g. Ubhi)
- 36 162462545 **Drying Rough Rice in a Fluidized Bed Dryer Subjected to Intermittent Regime**
Sammy Sadaka, Univ. of Arkansas, Little Rock, AR (S. Sadaka)
- 37 162378067 **Soybean physiological damage analyses in different packaging during storage**
Amanda R. Santos, IFGoiano, Ipameri, Brazil (R.Q. Faria, J.F. Marques, A. Coneglian, A.R. Santos)
- 38 162378099 **Physiological quality of soybean seeds with technologies RR1 and Intacta RR2 PRO under Storage Conditions**
Rute Q. Faria, IFGoiano, Ipameri, Brazil (R.Q. Faria, T.F. Rezende, A. Coneglian)
- 39 162460019 **Optimization of drying conditions and component to reduce wall sticking during spray drying of infant formula milk**
Yanhong Liu, China Agricultural University, Beijing, China (Y. Lin, L. Wang, Y. Xie, Z. Gao, S. Wang, Y. Liu)
- 40 162460058 **Pulsed vacuum drying of Chinese yam slices**
Yanhong Liu, China Agricultural University, Beijing, China (Y. Xie, Z. Gao, Y. Liu, Y. Lin, L. Wang, Y. Xie)
- 41 162460535 **Microencapsulation of Plant-Beneficial Bacteria in Cross-Linked Alginate Microcapsules Formed by Spray-Drying**
Ryan Kawakita, University of California Davis, Foster City, CA (R. Kawakita, S.A. Strobel, H. Scher, T. Jeoh)
- 42 162460709 **Study on stability of anthocyanin from blueberry peel**
Kai Peng, China Agricultural University, Beijing, China (K. Peng, C. Liu, W. Shunxi)
- 43 162461154 **Assessment of Different Paddy Storage Technologies at Farm Households in Bangladesh**
MD. Rostom Ali, Bangladesh Agricultural University, Mymensingh, Bangladesh (M. ALI, M. Hossain, M. Awal, M. Alam)
- 44 162461170 **Drying bin size and paddy variety effects on STR dryer performance**
Md A. Momin, Bangladesh Agricultural University, Mymensingh, Bangladesh (M.A. Momin, M. Alam, C.K. Saha, M. Alam)
- 45 162461836 **Hyperspectral Imaging for Detection of Codling Moth Infestation and Prediction of Quality in Gold-Rush Apples**
Ahmed Rady, University of Kentucky, Lexington, KY (N. Ekramirad, A. Rady, A.A. Adediji, R. Alimardani, R. Bessin, J. Strang)
- 46 162462720 **Post Harvest Technologies of Paddy in Bangladesh**
Md. Monjurul Alam, Bangladesh Agricultural University, Mymensingh, Bangladesh (M. Alam, M.A. Ali, M. Awal, C.K. Saha, M. ALI, M.A. Momin, S. Begum, M. Alam, M. Hossain, A. Zahan)
- 47 162461253 **Rates of dry matter loss of high moisture soybeans stored at 25 to 45oC**
Lucas Trevisan, UIUC, Urbana, IL (L. Trevisan, M. Danao, K. Sood, R.S. Gates)
- 48 162460966 **Comparing the Fermentation Performance of Candida shehatae, Pischia stipitis and Saccharomyces cerevisiae in corn-soy system**
Kurt Rosentrater, Iowa State University, Ames, IA (V. Gaonkar, K. Rosentrater, J.K. Sekhon)
- 49 162460796 **Techno-Economic Analysis of Chicken Blood to Flocculant Production Scheme**
Kurt Rosentrater, Iowa State University, Ames, IA (R. Haylock, K. Rosentrater, R.A. Garcia, C. Mu)
- 50 162460792 **Corn Growth Modeling: Multidimensional Effects of Crop Rotation and Nitrogen Application on Grain Yield and Physical Growth**
Kurt Rosentrater, Iowa State University, Ames, IA (R. Haylock, K. Rosentrater, W. Riedell)
- 51 162460791 **Cradle to Grave Life Cycle Impact Assessment for Polylactic Acid (BIO) Composites**
Kurt Rosentrater, Iowa State University, Ames, IA (R. Haylock, K. Rosentrater)
- 52 162460770 **Postharvest losses during storage of grain crops and effective interventions to reduce these losses for smallholders**
Deepak Kumar, The ADM Institute for the Prevention of Postharvest Loss, University of Illinois at Urbana-Champaign, Urbana, IL (D. Kumar, P.K. Kalita)
- 53 162460738 **Cradle to Grave Life Cycle Impact Assessment Polypropylene with Different Filler and End of Life Options**
Weitao Zhang, Iowa State University, Ames, IA (S.T. Marripudi, K. Rosentrater, W. Zhang)
- 54 162460507 **Agriculture and Food Security in Ghana**
Kurt Rosentrater, Iowas State University, Ames, IA (B. Darfour, K. Rosentrater)
- 55 162460504 **Grain Cultivation and its Associated Problems: Overview of Ghana**
Kurt Rosentrater, Iowas State University, Ames, IA (B. Darfour, K. Rosentrater)
- 56 162460492 **Maize in Ghana: An Overview of Cultivation to Processing**
Kurt Rosentrater, Iowas State University, Ames, IA (B. Darfour, K. Rosentrater)
- 57 162459846 **Techno-Economic Analysis of Polypropylene with Different Filler and End of Life Options**
Weitao Zhang, Iowa State University, Ames, IA (S.T. Marripudi, K. Rosentrater, W. Zhang)
- 58 162459344 **The relationship between extent of hemoglobin purification and the performance characteristics of a blood-based flocculant**
Rafael A. Garcia, USDA-ARS, Wyndmoor, PA (R.A. Garcia)
- 59 162457039 **Optimization of Flat Plate Drying of Carrot Pomace**
Fatima S. Alleyne, USDA, Albany, CA (F.S. Alleyne, J.J. Ferry, R.R. Milczarek, D. Olson, R. Winston)
- 60 162456243 **Optimization of ultrasound-assisted dilute acid hydrolysis conditions of tea processing wastes**
Ali Demirci, Pennsylvania State University, University Park, PA (M. Germec, K. Tarhan, E. Yatmaz, N. Tetik, M. Karhan, A. Demirci, I. Turhan)

MONDAY, JULY 18

- 61 162456233 **Decontamination of Hard-Cooked Eggs by Pulsed UV light processing**
Ali Demirci, Pennsylvania State University, University Park, PA (D. Ercan, A. Demirci)
- 62 162456220 **Effect of UV-C and Pulsed-UV Treatments on Reduction of *Penicillium expansum* spores and *E. coli* K12 in a Model Apple Juice**
Ali Demirci, Pennsylvania State University, University Park, PA (D. Ercan, S.A. Wang, A. Demirci, L.F. LaBorde, R.J. Elias)
- 63 162455818 **Raman Spectral Imaging Technique on Detection of Melamine in Skim Milk Powder**
Kuanglin Chao, USDA/ARS, Beltsville, MD (K. Chao, S. Dhakal, J. Qin, m. kim)
- 64 162462960 **Primary and secondary antioxidants to prevent oil degradation during repeated frying of French fries and chicken nuggets**
Diana G. Rocha-González, Universidad de Guanajuato, Irapuato, Mexico (D.G. Rocha-González, P.d. García-Guerrero, A. Cerón-García, C.C. Morlán-Palmas, M.E. Sosa-Morales)
- 65 162460866 **Extrusion of gluten-free grains**
Jiang Xin, Iowa State University, Ames, IA (J. Xin, K. Rosentrater)
- 66 162460746 **Investigating Fungal Degradation of Switchgrass in a Controlled Storage Environment**
Mark R. Wilkins, Oklahoma State University, Stillwater, OK (G. Shelyn, M. Buser, S. Marek, D. Carrier, M.R. Wilkins, A. Singh Turay, C.C. Craige)
- 67 162461260 **Pectin from cranberry pomace: microwave-assisted extraction and emulsion stability potential.**
Lanrewaju R. Adetunji, McGill University, Sainte-Anne-De-Bellevue, Canada (L.R. Adetunji, V. Raghavan)
- 68 162461850 **Optimization of Dialyzed Natuphos Phytase Enzymatic Kinetics in Red Kidney Beans (*Phaseolus vulgaris* L)**
Lamin S. Kassama, Alabama A&M University, Normal, AL (O. Tasie, L.S. Kassama)
- 69 162459327 **Development of Lignin-Protein Based Adhesive**
Sarocha Pradyawong, Kansas State University, Manhattan, KS (S. Pradyawong, G. Qi, N. Li, D. Wang)
- 70 162460897 **Utilization of Food Waste from ISU Dining for Ethanol Production**
Kurt Rosentrater, Iowa State University, Ames, IA (N. Muhammad, K. Rosentrater)
- 71 162458595 **Extrusion-assisted extraction of insoluble dietary fiber from rice bran and its physical properties**
Xu Wang, College of Engineering, China Agricultural University, Beijing, China (X. Wang, D. Liang, Y. Xu, H. Shi)
- 72 162460045 **Dielectric properties of powdered infant formula milk as influenced by frequency, temperature and main components**
Yanhong Liu, China Agricultural University, Beijing, China (Y. Lin, Z. Gao, S. Wang, L. Wang, Y. Xie, Y. Liu)
- 73 162439973 **structure-reactivity relationships in cane sugar antioxidants**
Minori Uchimiya, USDA, New Orleans, LA (M. Uchimiya)
- 74 162462715 **Physico-chemical properties of pectin/vinasse films intended for agriculture applications**
Mariana Altenhofen da Silva, Federal University of São Carlos (UFSCar), Araras, Brazil (M. Altenhofen da Silva, D. Dangelo Papaiz, M.T. M.R. Borges)
- 75 162469992 **Dynamics of Biochemical component in liquid phase for Tea-seed-water-milk colloid in fermentation**
Jinzhong Jiang, Guizhou Education University, Guiyang, China (J. Jiang)
- 76 162460416 **Proliferation and Osteogenic Differentiation of Human Dental Pulp Stem Cells on Reduced Graphene Oxide-Incorporated Nanofibers**
Jong Hoon Chung, Seoul National University, Seoul, Korea (the Republic of) (H. Seonwoo, K. Jang, K. Lim, J. Kim, S. Park, B. Kim, P. Choung, J. Chung)

- 77 162457942 **Direct and Simultaneous Production of Glucose Sweetener from Native Starch**
Arthur A. Teixeira, University of Florida, Gainesville, FL (S.N. ASO, A.A. Teixeira, B. Welt)
- 78 162462309 **Physiological quality of crambe seeds submitted to drying**
Rute Q. Faria, IFGoiano, Ipameri, Brazil (R.Q. Faria, I.R. Teixeira, I.A. Devilla, D.A. Cunha, J.M. Honorato)
- 79 162461287 **Kinetics of NiCeMgAl bimodal pore catalyst for CO2 reforming with model biogas**
Zhenghong Bao, Mississippi State University, Starkville, MS (Z. Bao, Y. Lu, F. Yu, Y. Li)
- 80 162496413 **Enzymatic Process for Making Plasticizers from High Oleic Soybean Oil**
Julia A. Burchell, Purdue University, West Lafayette, IN (J.A. Burchell, S. Duque Martinez, X. Zhang, N.S. Mosier)
- 81 162526025 **Thermal Analysis of Barrels for Craft Beer Storage**
Dylan Perraut, Big Ass Solutions, Lexington, KY (D. Perraut, P. Paulausky, D. Salyer, B. Adam, J. Fizer)

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

SESSION 151

2016 BILLION-TON REPORT: ADVANCING DOMESTIC RE- SOURCES FOR A THRIVING BIOECONOMY - INVITED SPEAKERS – Sponsored by MS-23/7/2

Moderators: Shahab Sokhansanj, Oak Ridge
National Lab, North Vancouver,
Canada
Sam Tagore, DOE

LOCATION: Coronado P

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162560207	BT16 Overview Mark Elless, US Dept of Energy, Washington, (M. Elless)
9:55AM	162560209	Forest Resource Assessment Methods Bryce J. Stokes, CNJV, Washington, (B.J. Stokes)
10:15AM		Ag Resource Assessment Methods TBA
10:35AM	162560211	Delivered Cost Erin Webb, Oak Ridge National Laboratory, Oak Ridge, TN (E. Webb)
10:55AM		Break
11:05AM		Bioenergy Knowledge Discovery Framework: BT16 Interactive Version TBA
11:20AM	162560213	Estimating the Required Logistical Resources to Support the Development of a Sustainable Corn Stover Bioeconomy in the US Mahmood Ebadian, The University of British Columbia, Vancouver, Canada (M. Ebadian)
11:35AM	162567462	Regional Feedstock Partnerships Vance Owens, South Dakota State University, Brookings, SD (V. Owens)
11:50AM	162461605	Spatial analysis of distributed depots for advanced biomass processing Erin Webb, Oak Ridge National Laboratory, Oak Ridge, TN (E. Webb)

TUESDAY, JULY 19

TECHNICAL PROGRAM

Tuesday, July 19

9:30AM - 12:15PM

The purpose of these sessions is the open exchange of ideas, therefore, remarks made by a participant or member of the audience cannot be quoted or attributed to either the individual or the individuals' company. No recording of the participants' remarks or discussion is permitted. Pictures of any material shown here are not permitted.

In respect for the presenters and the people attending the conference, ASABE would request that anyone having a pager, cell phone, or other electronic device please turn them off. If your situation does not allow for these devices to be turned off, please reseat yourself close to an exit such that everyone can benefit from the information presented here without disruption.

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

SESSION 201

FOREST BASED BIOMASS: HARVESTING, PROCESSING, TRANSPORT AND STORAGE

— Sponsored by ASE-12

Moderator: Emily Carter

LOCATION: Coronado A

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460764	Impact of Plant Characteristics on Berry Losses during Mechanical Harvesting of Wild Blueberry Arnold W. Schumann, University of Florida, Lake Alfred, FL (M.W. Jameel, Q. Zaman, A.W. Schumann, T. Nguyen-Quang, A. Farooque)
9:50AM	162461743	Empirical models to predict drying rate of switchgrass based on swath density, environmental conditions and stage of maturity Amit Khanchi, Iowa State University, Ames, IA (A. Khanchi, S. Birrell)
10:05AM	162458172	Residue distribution and biomass recovery following biomass harvest of plantation pine J. M. Grace, USDA Forest Service, Center for Forest Watershed Research, Tallahassee, FL (J.M. Grace, J.F. Klepac, S. Taylor, D. Mitchell)
10:20AM	162461639	The Effect of Substrate Density on Biological Pretreatment Amanda Hickman, University of Kentucky, Lexington, KY (A. Hickman, S. Nokes)
10:35AM		Break
10:45AM	162461523	Struggles in Small Tract Forestry Emily A. Carter, USDA Forest Service, Southern Research Station, Auburn, AL (D. Mitchell, J. Thompson, E.A. Carter)
11:00AM	162458807	A study on wood chipper fuel efficiency and wood chip mass flow rate Pengmin Pan, Auburn University, Auburn, AL (P. Pan, T.P. McDonald, C. Xue)
11:15AM	162461144	Influence of Cold Plasma Treatment on Ear Characters and Group Quality of Wheat Zhuoliang He, Zhejiang University, Hangzhou, China (Z. He, Y. Wang, J. Wang, C. Tang)
11:30AM	162461509	Global Sensitivity Analysis and Uncertainty Analysis to Assess Forest Biomass Estimation in Southwest Amazonia N. Galia Selaya-Garvizu, University of Florida, Gainesville, FL (N. Selaya-Garvizu, R. Munoz-Carpena, D. Da Silva)

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

SESSION 202

EDUCATION, OUTREACH, & PROFESSIONAL DEVELOPMENT

POSTER SESSION — Sponsored by EOPD

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
1	162461225	The Development and Experience of Agricultural Machinery Cooperatives of China Aiping Pang, China Agricultural Machinery Testing Centre, Beijing, China (A. Pang, J. Feng, F. Wen, J. Tian, Y. Wang, Y. Zhou)
2	162460812	Professional development needs of [STATE] school-based agricultural educators regarding CNC plasma cutting technology: A snapshot assessment method G. Curtis Langley, Tarleton State University, Stephenville, TX (G. Langley, P. Saucier)
3	162461857	Development of resource modules to enhance project based learning in an interdisciplinary engineering course Bhavna Sharma, ISU, Ames, IA (B. Sharma, B. Steward, S. Ong, F. Miguez)
4	162460877	Assessing knowledge, performance, and consequence competence in a technology-based professional development for school-based agricultural educators: An evaluation of the CNC Plasma Cutting Technology Workshop G. Curtis Langley, Tarleton State University, Stephenville, TX (P. Saucier, G. Langley)
5	162458137	Peer Mentoring for First Year Undergraduate Students in ABEN and ASM Programs Xinhua Jia, North Dakota State University, Fargo, ND (X. Jia, G. Peterson, D. Wiesenborn, S. Bajwa)
6	162419942	Soil & Water Science Curriculum for Informal Youth Education Natalie Carroll, Purdue University, West Lafayette, IN (N. Carroll)
7	162462966	CenUSA Bioenergy Education Module Program Patrick T. Murphy, Iowa State University, Ames, IA (P.T. Murphy, A. Kohmetscher, D. Namuth-Covert, G. Nugent, J. Guretzky)
8	162462978	High School Outreach on Conservation Agriculture: Exposing young students to STEM in Agriculture Manuel R. Reyes, North Carolina Agricultural and Technical State University, Greensboro, NC (M.R. Reyes, G. Gayle, D.A. Edralin, K.N. Le)
9	2454676	Identification of Rainy and Dry Periods and the Influence on Coffee Production of Mountain of Matas de Minas Williams P. Ferreira, Brazilian Agricultural Research Corporation, Viçosa, Brazil (W.S. Júlio, W.P. Ferreira, E.S. Fialho, C.F. Siuza)

TUESDAY, JULY 19

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 203

TECHNO-ECONOMIC AND LIFE CYCLE ASSESSMENT OF BIOENERGY & AGRICULTURAL SYSTEMS – Sponsored by ES-220

Moderators: Deepak Kumar, University of Illinois at Urbana–Champaign, Urbana, IL
Ganti Murthy, Oregon State University, Corvallis, OR

LOCATION: Coronado B

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460717	Dynamic Systems Approach for Integrating Models and Frameworks Applied to the Pig Sector Shannon C. Banner, North Carolina State University , Raleigh, NC (S.C. Banner, J. Classen, D.D. Zering)
9:50AM	162444396	Life cycle carbon footprint and energy intensity of Wisconsin pasture-based dairy systems Rebecca Larson, University of Wisconsin-Madison, Madison, WI (H.A. Aguirre-Villegas, R. Larson, D. Reinemann)
10:05AM	162461527	Cradle-to-gate carbon footprint of industrial-beet sugars for nonfood fermentations Juan M. Vargas-Ramirez, North Dakota State University, Fargo, ND (J.M. Vargas-Ramirez, D. Wiesenborn, D. Ripplinger, S.W. Pryor)
10:20AM	162431731	Impacts of Agronomic Practices on a South African Sugarcane LCA Scott W. Pryor, NDSU, Fargo, ND, United States (S.W. Pryor, P. Tweddle, J. Smithers)
10:35AM	162461826	Techno economic and life cycle assessment of anaerobic digestion of Napier grass in Hawaii Seyed Mohammad Hossein Tabatabaie, Oregon State University, Corvallis, OR (S. Tabatabaie, C. Sawatdeenarunat, S. Khanal , G.S. Murthy)
10:50AM	162461945	Process modeling and simulation of anaerobic co-digestion of food wastes and biomass to produce Bio-CNG Sudhagar Mani, University of Georgia, Athens, GA (J. Sundaram, K. Das, Y. Li, S. Mani)
11:05AM		Break
11:15AM	162460891	Hydrothermal liquefaction of biomass to biofuels: A techno-economic analysis Mayank Kumar, University of Alberta, Edmonton , Canada (M. Kumar, A.O. Oyedun, A. Kumar)
11:30AM	162460662	Comparative assessment of techno-economic analysis and EROI analysis of production of oxymethylene ethers (OME) from different biomass Adetoyese O. Oyedun, University of Alberta, Edmonton, Canada (A.O. Oyedun, A. Kumar, D. Oestreich, U. Arnold, J. Sauer)
11:45AM	162461618	Techno-economic Analysis of Biological Pretreatment of Corn Stover Nawa Raj Baral, The Ohio State University, Wooster, OH (N. Baral, A. Shah)

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

SESSION 204

RENEWABLE ENERGY RESOURCES AND TECHNOLOGIES - PART 1

– Sponsored by ES-210
Moderator: Jun zhu, University of Arkansas, Fayetteville, AR

LOCATION: Coronado C

Time	Paper #	Title/Authors
9:30AM		Introduction
9:50AM	162459968	Protein based solid electrolyte from abundant Canola meal protein Xiaolu Zhu, Washington State University, Richland, WA (X. Zhu, G. Yadavalli, H. Lei, X. Zhang, M. Qian, J. Chan, L. Zhu, Y. Liu, D. Yan)
10:05AM	162432931	Torrefaction with a woody waste (Ashe Juniper) using a solar driven pyrolysis reactor and its pelletization evaluation Hyungseok Nam, Texas A&M University, College Station, TX (H. Nam, T.M. Salcedo, S.C. Capareda)
10:20AM	162462185	Evaluation of Three Varieties of Sweet Sorghum Feedstocks for Bioethanol Production Daniel Ekefre, Fort Valley State University, Fort Valley, GA (D. Ekefre, A.K. Mahapatra, M. Latimore, Jr., A.L. Williams, U. Jena, D. Bellmer)
10:35AM		Break
10:45AM	162461994	Thermal Analysis of Pelletized Composite Fiber-Plastic Biomass Feedstock Edris Madadian, McGill University, Montreal, Canada (E. Madadian, H. Akbarzadeh, M.G. Lefsrud)
11:00AM	162459812	The Influence of Hydrogen Concentration in Sparging Gas on Hydrogen Production and Consumption via Anaerobic Fermentation Yuanyuan Wang, Huazhong Agricultural University, Wuhan, China (Y. Wang, C. Wu, L. Meng)
11:15AM	162456278	Simultaneous saccharification and ethanol fermentation by co-culture in biofilm reactor Ali Demirci, Pennsylvania State University, University Park, PA (G. Izmirliglu, A. Demirci)

Tuesday, July 19 - 9:30AM - 12:30PM

SESSION 205

BIOMASS FEEDSTOCK SUPPLY LOGISTICS AND MODELING – Sponsored by ES-220

Moderator: Igathinathane Cannayen

LOCATION: Coronado D

Time	Paper #	Title/Authors
9:30AM		Introduction
9:45AM	162461278	Spatial modeling framework for cellulosic ethanol plant siting in the contiguous U.S. Bhavna Sharma, ISU, Ames, IA (B. Sharma)
10:00AM	162460293	Spatial Analysis of Stover Moisture Content during Harvest Season in the United States Oluwafemi Oyedemi, University of Tennessee, Knoxville, TN (S. Sokhansanj, O. Oyedemi, E. Webb)
10:15AM	162461933	Sustainable assessment of agricultural crop residues using integrated GIS and ANN predictive modeling tools for a biorefinery Kamalakanta Sahoo, University of Georgia, Athens, GA (K. Sahoo, S. Mani)
10:30AM	162461747	Biomass Bale Stack Location for Efficient Infield Logistics Subhashree Navaneetha Srinivasagan, North Dakota State University, Fargo, ND (S. Navaneetha Srinivasagan, I. Cannayen, G.C. Bora)
10:45AM	162461847	Data Collection and Logistics Analysis for Cellulosic Feedstock Transportation System Jeremy Brue, Iowa State University, Ames, IA (J. Brue, K. Webster, M. Darr, A. Shah, N. Baral)

TUESDAY, JULY 19

11:00AM	162461637	A Modelling Approach to Estimating Regional U.S. Logging Residue Supply Jason P. Jones, RTI International, Durham, NC (J.P. Jones, J. Baker, G. Latta, Y. Cai)
11:15AM		Break
11:25AM	162461226	Efficient biomass bales infield logistics through bale stack and field outlet locations Igathinathane Cannayen, North Dakota State University, Fargo, ND (I. Cannayen, J.S. Tumuluru, D. Keshwani)
11:40AM	162460761	Modeling industry-scale feedstock storage operations: impact of biomass yield on the biomass inventory and storage cost Mahmood Ebadian, The University of British Columbia, Vancouver, Canada (S. Sokhansanj, E. Webb, M. Ebadian)
11:55AM	162447817	Analysis of the productivity, energy requirements and costs of BioMass Optimized Delivery Systems (BioMODS) using the Integrated Biomass Supply Analysis and Logistics Model (IBSAL) Daniela S. Gonzales, Texas A & M University, College Station, TX (D.S. Gonzales, S.W. Searcy, K.J. Shinnors)
12:10PM	162447795	GIS-Based Allocation of Lignocellulosic Biorefineries and Depots Daniela S. Gonzales, Texas A & M University, College Station, TX (D.S. Gonzales, S.W. Searcy)

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

SESSION 206

CURRICULUM RESOURCES AND ONLINE TECHNOLOGIES FOR AGRICULTURAL SAFETY & HEALTH – Sponsored by ESH

Moderator: Dee Jepsen, Ohio State Univ, Columbus, OH

LOCATION: Coronado E

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461707	Summary of Pre- and Post-Test Findings of a Curriculum for Young and Beginning Workers in the Grain Industry William E. Field, Purdue University, West Lafayette, IN (W.E. Field, Y. Cheng, B. French)
9:50AM	162461548	Grain Dust Explosions: Construction of a Root Cause Analysis for Safety Training Gretchen A. Mosher, Iowa State University, Ames, IA (G.A. Mosher, K. Ambrose, S. Ramaswamy, D. Maier)
10:05AM	162461671	Online Tool for Evaluating Effectiveness of Manure Pit Ventilation to Reduce Entry Risk Harvey B. Manbeck, Penn State University, Boalsburg, PA (H.B. Manbeck, D.W. Hofstetter, D. Murphy, V.M. Puri)
10:20AM	162460344	Assessing Compliance Issues for the New Regulations in Agricultural Worker Protection Standards F. R. Beard, Utah State University, Logan, UT (F.R. Beard, M.L. Pate, K. Hall, B. Miller, R. Miller)
10:35AM		Break
10:45AM	162457078	Farmers' Perceptions on the Utility of Auto-guidance Technology to Improve Operator Safety Michael L. Pate, Utah State University, Logan, UT (T. Bleazard, M.L. Pate, R. Lawver, C. Israelsen, R. Hatch)
11:00AM	162458830	Revitalizing the National Agricultural Safety Database: Current Progress and Future Plans Aaron Yoder, UNMC, Omaha, NE (A. Yoder)
11:15AM	162449890	From Paper and PC, to Your Pocket: Farm-Hat Going Mobile Bryan Weichelt, National Farm Medicine Center, Marshfield, WI (B. Weichelt, C. Bendixsen, D. Murphy, M. Keifer)

11:30AM	162458836	Agricultural Health and Safety Mobile App Evaluation Methodology Aaron Yoder, UNMC, Omaha, NE (A. Yoder, I. Reyes, T. Ellis, M. Keifer)
---------	-----------	---

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

SESSION 207

INFORMATION, TECHNOLOGY, SENSORS, & CONTROL SYSTEMS POSTER SESSION – Sponsored by ITSC

Moderator: Joseph Dvorak

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
10	162460967	Regression model of tomato hydroponics nutrient solution EC/PH value and the quantity of mother solutions Yong Wu, China Agricultural University, Beijing, China (Y. Wu, L. Li, H. Liu, J. Wang, M. Li, J. Zhang, W. Yang, H. Sun)
11	162460956	Development of a Portable Soil EC Measuring System Minzan Li, China Agricultural University, Beijing, China (J. Zhang, M. Li, H. Sun, X. Chen, Y. Wu, W. Yang)
12	216460920	Wireless Sensor Networks for tea plantation monitoring in Southeast of China xu wei, Fujian Agriculture And Forestry University, Fuzhou, China (x. wei)
13	162460909	Software development of STS Miniature spectrometer for crop monitoring system Hong Sun, China Agricultural University, Beijing, China (M. Cheng, H. Sun, M. Li, H. Liu, Y. Wu, X. Pei, W. Yang)
14	162460846	Development of a Village Safety Evaluation Model using Vulnerability Assessment Jeon Jeongbae, Chungbuk National University, Cheongju, Korea (the Republic of) (J. Jeongbae, Y. SeongSoo)
15	2460626	Estimation of Winter Wheat Chlorophyll Content Based on the Reflectance of Both Inflection Point and Green Peak Haojie Liu, China Agricultural University, Beijing, China (H. Liu, H. Sun, M. Li, C. Meng, Y. Wen, Y. Zhao)
16	2458799	Design of the Control System of Breeding Water Boiler Level Based on The Single-chip Microcomputer Changbin He, China Agricultural University, Beijing, China (J. Gao, L. Liu, D. Wang, D. Meng, B. Ye, C. He)
17	162439905	Application of a WT-LSSVR model for quantitative determination of heavy metals in voltammetric electronic tongue Zhiqiang Wang, Shandong University of Technology, China, Zibo, China (Z. Wang, Q. shi, X. He, z. ma)
18	162436951	Study on Economy Evaluation Methods on Recycling Battery Packs Chengshan Xu, College of Engineering, China Agricultural University, Beijing, China (C. Xu, L. Guo, H. Lu, F. Jiang, Y. Peng)
19	162462725	Development of Egg Grading Information Management Software System Seung-Chul Yoon, USDA-ARS, Athens, GA (S. Yoon, T. Shin, K.C. Lawrence, D.R. Jones)
20	162461427	Temperature Correction Methodology for Fluorescence Measurement of Proteins Fred Payne, University of Kentucky, Lexington, KY (F. Payne, M.P. Sama)
21	162461203	Remote Sensing Technique to Identify and Detect Rhizoctonia Solani in Sugar beet Under Greenhouse Conditions Saravanan Sivarajan, North Dakota State University, Fargo, ND (S. Sivarajan, S. Bajwa, M. Khan, J. Nowatzki, A. Shirzadifar, M. Maharlooeei)

- | | | | | | |
|----|-----------|--|----|-----------|--|
| 22 | 162461004 | Development and application of Spectrum Sensors for maize
Minzan Li, China Agricultural University, Beijing, China (Y. Zhao, H. Liu, H. Sun, W. Yang, M. Li, Y. Wen) | 38 | 162459827 | CANdroid: Freeing ISOBUS Data and Enabling Machine Data Analytics
Yang Wang, Purdue University, West Lafayette, IN (Y. Wang, A.D. Balmos, A.W. Layton, S. Noel, J.V. Krogmeier, D. Buckmaster, A. Ault) |
| 23 | 162461000 | Speed signal monitoring system of spray machine based on ZigBee and 4G technology
Wei Yang, China Agricultural University, Beijing, China (W. Yang, M. Li, L. Zheng, H. Sun) | 39 | 162460871 | Nondestructive detection of carbendazim residue in apples by using surface-enhanced Raman spectroscopy
Yankun Peng, China Agricultural University, Beijing, China (C. Zhai, Y. Peng, Y. Li, Y. Yang, K. Chao, J. Qin) |
| 24 | 162460999 | Effect of spectra preprocessing method on winter wheat chlorophyll content detection
Bohui Mao, China Agricultural University, Beijing, China (B. Mao, M. Zhang, H. Liu, H. Sun, M. Li, W. Yang) | 40 | 162461723 | Waveband selection and algorithm development to distinguish fecal contamination using multispectral imaging with solar light
Colm D. Everard, ARS, USDA, Beltsville, MD, United States (C.D. Everard, H. Cho, M. Kim, C. O'Donnell) |
| 25 | 162460998 | Development of position monitoring system for multi-spectral image acquisition of crop canopy
Hong Sun, China Agricultural University, Beijing, China (H. Sun, M. Cheng, Y. Wen, M. Li, M. Zhang, W. Yang, L. Zheng) | 41 | 162460338 | Dielectric properties of biomass/biochar mixtures between 0.5 and 20 GHz
Pranjali Muley, Louisiana State University, Baton Rouge, LA (C. Ellison, M.S. McKeown, S. Trabelsi, D. Boldor, P. Muley) |
| 26 | 162460987 | The diagnosis of crop coverage degree based on multi spectral image analysis
Yao Wen, China Agricultural University, Beijing, China (Y. Wen, M. Cheng, B. Mao, H. Sun, M. Li, Y. Zhao) | 42 | 162460400 | Determination of Chicken's pH Value Using Near-infrared Spectroscopy
Yankun Peng, China Agricultural University, Beijing, China (W. Wang, X. Tang, Y. Peng, F. Wang, Y. Li) |
| 27 | 162460985 | A New Design of Catching Platform for Apple Mechanical Harvesting and Relevant Test
Minzan Li, China Agricultural University, Beijing, China (M. Zhang, Q. Zhang, H. Sun, L. He, M. Li) | 43 | 162460567 | Microstructure and Ultrastructure in Plant Leaves of Cucumber as Influenced by Phosphorus
Qinglin Li, Jiangsu University, Zhenjiang, China (Q. Li, J. Sun) |
| 28 | 162460887 | Plant leaves moisture detecting based on zigbee network
Minzan Li, China Agricultural University, Beijing, China (X. Chen, M. Li, H. Sun, J. Zhang, B. Mao, M. Cheng) | 44 | 162462686 | Detection of grey mold disease on tomato leaves at different infected stages using hyperspectral imaging
Chuanqi Xie, University of Minnesota, St. Paul, MN (C. Xie, C. Yang, Y. He) |
| 29 | 162460631 | An image analysis method for vitality identification of vegetable seeds
Yankun Peng, China Agricultural University, Beijing, China (J. Bai, Y. Peng, W. Wei) | 45 | 162459607 | Hyperspectral reflectance imaging for benzoyl peroxide detection in flour
Min Huang, Jiangnan University, Wuxi, China (M. Huang, M. Kim, K. Chao, J. Qin, Q. Zhu) |
| 30 | 162460566 | Navigation System of Pushing-forage Robot Based on WiFi Technology
Yongjun Zheng, China Agricultural University, Beijing, China (G. Wu, X. Chen, Y. Zheng, Y. Tan, S. Li, X. Liu) | 46 | 162461739 | Biological sample evaluation using a line-scan based SWIR hyperspectral imaging system
Seok Min Hong, Agricultural Research Service, USDA, Beltsville, MD, United States (S. Hong, H. Lee, I. Baek, M. Oh, M. Kim) |
| 31 | 162460565 | Research of dynamic path planning of feed push robot based on A Star algorithm
Yu Tan, College of Engineering, China Agricultural University, Beijing, China (Y. Tan, K. Zhu, G. Wu, S. Li, X. Liu) | 47 | 162461030 | Wavelength selection for hyperspectral images of maize seeds based on principal skewness analysis
Qibing Zhu, Jiangnan University, Wuxi, China (S. Yang, Q. Zhu, M. Huang) |
| 32 | 162460559 | Improved standard diffusion approximation for optical parameters inversion of biological tissue
Qibing Zhu, Jiangnan University, Wuxi, China (Y. Xing, Q. Zhu, M. Huang) | 48 | 162460549 | Purity discrimination of maize seeds based on hyperspectral imaging combined with large margin projected transductive support vector machine
Min Huang, Jiangnan University, Wuxi, China (C. He, M. Huang, Q. Zhu) |
| 33 | 162460558 | Research on Fuzzy Control based robot auto-recharging path tracking method
Yu Tan, College of Engineering, China Agricultural University, Beijing, China (Y. Tan, W. Wen, G. Wu, S. Li, X. Liu) | 49 | 162436955 | Multi-parameter evaluation method of rubber cushion's vibration-absorption effect
Chengshan Xu, College of Engineering, China Agricultural University, Beijing, China (H. Lu, C. Xu, Q. Zhang, F. Jiang, Y. Peng) |
| 34 | 162460556 | Greenhouse crop growth environment Remote Monitoring System
Yongjun Zheng, College of Engineering, China Agricultural University, Beijing, China (X. CAO, Y. Zheng, L. Huang, Y. Tan) | 50 | 162462039 | Comparison of direct and diffuse illumination for hyperspectral imaging of cereal and seeds
Colm O'Donnell, University College Dublin, Dublin, Ireland (C. Esquerre, M. Kim, S. Delwiche, C. O'Donnell) |
| 35 | 162460226 | Development and evaluation of conditional a priori probability density functions for prediction of temporal distribution of transport requests for a robot-aided strawberry harvesting
Farangis Khosro Anjom, UC Davis, Davis, CA (F. Khosro Anjom, R. Rehal, S.G. Vougioukas) | 51 | 162462786 | Assessment of pork and poultry meat and bone meal using hyperspectral fluorescence imaging
Mirae Oh, Agricultural Research Service, U.S Department of Agriculture, Beltsville, MD, United States (M. Oh, H. LEE, I. Baek, K. Lee, H. Cho, S. Moon, E. Kim, M. Kim) |
| 36 | 162460117 | Navigation of Agricultural Fields using a Vision and Range Finder based Controller
Douglas Freese, University of Central Florida, Orlando, FL (D. Freese, Y. Xu) | 52 | 162460517 | Risk analysis of extreme weather events during the phenological phases of maize and soybean development in Nebraska State, USA
Diego Noleto Luz Pequeno, University of Florida, Gainesville, FL (D. Noleto Luz Pequeno, C. Fraisse, N. Guindin, C. Crawford, D. Perondi, A.P. Wagner, D. Dantas Barreto, C.G. Staub, E. Gelsner, M. Lima, V. Cerbaro, X. Shen) |
| 37 | 162380922 | Using RGB-based vegetation indices for monitoring guayule biomass, moisture content and rubber
Diaa Eldin M. Elshikha, USDA-ARS, Arid Land Agricultural Research Center, Maricopa, AZ, United States (D.M. Elshikha, D. Hunsaker, K. Bronson, P. Sanchez) | | | |

- 53 162458663 **A site-specific Strawberry Disease monitoring using Wireless Sensor Network**
Thiago Borba Onofre, University of Florida, Gainesville, FL (T. Borba Onofre, V. Cerbaro, N.A. Peres, L. Zotarelli, C. Fraisse)
- 54 162457887 **Agro-Meteorological Nowcaster (AMEN) for the Monitoring and Forecasting of Evapotranspiration**
Wonsik Kim, National Institute for Agro-Environmental Sciences, Tsukuba, Japan (W. Kim)
- 55 162462680 **Bioacoustics as new approach for monitoring of poultry health condition**
Alireza Mahdavian, Tarbiat Modares University, Tehran, MN, Iran (the Islamic Republic of) (A. Mahdavian, S. Minaei, F. Almasganj, S. Rahimi, C. Yang, P. Marchetto)
- 56 162462771 **Healthy and unhealthy broiler chicken call extraction using energy and entropy biased features**
Alireza Mahdavian, Tarbiat Modares University, Tehran, MN, Iran (the Islamic Republic of) (A. Mahdavian, S. Minaei, F. Almasganj, S. Rahimi, C. Yang, P. Marchetto)
- 57 162456197 **Development an electronic tongue system based on virtual instrument technology for identification and classification of soft drinks**
Zhiqiang Wang, Shandong University of Technology, China, Zibo, China (X. He, Z. Wang, Q. shi, z. Ma)
- 58 162460680 **Electronic-Nose Application for Fruit Identification by Artificial Neural Network Algorithm**
Wenshen Ja, Beijing Academy of Agriculture and Forestry Science, Beijing 100097, China; Beijing, China (C. Wan, W. Ja, L. Pan, J. Wang, J. Tao)
- 59 162461967 **Low-cost Paper-based Colorimetric Assay for Diagnosis of Crop Drought Stress**
Kyeong Hwan Lee, Chonnam National University, Department of Rural and Biosystems Engineering, Gwangju, Korea (the Republic of) (J. Jeong, B. Kim, C. Kim, K. Lee)
- 60 162460588 **Electrochemical Detection of Methyl Parathion Deposition Using Well-Dispersed ZnO Nanocrystals on Nitrogen-Doped Graphene**
Xiaoya Dong, School of Agricultural equipment Engineering, Zhenjiang, China (X. Dong)
- 61 162425639 **Continuous motion 3D Reconstruction of tree canopy using multiple binocular stereo vision pairs for use with Citrus Harvester**
HongJae KIM, University of Florida, Gainesville, FL (H. KIM, T.F. Burks)
- 62 162455428 **Research on Japonica rice yield model of North China based on UAV Remote Sensing**
Xu Tongyu, Shenyang Agricultural University, Shenyang, China (Y. Fenghua, X. Tongyu, C. Chunling, H. Xue)
- 63 162460053 **Detection system of Rice precision bunch planting mechanism seeding quality based on Labview**
Guozhong Zhang, Huazhong Agricultural University, Wuhan, China (G. Zhang, W. Yang, S. Zhang)
- 64 162460593 **The methods of computer image analysis using in the grape fruit quality detection in China**
Cailling Liu, China Agricultural University, Beijing, China (E. Luo, W. Shunxi, C. Liu)
- 65 162460671 **Precision Target Spraying in Greenhouse Based on Internet Remote Control**
Nan Li, China Agricultural University, Beijing, China (F. Qu, J. Zhang, B. Xiong, X. Li, Q. Ma, N. Li, W. ZHANG, Y. TAN, W. Li)
- 66 162461033 **Analysis of Result for Text Mining of Climate change use Big Data**
- Focusing on Internet News Account -
Jaehyeong Woo, Chungbuk National University, Chungju-si, Korea (the Republic of) (J. Woo, S. Youn, J. Jeon)
- 67 162461288 **The Development of Smart Gateway Based on WSN and ARM for Parameters Control in Solar Greenhouse**
Wenchao Zhang, China Agricultural University, Beijing, China (W. Zhang, N. Liu, X. Han, M. Zhang)
- 68 162461520 **Peach Blossom Monitoring Using Aerial Multispectral Imaging**
Duke M. Bulanon, Northwest Nazarene University, Nampa, ID (D.M. Bulanon, E. Cano, R. Horton, E. Fallahi)
- 69 162462238 **Research of Lighting Effect for Pig Weight Estimation Platform**
Guanghui Teng, China Agricultural University, Beijing, China (X. Du, G. Teng, Z. Li, F. Lao, H. Chen)
- 70 162462643 **Design and Development of Mobile Client for Large-Scale Farming of Laying Hens**
Hongxi Chen, College of Water Resources and Civil Engineering, China Agricultural University, Beijing, China (H. Chen, G. Teng, X. Du, c. meng)
- 71 162462927 **Identification and Counting of Soybean Aphids from Digital Images using Particle Separation and Shape Classification**
Sunoj Shajahan, North Dakota State University, Fargo, ND (S. Shajahan, S. Sivarajan, M. Maharlooei, S. Bajwa, J.P. Harmon, J. Nowatzki, I. Cannayen)
- 72 162468343 **Analysis of Impact Factors on the Quality of Roots Imaging in Soil with CBCT**
Xuecheng Zhou, South China Agricultural University, Guangzhou, China (X. Zhou, C. Zhang, Y. Li, X. Luo)
- 73 162469983 **Detection of salient region of in-field corn images based-on visual attention mechanism**
Lanlan Wu, Huazhong Agricultural University, Wuhan, China (L. Wu, H. Peng, M. Li)
- 74 162475318 **A Study on the Development of Standard Model for Disaster Information Map**
Yong-Seong Kim, Kangwon National University, Chuncheon-si, Korea (the Republic of) (Y. Kim, H. Lim, S. Park, J. Kim, J. Kim)
- 75 162460068 **Design of vertical automatic apple peeler and core machine**
Tao Cui, China Agricultural University, Beijing, China (X. Yin, T. Zhang, C. Du, L. Yang, D. Zhang, X. He, Q. Liu, T. Cui)
- 76 162460399 **Research on low power wireless automatic irrigation method**
Shirui Zhang, Beijing Research Center of Intelligent Equipment for Agriculture, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China (S. Zhang, H. Li, m. wang, j. li, W. Zheng)
- 77 162464824 **Multi-sensing Techniques for the Phenotype Analysis of Plant Resource**
Ghiseok Kim, Department of Biosystems & Biomaterials Science and Engineering, College of Agriculture & Life Sciences, Seoul National University, Seoul, Korea (the Republic of) (G. Kim)
- 78 162460029 **Evaluation of pork quality by hyperspectral fluorescence imaging**
Mengjia Ren, Zhejiang University, Hangzhou, China (M. Ren, D. Cui)
- 79 162460447 **Application of two-way MANOVA and ELM to study the characteristics of mandarin during storage by E-nose, E-tongue, and HS-SPME GC-MS**
Shanshan Qiu, Zhejiang University, Hangzhou, China (S. Qiu, J. Wang)
- 80 162468501 **The classification of bacterial species based on Fourier-transform near infrared spectroscopy**
Yao-Ze Feng, Huazhong Agricultural University, Wuhan, China (Y. Feng, X. Li, K. Mu, W. Chen, W. Yu)
- 81 162470603 **Rapid Detection of Sugar Content and pH in Blueberry Beverage Based on Projection Pursuit Regression**
Guifang Wu, Inner Mongolia Agricultural University, Hohhot, China (G. Wu, H. Ma, Z. Liu, X. De, M. Jin, H. Zhang)
- 82 162470608 **Identification of Varieties of Cheese Based on PCA-BP Using Vis/NIR Reflectance Spectroscopy**
Guifang Wu, Inner Mongolia Agricultural University, Hohhot, China (G. Wu, H. Ma)

TUESDAY, JULY 19

83	162459591	An anti-noise path tracking proportion differentiation (PD) controller for tractors Meina Zhang, Institute of Agricultural Facilities and Equipment, Nanjing, China (m. zhang, x. lin, X. Lv, w. yin)
84	162461452	Design and Construction of a Prototype Automatic Irrigation Control System John O. Ohu, University of Maiduguri, Nigeria, Maiduguri, Nigeria (J.O. Ohu, E. Mamman)
85	162460132	Optimization of small seeds cleaning equipment based on CFD - DEM gas-solid coupling Changbin He, China Agricultural University, Beijing, China (B. Ye, D. Wang, G. Wang, D. Meng, J. Gao, C. He)
86	162461824	Virtual Operator Modeling Approach for Combine Harvesting Brian Steward, Iowa state university of science and tech, Ames, IA (Y. Du, B. Steward, M. Dorneich)
87	162449020	Constructing a three-dimensional resource database of plants using situ-measured morphological data Weiliang Wen, Beijing Research Center for Information Technology in Agriculture, Beijing, China (W. Wen, X. Guo, Y. Wang, C. Zhao, W. Liao)
88	162461892	The Effect of Microorganism Inoculants on the Color Changing of the Wheat Straws After Incorporated into Soil Yutao Liu, Nanjing Agricultural University, Nanjing, CA, China (Y. Liu, S. Zhao, Q. Zhu, W. Ding)
89	162468541	Research on human model reconstruction and electric shock simulation based on difference image and finite element analysis Chun-lan Li, Xinjiang Agricultural University, Xinjiang, China (C. Li, L. Duan, S. Cui, L. Xia)
90	162489189	Time Series Study of Soybean Response based on Visible Spectroscopy Peter A. Larbi, Arkansas State University, Jonesborough, TN (P.A. Larbi, S. Green)
91	162461088	Determination of Trimethylamine (TMA) Using Enzyme-Immobilized Double Layer Sensor Shih-Fang Chen, National Taiwan University, Taipei, Taiwan (S. Chen, G. Dai)
92	162460437	Detection of Pseudomonas syringae pv.actinidiae on Kiwifruit Leaves Based on Infrared Thermal Imaging Haiyan Cen, Zhejiang University, Hangzhou, China (H. Cen, J. Yao)
93	162462704	Multitemporal imaging using an unmanned aerial vehicle for monitoring rice crop growth Sun-Wook Baek, Chonnam National University, Gwangju, Korea (the Republic of) (S. Baek, S. Yu, I. Lee, S. Kim, K. Lee)
94	162460027	Automatic Cooling Control in Dairy Farm of Cangzhou Region Based on THI Changbin He, China Agricultural University, Beijing, China (D. Meng, L. Liu, D. Wang, B. Ye, J. Gao, C. He)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 208

FIELD ROBOTICS AND CO-ROBOTICS FOR AGRICULTURE –

Sponsored by ITSC-318

Moderator: Weilin Wang, Monsanto, Chesterfield, MO

LOCATION: Coronado G

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460767	Development of an Autonomous Indoor Phenotyping Robot Dylan S. Shah, Iowa State University, Cedar Rapids, IA (D.S. Shah, L. Tang)

9:50AM	162462637	A Mobile GPS-guided Autonomous Insect Trap with Obstacle Avoidance Brad Bazemore, University of Georgia, Tifton, GA (B. Bazemore, G.C. Rains)
10:05AM	162460097	Dynamic Modeling of a Skid Steer Robot used for Scouting in Strawberry Orchards Pablo Menendez-Aponte, University Of Central Florida, Orlando, FL (P. Menendez-Aponte, Y. Xu)
10:20AM	162457331	Preliminary Approach for Real-time Mapping of Vineyards from an Autonomous Ground Robot Veronica Saiz-Rubio, Polytechnic University of Valencia, Valencia, Spain (V. Saiz-Rubio, F. Rovira-Más)
10:35AM		Break
10:50AM	162456431	Sonar-based aid for the execution of headland turns by a vineyard robot Francisco Rovira-Más, Polytechnic University of Valencia, Valencia, Spain (F. Rovira-Más, V. Saiz-Rubio, C. Millot)
11:05AM	162462000	Building a Fully Autonomous Planting System Using Commercial Components Philip G. Root, The Ohio State University, Columbus, OH (P.G. Root)
11:20AM	162461323	Design of a Fuzzy Controller For Autonomous Corn Row Navigation Tyler A. Troyer, University of Nebraska - Lincoln, Lincoln, NE (T.A. Troyer, S. Pitla, E. Nutter)

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

SESSION 209

COMPUTATIONAL FLUID DYNAMICS (CFD) APPLICATIONS IN AGRICULTURE –

Sponsored by ITSC-217, NRES-265, NRES-244, FS-302, FS-405

Moderator: Christopher Choir

LOCATION: Coronado M

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461495	Computation fluid dynamics modeling of conjugate heat and mass transport in dairy housing Jessica Drewry, University of Wisconsin , Madison, WI (J. Drewry, C. Choi, J.M. Powell)
9:50AM	162459964	CFD modeling of air flow distribution in rice bin storage system with different grain mass configuration Gbenga A. Olatunde, Department of Food Science & Division of Agriculture, University of Arkansas , Fayetteville, AR (G.A. Olatunde, G.G. Atungulu, S. Sadaka)
10:05AM	162461435	An evaluation of cow analogs and animal occupied zone as porous media assumptions used for modeling of large-scale dairy-housing. Mario R. Mondaca, University of Wisconsin - Madison, Madison, WI (M.R. Mondaca, C. Choi)
10:20AM	162461001	Mechanical properties and mechanical damage analysis of Alfalfa Seeds Changbin He, China Agriculture University, Beijing , China (Y. Yu, G. Wang, C. He, D. Wang)
10:35AM		Break
10:45AM	162459262	Computational fluid dynamics modeling of a bench-scale fluidized bed biomass gasifier Nourredine Abdoulmoumine, Biosystems Engineering and Soil Science, University of Tennessee, Knoxville, TN (O. Oyediji, N. Abdoulmoumine)
11:00AM	162459976	CFD Modeling of Ground Loblolly Pine Wood Fluidization Gbenga A. Olatunde, University of Arkansas, Fayetteville, AR (G.A. Olatunde, O. Fasina, T.P. McDonald, S. Adhikari, S. Duke)
11:30AM	162461516	Energy efficiency and air distribution of VFD-driven mechanical ventilation systems Ian Atkins, University of Wisconsin-Madison, Madison, WI (I. Atkins, M. Mondaca, C. Choi)

TUESDAY, JULY 19

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

SESSION 210

MACHINE VISION, SENSING AND CONTROL FOR SPECIALTY CROPS

– Sponsored by MS48

Moderator: Manoj Karkee

LOCATION: Fiesta 7

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162454193	Simulation of visual servo control for a sweet-pepper harvesting robot (using VREP, ViSP and ROS) Ramin Shamshiri, Wageningen University and Research Center, Wageningen, Netherlands (R. Shamshiri, J. Hemming, R. Barth)
9:50AM	162456004	Bruise damage evaluation of an apple harvest and infield presorting machine Anand K. Pothula, USDA Sugarbeet and Bean Research Unit, East Lansing, MI (A.K. Pothula, Z. Zhang, R. Lu)
10:05AM	162460289	An on-the-go ultrasonic plant height measurement system (UPHMS II) in the wild blueberry cropping system Young K. Chang, Dalhousie University, Truro, Canada (Y.K. Chang, Q. Zaman, A. Farooque, T.u. Rehman, T. Esau)
10:20AM	162460636	Evaluation of the sugar orange shake-and-catch system using wireless sensor Bingliang Ye, Zhejiang Sci-Tech University, Hangzhou, China (L. Lin, X. Du, J. Tong, L. He, B. Ye, C. Wu)
10:35AM	162461389	Design of Control System of Plasma Seed Processing Equipment Based on PLC Jinkui Feng, College of Engineering, China Agricultural University, Beijing, China (J. Feng, A. Pang, D. Wang, G. Wang)
10:50AM		Break
11:15AM	162461752	Evaluating effect of location on bitter pit incidence in 'Honeycrisp' apples using sensing techniques Sanaz Jarolmasjed, Washington State University, Pullman, WA (S. Jarolmasjed, C. Zúñiga, R.R. SINHA, C. Zhang, L. Kalcsits, L.R. Khot, S. Sankaran)
11:30AM	162461996	Characterization of equilibrium hull and kernel peanut moisture contents and peanut moisture prediction as a function of measured conductance Kendall R. Kirk, Clemson University, Blackville, SC (K.R. Kirk, B. Fogle)
11:45AM	162460989	Differences in air temperature, bark and xylem temperature in a Chardonnay vineyard Andres J. Pena-Q, Washington State University, Prosser, WA (A.J. Pena-Q, M. Salazar-G., G. Hoogenboom)

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

SESSION 211

INNOVATIONS IN PRECISION

AGRICULTURE - PART 2 – Sponsored by MS-54

Moderator: Reza Ehsani

LOCATION: Fiesta 8

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461530	Analysis of a Hydrostatic Torque Loading Test Platform for Transmissions Dillon Wirth, Iowa State University, Ames, IA (D. Wirth, B. Steward)
9:50AM	162461558	Distortion masking control algorithm for a pneumatic cylinder Brian Steward, Iowa State University, Ames, IA (G.F. Bravo Palacios, B. Steward, G.R. Luecke)

10:05AM	162460964	Spread pattern enhancement with inside vanes for a single disk fertilizer spreader Chelwoo Han, Gyeongsang National University, Jinju, Korea (the Republic of) (C. Han, H. Park, S. Lee, G. Kweon)
10:20AM	162455418	Seedmeter Performance Test Li Yang, China Agricultural University, Beijing, China (Y. Hao, L. Yang, D. Zhang, T. Cui, Z. Qu, Z. Liang, X. He, Y. Wang, Z. Shi)
10:35AM		Break
10:45AM	162461257	Life Cycle Assessment(LCA) for Evaluation of CO2 and Energy in Relation to Implement Type and Power Transfer Efficiency for Biomass Harvest Brittany A. Schroeder, The Ohio State University, Columbus, OH (B.A. Schroeder, A.A. Klopfenstein, S. Shearer)
11:00AM	162463254	Implementation and Performance of Automated Peanut Digging Depth on an Amadas 6-Row Digger Kendall R. Kirk, Clemson University, Clemson, AL (K.R. Kirk, B. Fogle, A. Warner)
11:15AM	162464134	Variation in Harvesting Losses in Relation to Fruit Yield, Plant Height and Slope: A Basis for Automation of Harvester Qamar Zaman, Dalhousie Univ, Truro, Canada (A. Farooque, Q. Zaman, Y.K. Chang, T. Esau, A. Schumann, M.W. Jameel)
11:30AM	162462946	Implementation and Evaluation of Using a Hydraulic Pressure Transducer to Determine Weight of Round Hay Bales Kendall R. Kirk, Clemson University, Blackville, SC (H.G. Ramsey, K.R. Kirk, G.S. Sell, J. Andrae, Y.J. Han)
11:45AM	162461050	Software for Grain Yield Monitoring System Suitable to Korean Full-feed Combines User Console Kyu-Ho Lee, Dept. of Biosystems Machinery Engineering, Chungnam National University, Daejeon, Korea (the Republic of) (K. Lee, S. Chung, J. Lee, S. Kim)

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

SESSION 212

MACHINERY DATA & LOGISTICS –

Sponsored by MS-49, MS-54

Moderator: Santosh Pitla

LOCATION: Fiesta 9

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162462460	Tracking Grain Trucks Using a Fleet Management System Aaron P. Turner, University of Kentucky, Lexington, KY (A.P. Turner, M.D. Montross, J. Dvorak, M.P. Sama)
9:50AM	162462681	Data Recording Methods and Time-Motion Analysis of the Forage Harvest Process Joshua Harmon, University of Wisconsin - Madison, Madison, WI (J. Harmon)
10:05AM	162461965	Evaluating Potential Fuel Savings from Optimized Grain Cart Path Planning John T. Evans, University of Nebraska, Lincoln, NE (J.T. Evans, J.D. Luck, S. Pitla)
10:35AM		Break
10:45AM	162462646	Tractor Load State Determination Using Controller Area Network (CAN) Data Santosh Pitla, University of Nebraska-Lincoln, Lincoln, Nebraska, NE (S. Pitla, J.D. Luck, J. Werner, S. Shearer)
11:00AM	162461746	The Performance of Farm Tractors as reported by CAN-Bus Messages Firas S. Al Aani, Iowa State University, Ames, IA (F.S. Al Aani, M. Darr, B.R. Covington, L.J. Powell)
11:15AM	162461586	Development of an Agricultural Sprayer Monitoring System for Improved Application Reporting Shane H. Forney, University of Nebraska - Lincoln, Lincoln, NE (S.H. Forney)

TUESDAY, JULY 19

11:30AM 162460672 Status of Agricultural Machinery Manufacturing in Bangladesh
Md. Monjurul Alam, Bangladesh Agricultural University, Mymensingh, Bangladesh (M. Alam, I. Khan, C.K. Saha, A. Rahman)

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

SESSION 213

MARVIN STONE MEMORIAL SESSION ON AGRICULTURAL ELECTRONICS - INVITED – Sponsored

by MS, ITSC

Moderator: Randy Taylor, Oklahoma State University, Stillwater, OK

LOCATION: Fiesta 6

This session will honor the memory of Dr. Marvin Stone, an ASABE Fellow and former ASABE Board Member with a long and distinguished career in the field of agricultural electronics. Internationally recognized, Dr. Stone was the recipient of the ASABE McCormick-Case Gold Medal, the Farrall Young Educator Award, and the Rosentreter Standards Award. After a brief recap of Dr. Stone's contributions in research, teaching, and service, the session will include timely information on (a) communication networks on agricultural and off-road equipment; (b) real-time sensors in crop production; and (c) visions of future advances in sensors and controls in agriculture.

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162525852	Marvin Stone: A Career of Accomplishment and Service Ronald Elliott, Oklahoma State University, Stillwater, OK (R. Elliott)
9:55AM		Marvin Stone: Colleague and Mentor (A panel) John Solie, retired, Oklahoma State University Carol Jones, Oklahoma State University Joe Dvorak, University of Kentucky
10:15AM	162525856	Status and Future of Communications Networking on Agricultural Machinery Peter van der Vlugt, Kverneland Group Nieuw Vennep BV, Nieuw-Vennep, Netherlands (P. van der Vlugt)
10:45AM		Break
10:55AM		Status and Future of Real-Time Sensing in Crop Production
11:25AM		Joshua McGrath, University of Kentucky Visions of Future Advances - (A panel) Panel Moderator: Terry Howell, Jr., McKee Foods and ASABE Past President John Reid, John Deere Jeyam Subbiah, University of Nebraska-Lincoln Steven Thomson, USDA National Institute of Food and Agriculture

Tuesday, July 19 - 9:30AM - 11:30AM

SESSION 214

CROP PROTECTION - POSTERS –

Sponsored by MS-23-6

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
95	162461731	Pre planter assessments to improve field performance and accuracy Firas S. Al Aani, Iowa State University, Ames, IA (F.S. Al Aani, K. Rosentrater, M. Ma)
96	162452704	A Versatile Strategy to Upgrade Conventional Sprayers with Intelligent Spray Control Functions Yegang Li, USDA/ARS ATRU, Wooster, OH, United States (Y. Li, H. Zhu)

97 162460878 Design and experiment of greenhouse self-propelled air-assisted sprayer
Hua C. Gao, China Agriculture University, Beijing, China (H.C. Gao)

98 162460645 Design and experiment of greenhouse self-propelled air-assisted sprayer
Hua C. Gao, China Agriculture University, Beijing, China (H.C. Gao)

99 162462763 Simulation of spray droplets impacting on leaves: influence of surface tension and leaf character on impact outcomes
Shuangshuang Wang, College of Engineering, Huazhong Agricultural University, Wuhan, China (S. Wang, X. He, G.J. Dorr)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 215

GROUNDWATER MODELING AND MANAGEMENT – Sponsored by NRES-21

Moderator: Jonathan Aquilar

LOCATION: Coronado N

Time	Paper #	Title/Authors
9:30AM		Introduction -
9:35AM		TBA Mark Luchte
10:05AM	162461797	Baseflow Analysis of the Rush Springs Aquifer in West-Central Oklahoma Qualla J. Ketchum, Oklahoma State University, Shawnee, OK (Q.J. Ketchum, G. Fox, C. Neel)
10:20AM	162460976	Development of Pre-Processor Module for SWAT Alpha Factor Calculation in Each Sub-Watershed Jeongho Han, Kangwon National University, Chuncheon-si, Korea (the Republic of) (J. Han, J. Kim, S. Kim, W. Jang, D. Kum, K. Lim)
10:35AM	162460769	SWAP and Hydrus 2D simulations of solute transport in a tropical soil Jarbas H. Miranda, ESALQ/USP, Piracicaba, Brazil (I.M. Ponciano, J.H. Miranda, K.L. Grecco, C.A. Urbina, R.A. Cooke, M.T. van Genuchten)
10:50AM		Break
11:00AM	162458020	Hydroclimatic vs Consumptive Water-Use Controls for Water Table Predictions using Artificial Neural Networks and Support Vector Machine Models Alessandro Amaranto, University of Nebraska, Lincoln, NE (A. Amaranto, G.E. Meyer, D. Solomatine, G.C. Perez, F. Muñoz Arriola)
11:15AM	162461250	Effect of rainfall on groundwater table elevations in agricultural areas of Southern Florida Meijing Zhang, University of Florida, Homestead, FL (M. Zhang, H. Singh, K. Migliaccio, I. Kisekka)
11:30AM	162462109	Link snowmelt runoff model with a RiverWare model to simulate conjunctive use of surface water and groundwater in Urumqi River Basin, China Zhuping Sheng, Texas A&M AgriLife Research Center at El Paso, El Paso, TX (S. Abudu, Z. Sheng, C. Cui, A. Michelsen, S. Muaitaer)
11:45AM	162460116	Effects of dairy cropping systems on water quality in a karst watershed in northeastern USA M G Mostofa Amin, Penn State University, University Park, PA (M. Amin, H.D. Karsten, T.L. Veith, P.J. Kleinman, D. Beegle)
12:00PM	162462745	Behavior of Groundwater Levels in Texcoco Aquifer (1507) when they are Lowered by Excessive Pumping from 1968 through 2014 Mauricio G. Carrillo, Chapingo Autonomous University, Texcoco, Mexico (M.G. Carrillo, Y. Gomez, S. Valle, J. Prado)

TUESDAY, JULY 19

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

SESSION 216

QUANTITATIVELY INCORPORATING SOCIAL COMPONENTS INTO ANALYSIS OF AGRICULTURAL AND ECOLOGICAL SYSTEMS – Sponsored by NRES-21
Moderator: Rachata Muneepeerakul
LOCATION: Fiesta 10

Time	Paper #	Title/Authors
9:30AM		Introduction -
9:35AM	162456605	Identification of the socioecological drivers for forest degradation in response to the construction of the Inter-Oceanic Highway in the Amazon region Rafael Munoz-Carpena, University of Florida, Gainesville, FL (R. Munoz-Carpena, D.D. Silva, G.A. Kiker, S. Perz, N. Selaya-Garvizu)
9:50AM	162463083	Vegetation indexes to monitoring pasture in subarid conditions Ana M. Tarquis, Universidad Politécnica de Madrid, Madrid, Spain (A.M. Tarquis)
10:05AM	162462485	From Channelization to Restoration: Socio-Hydro-logic Modeling with Changing Community Preferences in the Kissimmee River Basin, Florida Xi Chen, University of Wisconsin-Madison, Madison, FL (X. Chen, D. Wang, F. Tian, M. Sivapalan)
10:20AM	162458123	Effect of infrastructure design on commons dilemmas in social-ecological system dynamics Rachata Muneepeerakul, Univ of Florida, Gainesville, FL (D. Yu, R. Muneepeerakul)
10:35AM		Break
10:45AM	162462047	Spatially Targeted Social Interventions to Improve BMP Adoption in Maryland Watersheds Hubert Montas, University of Maryland, College Park, MD (J. Renkenberger, K. Maeda, Y. Wang, H. Montas, P. Leisnham, V. Chanse, A. Shirmohammadi, A. Sadeghi, K. Brubaker, A. Rockler, T. Hutson, D. Lansing)
11:00AM	162482788	Socio-hydrological modeling for a wastewater reused watershed in South Korea Hanseok Jeong, University of Illinois, Urbana, IL (H. Jeong, R. Bhattarai, J. Adamowski)
11:15AM	162470611	Transitions between productive and degraded states in coupled social-ecological agro-ecosystem models Anthony J. Parolari, Duke University, Durham, NC (A.J. Parolari)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 217

ARE BMPS MAKING A DIFFERENCE IN WATER QUALITY? – Sponsored by NRES-22, NRES-224, NRES-26
Moderators: Angelica Engel, Immokalee, FL
Sanjay Shukla, UF/IFAS, Immokalee, FL
LOCATION: Coronado P

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461744	Reduction of Nitrate and Orthophosphate in Shallow Groundwater with Perennial Filter Strips Bethany Brittenham, Iowa State University, Ames, IA (B. Brittenham, C. Witte, M. Helmers)
9:50AM	162461108	Impact of BMP Implementation to control Nutrient Transport in Embarras River Watershed in Illinois Vaskar Dahal, University of Illinois at Urbana-Champaign, Urbana, IL (V. Dahal, R. Bhattarai)
10:05AM	162383800	Sediment and Total Phosphorous Losses and Their Contributors in Rock River Watershed Yongping Yuan, USEPA-Office of Research and Development, Research Triangle Park, NC (Y. Yuan)

10:20AM	162458242	Evaluating urban best management practices as a tool for the provision of hydrologic ecosystem services Kelsey R. McDonough, Kansas State University, Manhattan, KS (K.R. McDonough, T. Moore, S. Hutchinson)
10:35AM		Break
10:45AM	162456929	Development of a Decision-Making Framework for BMP Design to Reduce Loads During “Hot Moments” Nicole Opalinski, Penn State, Greensburg, PA (N. Opalinski, D. Schultz, H.E. Gall, M. Royer)
11:00AM	162461451	Urban stormwater best management practices affect stream water quality Colin Bell, Purdue University, Lafayette, IN (C. Bell, S.K. McMillan, S.D. Clinton, A.J. Jefferson)
11:15AM	162439695	Cropland Filter Strip Removal of Cattle Manure Constituents in Runoff John E. Gilley, USDA-ARS, Lincoln, NE (J.E. Gilley)
11:30AM	162460845	Water Quality Dynamics in Agricultural Ponds in Mississippi: In-situ Measured Water Quality Parameters Juan D. Pérez-Gutiérrez, Mississippi State University, Mississippi State, MS (J.D. Pérez-Gutiérrez, J.O. Paz, M.M. Tagert, Y. Ouyang)

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

SESSION 218

CROP MODELING AND DECISION SUPPORT FOR OPTIMIZING USE OF LIMITED WATER - PART 1 – Sponsored by NRES-24, NRES-21, NRES-28, ITSC-217
Moderator: Isaya Kisekka
LOCATION: Coronado Q

Time	Paper #	Title/Authors
9:30AM		Introduction
10:00AM	162455440	Optimal and sub-optimal irrigation scheduling using the AquaCrop model Raphael Linker, Technion - Israel Institute of Technology, Haifa, Israel (R. Linker, I. ioslovich, G. Sylaios, F. Plauborg, A. Battilani)
10:25AM	162460955	Use of system models for limited water management: Theoretical development and practical application Liwang Ma, usda, Fort Collins, CO (L. Ma, L. Ahuja, Q. Fang, I. Kisekka)
10:50AM		Break
10:55AM	162460939	Optimizing growth stage-based irrigation schedules for maize production under various water limits Quanxiao Fang, Qingdao Agricultural University, Qingdao, China (Q. Fang, L. Ma, L. Ahuja)
11:20AM	162460710	Development of water management strategies for irrigated cotton under an extremely dry condition using RZWQM2 in Xinjiang, China Zhiming Qi, McGill University, Sainte-Anne-de-Bellevue, Canada (C. Liu, Z. Qi, D. Gui, H. Li, F. Zeng)
11:35AM	162463043	Crop Model Application to Soybean Irrigation Management in a Humid Region Gary Feng, USDA-ARS, Genetics and Sustainable Agriculture Research Unit, Mississippi State, MS (G. Feng, Y. Ouyang)

TUESDAY, JULY 19

Tuesday, July 19 - 9:30AM - 12:30PM

SESSION 219

BIOCHAR TECHNOLOGY FOR SUSTAINABLE AGRICULTURE

Sponsored by NRES-26, NRES-21

Moderator: Bin Gao

LOCATION: Coronado R

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162459867	Biochar: is it the fix all we have been waiting for? Zachary M. Easton, Virginia Tech, Blacksburg, VA (Z.M. Easton)
9:53AM	162463262	Interactions of Carbonaceous Materials with CO₂ and Water for Repairing Global Carbon Cycle Wei-Yin Chen, University of Mississippi, University, MS (W. Chen, N.O. Egiebor, D. Mattern)
10:11AM	162460303	Sorption and Bioavailability of Pharmaceuticals on Biochars from Water Hui Li, Michigan State University, East Lansing, MI (T. Pegoraro, Y. Zhang, W. Zhang, S. Boyd, B. Teppen, H. Li)
10:29AM	162431541	Roles of surface functional groups and mineral components in the environmental behaviors of pyrogenic carbonaceous materials Minori Uchimiya, USDA, New Orleans, LA (M. Uchimiya)
10:47AM		Break
10:57AM	162457782	Composites of Polypropylene Reinforced with Ultra-fine Bamboo-Char: Morphology, Mechanical and Thermal Properties Wenchao Yao, Zhejiang University, Hangzhou, China (W. Yao, S. Qian, K. Sheng, H. Zhang)
11:12AM	162461860	Chemically activated hydrochars from hickory and peanut hull: Preparation, characterization, and sorption of contaminants June Fang, University of Florida, Gainesville, FL (J. Fang, B. Gao)
11:27AM	162456855	Effect of plantain peel biochar in reducing heavy metal contamination in wastewater irrigated potato (Solanum tuberosum L.) Christopher Nzediegwu, McGill University, Montreal, Canada (C. Nzediegwu, S. Prasher, E. Elsayed, J. Dhi-man)
11:42AM	162461573	Carbon dioxide capture using biochar supported MgO nanoparticles Anne Elise Creamer, University of Florida, Gainesville, FL (A. Creamer, B. Gao)
11:57AM	162461475	Influence of biochar on soil hydraulic properties Ahmed S. Ahmed, McGill University, Ste-Anne-de-Belle-vue, Canada (A.S. Ahmed, V. Raghavan)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 220

ANAEROBIC DIGESTION – Sponsored

by NRES-27, PRS-707

Moderator: Rebecca Larson, Madison, WI

LOCATION: Coronado S

Time	Paper #	Title/Authors
9:30AM		Introduction -
9:35AM	162431520	Impact of surfactant addition on anaerobic bioreactor landfill performance Karthik R. Manchala, Virginia Tech, Manassas, VA (K.R. Manchala, J.T. Novak, Z. Wang)
9:50AM	162460854	Anaerobic Microbial Inoculum Preservation for a Digestion 'Starter' Kit Andrea Yarberry, University of Maryland, Olney, MD (A. Yarberry, S. Lansing, R. Diltz, H. Luckarift, S. Yarwood)

10:05AM	162462839	Recirculating digestate as inoculum for semi-continuous solid-state anaerobic digestion: performance and microbial communities Long Lin, The Ohio State University, Wooster, OH (L. Lin, Y. Li)
10:20AM	162458161	Polymer assisted anaerobic sequencing batch digestion of dairy manure Ifitikhar Zeb, Washington State University, Pullman, WA (I. Zeb, P. Ndegwa)
10:35AM	162461052	Hydrogen Sulfide Mitigation via Dosing of Metal Ions in Anaerobic Digestion without Affecting Methane Production Hongjian Lin, University of Minnesota, St Paul, MN (H. Lin, X. Zhang, C. Zamalloa, J. Gan, a. king, B. Hu)
10:50AM		Break
11:00AM	162457337	Converting Anaerobic Digester from Mesophilic to Thermophilic Conditions for Co-Digestion of Swine Wastewater and Corn Stover Zhimin Liu, North Carolina State University, Raleigh, NC (Z. Liu, J. Cheng)
11:15AM	162461694	Laboratory Co-digestion of Waste Kitchen Grease and Swine Manure with Veterinary Antibiotics Teng Lim, University of Missouri, Columbia, MO (T. Lim, R.G. Nogueira, C. Lin, J.M. Zulovich)
11:30AM	162462400	Using Life Cycle Assessment (LCA) to Quantify the Sustainability of US Plug-Flow and Chinese Fixed-Dome Anaerobic Digesters Freddy Witorsa, University of Maryland, College Park, MD (F. Witorsa, S. Lansing, A. Hassanein, Y. Ge, L. Qiu)
11:45AM	162462925	Computational Fluid Dynamics Study of Mixing in Bioreactors Binxin Wu, Cornell University, Ithaca, NY (B. Wu)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 221

STREAM PROCESSES AND RESTORATION

– Sponsored by NRES-28

Moderator: Sara McMillan

LOCATION: Coronado T

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162547282	Nitrogen and Phosphorus Dynamics in a Two-Stage Agricultural Ditch Jane Frankenberger, Purdue University, West Lafayette, IN (J. Frankenberger)
9:50AM	162462930	The effects of restoration on reach scale nutrient uptake and nutrient transformations in agricultural headwater streams Sara K. McMillan, Purdue University, West Lafayette, IN (S.K. McMillan, G. Downs, M. Welsh, P. Vidon)
10:05AM	162461734	Innovative technology to characterize the dynamics of nutrient export in an agricultural coastal plain stream Chiao-Wen Lin, North Carolina State University, Raleigh, NC (C. Lin, F. Birgand, B.M. Maxwell)
10:20AM		Break
10:30AM	162461742	Evaluating in-stream nitrate uptake in an in situ mesocosm experiment Bryan M. Maxwell, NCSU, Raleigh, NC (B.M. Maxwell, F. Birgand)
10:45AM	162377956	Thermal Regimes and Fish Assemblages in a Restored Oklahoma Stream Ellen L. Woytowicz, University of Maryland, Baltimore County, Baltimore, MD (E.L. Woytowicz, S. Brewer, G. Fox)
11:00AM	162455588	Phosphorus in Streambanks: A Net Source of Phosphorus to Streams and Rivers Garey Fox, Oklahoma State University, Stillwater, OK (G. Fox, R. Purvis, C. Penn)

INSERT 2 page spread

INSERT 2 page spread

TUESDAY, JULY 19

11:15AM 162458194 **Simulating reach-scale sediment reduction from stream stabilization using CONCEPTS**
Holly K. Enlow, Oklahoma State University, Stillwater, OK
(H.K. Enlow, G. Fox, K.R. Klavon)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 222

MEASUREMENT AND MITIGATION OF AIR POLLUTANTS FROM LIVESTOCK AND POULTRY HOUSING

– Sponsored by PAFS-50

Moderator: Kenneth Casey, Texas A&M AgriLife Research, Amarillo, TX

LOCATION: Fiesta 3

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460503	Commissioning of a Segmented Wand For Evaluating Airflow Performance of Fans in Livestock and Poultry Housing Katlyn R. DeVoe, Iowa State University, Ames, IA (K.R. DeVoe, S.J. Hoff, Y. Gao, B.C. Ramirez)
9:50AM	162460212	Assessing Ventilation Using Intelligent Portable Monitoring Units (iPMUs) in a Layer Barn Weichao Zheng, University of Illinois, Urbana, IL, United States (W. Zheng, R.S. Gates, Y. Xiong, A. Green, K. Koelkebeck)
10:05AM	162461256	Development of a methodology for using an annular denuder system in environments with high levels of ammonia Jennifer Spencer, University of Guelph, Tara, Canada (J. Spencer, B. Van Heyst)
10:20AM	162462626	Effects of Ventilation Systems on Ammonia Concentration Distributions in Manure-Belt Egg Layer Houses Xinjie Tong, Ohio State University, Grove City, OH (X. Tong, S. Hong, L. Zhao, A. Heber, Y. Li)
10:35AM	162461252	Profile of ammonia and water vapour in an Irish broiler production house Thomas P. Curran, University College Dublin, Dublin, Ireland (D. Kelleghan, E. Hayes, T.P. Curran)
10:50AM		Break
11:00AM	162461499	Diurnal odor and gas emissions from a commercial broiler barn under Canadian Prairies climate Dandan Huang, University of Saskatchewan, SASKATOON, Canada (D. Huang, H. Guo)
11:15AM	162461008	Using Poultry Litter-Derived Biochar as Litter Amendment to Control Ammonia Emissions Chen Zhang, University of Delaware, Newark, DE (C. Zhang, W.D. Alexis, H. Li, M. Guo)
11:30AM	162458013	Characterization of Nanoparticles Entrapped Alginate Beads for Controlling Gaseous Production from Swine Manure Shafiqur Rahman, North Dakota State University, Fargo, ND (D. Gautam, S. Rahman)
11:45AM	162460994	Using wet scrubber to reduce ammonia emission from broiler house Chen Zhang, University of Delaware, Newark, DE (C. Zhang, H. Li, P. Moore, M. Buser, C.J. Hapeman, P. Patterson, G. Martin)

Tuesday, July 19 - 9:30AM - 12:15PM

SESSION 223

ANIMAL HOUSING AND ENVIRONMENTAL CONTROL

– Sponsored by PAFS-40

Moderator: Tom Gettings, GSI Group Inc., Taylorville, IL

LOCATION: Fiesta 4

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162460523	Cooled Perch System Performance for Heat Stress Trials on Laying Hens: Year 2 Yijie Xiong, University of Illinois, Urbana, IL (Y. Xiong, W. Zheng, R.S. Gates, K. Oliveira Rocha, J. Hu, M. Makagon, P. Hester, H. Cheng)
9:50AM	162461445	Comparison of Three Ventilation Strategies for Holding Areas using Computational Fluid Dynamics Mario R. Mondaca, University of Wisconsin - Madison, Madison, WI (M.R. Mondaca, N.B. Cook, C. Choi)
10:05AM	162460101	Verification and Recommendations for Cooling Fans in Freestall Dairy Barns Binxin Wu, Jiangsu University, Zhenjiang, China (C. Gooch, B. Wu, P. Wright)
10:20AM	162461688	Utilization of Cow Cooling Solutions in Real-World Dairies Jonathan W. Olsen, Big Ass Fans, Lexington, KY (J.W. Olsen)
10:35AM	162462956	Economic Comparison of Different Cooling Systems for Dairy Cattle Kristen Perano, Cornell University, Ithaca, NY (K. Perano, K.G. Gebremedhin)
10:50AM		Break
11:00AM	162462918	CFD Simulations of Thermal Environmental Conditions of Commercial Poultry Layer Houses with Typical Ventilation Systems Xinjie Tong, Ohio State University, Columbus, OH (X. Tong, S. Hong, L. Zhao, A. Heber)
11:15AM	162456072	Computational Fluid Dynamics Studying a Negative Ventilation System on a Swine Barn Daniella J. Moura, State University of Campinas, Campinas, Brazil (D.J. Moura, V. Souza Jr, J. Nunhez, L.A. Sabino)
11:15AM	162461776	Development of a whole-building infiltration test system for animal housing Joseph L. Purswell, USDA-ARS, Mississippi State, MS (J.L. Purswell, J.W. Lowe, G.D. Chesser)
11:30AM	162460311	Evaluating effect of evaporative cooling and ventilation systems on indoor temperature for modern swine barns Yanxi Lu, University of Illinois at Urbana-Champaign, Urbana, IL (Y. Lu, M. Hayes, R.S. Gates, X. Wang)
11:45AM	162454577	Thermal Environment Performance and Uniformity Assessment for a Novel Swine Breeding and Gestation Facility Brett C. Ramirez, Iowa State University, Ames, IA (B.C. Ramirez, S.J. Hoff, J.D. Harmon, J.P. Stinn)

TUESDAY, JULY 19

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

SESSION 224

ANAEROBIC DIGESTION OF FOOD WASTES AND ORGANIC RESIDUES

– Sponsored by PRS-707

Moderator: Wei Liao

LOCATION: Yucatan 1

Time	Paper #	Title/Authors
9:30AM		Introduction
9:35AM	162461749	Anaerobic Digestion Projects in California For Coverting Food Waste into Energy and Biofertilizer Ruihong Zhang, University of California, Davis, Davis, CA (R. Zhang)
9:50AM	162461342	Comparison of anaerobic co-digestion of food waste and paper in solid and liquid media Fuqing Xu, The Ohio State University, Wooster, OH (F. Xu, Y. Li, Y. Jiang)
10:05AM	162454889	Development of a novel anaerobic digestion system with stable biogas production and no liquid waste generation Liangcheng Yang, Illinois State University, Normal, IL (L. Yang)
10:20AM	162461814	Anaerobic digestion of dairy manure in a continue stirred tank reactor with a microbial electrolysis cell Carlos Zamalloa, University of Minnesota, St. Paul, MN (C. Zamalloa, H. Lin, X. Zhang, J. Gan, B. Hu)
10:35AM		Break
10:45AM	162460334	Non-invasive Early Detection of Phytophthora blight and Fruit Rot on Pepper Plants and Cucurbits by Analysis of Volatile Organic Compounds Emission Xiaojuan Song, Georgia Tech Research Institute, Atlanta, GA (X. Song, P. Ji, G.C. Rains, O. Kemenova, G. McMurray)
11:00AM	162460376	Identifying effective In-vessel composting system for converting organic waste into pathogen free soil amendment. Wenlong Cao, UC Davis, Davis, CA (W. Cao, V.K. Vaddella, S. Biswas, P. Pandey, C. Chiu)
11:15AM	162462903	Metabolic Engineering of Oleaginous Yeast Yarrowia lipolytica for Production of Renewable Oleochemicals Rishikesh Ghogare, Washington State University, Pullman, WA (R. Ghogare, x. xiong, G. Wang, S. Chen)

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

SESSION 225

DISTINGUISHED ADVANCES IN PROCESSING SYSTEMS - INVITED SPEAKERS

– Sponsored by PRS

Moderator: Christopher Butts

LOCATION: Yucatan 2

9:30AM	Introduction This session is sponsored by the Executive/Steering Committee of the Processing Systems technical community. Presenters for this invited session will be recent recipients of ASABE Awards and Honors whose primary technical interest and expertise is in the Processing Systems Technical Community. Award winners presenting include the recipients of the International Food Engineering Award, the Kishida International Award, the Sukup Global Food Security Award and the PEI Professional Engineer of the Year Award. Come join us as we learn of the work of these esteemed members of the Processing Systems Technical Community.
--------	---

TECHNICAL PROGRAM

Tuesday, July 19

2:30PM - 5:15PM

The purpose of these sessions is the open exchange of ideas, therefore, remarks made by a participant or member of the audience cannot be quoted or attributed to either the individual or the individuals' company. No recording of the participants' remarks or discussion is permitted. Pictures of any material shown here are not permitted.

In respect for the presenters and the people attending the conference, ASABE would request that anyone having a pager, cell phone, or other electronic device please turn them off. If your situation does not allow for these devices to be turned off, please reseat yourself close to an exit such that everyone can benefit from the information presented here without disruption.

Tuesday, July 19 - 2:30PM - 4:30PM

SESSION 226

WOODY BIOMASS PROCESSING AND CONVERSION

– Sponsored by

ASE-12

Moderator: Emily Carter

LOCATION: Fiesta 7

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162462178	Catalytic separation and depolymerization of lignin for effective production of aromatic hydrocarbons Moriko Qian, Washington State University, Richland, WA (M. Qian, X. Zhang, H. Lei, L. Zhu, J. Chan, X. Zhu, Y. Liu, G. Yadavalli, D. Yan)
2:50PM	162461961	Effects of inoculated CFU ratios on the physical characteristics of BC when co-culturing G. hansenii ATCC 23769 and E. coli ATCC 700728 Ke Liu, Penn State, University Park, PA (K. Liu, J.M. Catchmark)
3:05PM	162461414	Surface Functionalization of Crystalline Nanocellulose by a Food-grade Surfactant Kai Chi, The Pennsylvania State University, University Park, PA (K. Chi, J.M. Catchmark)
3:20PM		Break
3:30PM	162455547	Pathway Comparison of Comminution Energy Consumption from Wet Wood Chips to Dry Sub-mm Particle David N. Lanning, Forest Concepts, Auburn, WA (D.N. Lanning, C. Lanning, J.H. Dooley, A. Catron, J. Slosson)
3:45PM	162461125	Comparison of solubilization efficiencies of perennial grasses and agricultural biomass residues in subcritical water for high-yielding hydrogen gas production Sibel Irmak, University of Nebraska-Lincoln, Lincoln, NE (S. Irmak, B. Meryemoglu)

TUESDAY, JULY 19

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 227

RENEWABLE ENERGY RESOURCES AND TECHNOLOGIES - PART 2 –

Sponsored by ES-210
Moderator: Jaime Thissen

LOCATION: Coronado C

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162462683	Bio treatment of textile wastewater and electricity generation in microbial fuel cells Ann D. Christy, The Ohio State University, Columbus, OH (B. Saba, A.D. Christy)
2:50PM	162461872	Fluidized Bed Gasification System of Cotton Gin Trash Walter Oosthuizen, Texas A&M University, College Station, TX (W. Oosthuizen)
3:05PM	162460836	Burn Cycle Particle Emissions from a Wood-Burning Stove Joshua Peppers, UC Davis, Woodland, CA (J. Peppers, S. Schick, B. Jenkins)
3:20PM	162460180	Efficiency and Design Analysis of a Solar Thermal Powered Flat Plate Dryer Jonathan J. Ferry, University of California, Merced, Merced, CA (J.J. Ferry, F.S. Alleyne, R.R. Milczarek, R. Winston, D. Olson)
3:35PM	162455790	Microwave Plasma Assisted Splitting of Water to Produce Hydrogen - A Simulation Study Satyanarayan Dev, Florida A&M University, Tallahassee, FL (S. Dev, V. Raghavan)
3:50PM		Break
4:00PM	162455582	Scum to biodiesel conversion: process development and economic study Min Addy, University of Minnesota, St. Paul, MN (M. Addy, E. Anderson, H. Ma, P. Chen, R. Ruan)
4:15PM	162440619	Pilot-scale fluidized bed gasifier coupled with an engine power generator Hyungseok Nam, Texas A&M University, College Station, TX (H. Nam, A.L. Maglinao, S.C. Capareda)
4:30PM	162463948	Electrifying Kenya Through Renewable and Conventional Sources Lawrence O. Gumbo, Technical University of Kenya, Nairobi, Kenya (L.O. Gumbo)
4:45PM	162461296	Performance analysis of a top lit updraft (TLUD) gasifier stove, operated with respect to fuel characteristics of multiple types of biomass feedstock Yuguang Zhou, China Agricultural University, Beijing, China (Y. Zhou)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 228

ENERGY SYSTEMS POSTER SESSION – Sponsored by ES

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
1	162462244	Real time estimation of insoluble solid concentration in biomass slurries using mixing torque measurements. Ganti S. Murthy, Oregon State University, Corvallis, OR (H. Kadhum, G.S. Murthy)
2	162461612	Addressing fire risk in biomass handling and storage Erin Webb, Oak Ridge National Laboratory, Oak Ridge, TN (E. Webb)
3	162461648	Life Cycle Assessment of a Biomass-to-Liquid Fuel Refinery based on Gasification and Fisher-Tropsch Synthesis Lijun Wang, North Carolina Agricultural and Technical State University, Greensboro, NC (L. Wang, M. Rafati, A. Shahbazi)

4	162461255	Generalized categorical regression model for size reduction of multiple biomass and grinders Igathinathane Cannayen, North Dakota State University, Fargo, ND (M. Yu, I. Cannayen)
5	162460988	OpTiGaS Model Part 1: Development of a Framework for Digester Methane Sites to Deliver OnPeak Electricity to the Spot Market Stefan Minott, GRTechSol.com, Ithaca, NY (S. Minott, N.R. Scott)
6	162433998	Activated Hydrochars from Fruit Dehydration Wastes- Adsorption and Electrochemical Applications Kaushlendra Singh, West Virginia University, Morgantown, WV (K. Singh, L. Sivanandan)
7	162463312	Early Analysis of Electrocatalytic Hydrogenation of Unfractionated Bio-Oil Using Ruthenium as Catalyst Rachael Sak, Environmental Protection Agency, Ann Arbor, MI (R. Sak, C. Saffron, A. Juergens, M. Brusstar, B. Larson)
8	162461951	Effects of fertilization rate and inter cropping on the chemical compositions of energy crops from South-eastern US Yang Yue, University of Georgia, Athens, GA (Y. Yue, S. Mani, H. Singh, B. Singh)
9	162461307	Drying Characteristics of Wood and Wood Polymers Kaushlendra Singh, West Virginia University, Morgantown, WV (K. Singh, F.U. Akharume, L. Sivanandan)
10	162460166	Enzymatic hydrolysis of extruded and alkali extruded sweet sorghum bagasse Danielle Bellmer, Oklahoma State University, Stillwater, OK (N. Pessani, D. Bellmer)
11	162459842	Biochars for soil amendment applications - A critical review Ajay Kumar, Oklahoma State University, Stillwater, OK (K. Qian, A. Kumar, h. zhang)
12	162456273	Ethanol fermentation by Saccharomyces cerevisiae from potato waste hydrolysate in biofilm reactor Ali Demirci, Pennsylvania State University, University Park, PA (G. Izmirlioglu, A. Demirci)
13	162456236	Ethanol production from carob extract by using Saccharomyces cerevisiae in biofilm reactor Ali Demirci, Pennsylvania State University, University Park, PA (M. Germec, I. Turhan, M. Karhan, A. Demirci)
14	162460696	Life Cycle Sustainability Assessment (LCSA) of Oxymethylene Ether as a diesel additive produced from Forest Biomass Nafisa Mahbub, University of Alberta, Edmonton, Canada (N. Mahbub, A.O. Oyedun, H. Zhang, A. Kumar, W. Poganietz)
15	162462688	Life cycle assessment of biomass densification during logistics for a biorefinery Ashish Manandhar, The Ohio State University, Wooster, OH (A. Manandhar, A. Shah)
16	162460484	Cradle to gate life cycle assessment of traditional adhesives used in wood sheet production Minliang Yang, Iowa State University, Ames, IA (M. Yang, K. Rosentrater)
17	162460880	Techno Economic Analysis of Bio-oil Production from Poplar Hardwood for Renewable Diesel in Western Canada Madhumita Patel, University of Alberta, Edmonton, Canada (M. Patel, A.O. Oyedun, A. Kumar)
18	162460186	Technoeconomic assessment of two-step process for upgrading and utilizing used ties Nourredine Abdoulmoumine, Biosystems Engineering and Soil Science, University of Tennessee, Knoxville, TN (N. Abdoulmoumine, N. Labbé, P. Kim)
19	162460043	Environmental impact analysis (EIA) of a 40 and 120 million gallon corn-based ethanol plant model Weitao Zhang, Iowa State University, Ames, IA (W. Zhang, K. Rosentrater)

20	162461006	Model analysis of biomass pyrolysis and a new model of pyrolysis Changbin He, China Agriculture University, Beijing, China (Y. Yu, G. Wang, C. He, D. Wang)	35	162462855	Comparison of liquid hot water and alkaline pretreatments of giant reed for improved enzymatic digestibility and methane yield Danping Jiang, The Ohio State University, Wooster, OH, United States (D. Jiang, X. Ge, Y. Li)
21	162457488	Development of a Novel Strategy for Estimation of Endogenous Decay and Yield Coefficients in Batch Biogas Production of Anaerobic Co-digestion of Poultry Litter and Wheat Straw Using Numerical Integration Jiacheng Shen, University of Arkansas, Fayetteville, AR (J. Shen, J. Zhu)	36	162468286	Experimental Research on Anaerobic Fermentation Biogas Production from Platanus Orientalis Leaves Shengyong Liu, Henan Agricultural University, Zhengzhou, China (S. Liu, H. Tao, B. Xu, G. Xiang, Y. Wang)
22	162460548	Biogas Production in a Biofilm Reactor of a Two-phase Anaerobic Digestion System from Hydrolysate Derived from Poultry Litter at Different Organic Loadings and Retention Times Jiacheng Shen, University of Arkansas, Fayetteville, AR (J. Shen, J. Zhu)	37	162468297	The growth properties and hydrogen production process kinetics of HAU-M1 mixed photosynthetic bacteria Yanyan Jing, Henan Agricultural University, Zhengzhou, China (Y. Jing, L. Huang, Y. Wang, C. He, Q. Zhang)
23	162458093	Kinetics of Biogas Production in Batch Anaerobic Co-digestion of Poultry Litter and Wheat Straw Mixed with Municipal Wastewater Jiacheng Shen, University of Arkansas, Fayetteville, AR (J. Shen, J. Zhu)	38	162460699	Simulation of Biomass Compression in a Cylindrical Channel with Cone Angle Based on EDEM Changbin He, China Agriculture University, Beijing, China (H. Shen, D. Lv, D. Wang, G. Wang, L. Guo, x. zhang, C. He)
24	162462873	Effects of micro-topography induced water-logging on switchgrass (Alamo) growth in lowland areas Shiying Tian, NCSU, Raleigh, NC (S. Tian, M.A. Youssef, M. Fisher, G.M. Chescheir, J. Cacho, J.E. Nettles)	39	162459101	Process simulation of fed-batch enzymatic hydrolysis for cellulosic ethanol production Ellen Emanuel, University of Nebraska-Lincoln, Gretna, NE (E. Emanuel, D. Keshwani, M. Tai)
25	162462880	Impacts of trees on Switchgrass growth in Pine-Switchgrass intercropping system Shiying Tian, NCSU, Raleigh, NC (S. Tian, J. Cacho, M.A. Youssef, G.M. Chescheir, M. Fisher, J.E. Nettles)	40	162461973	OpTiGaS Model Part 2: Lessons learned from Clustering Digester Methane storage and Megawatt Scale Fuel Cells for the Spot Market Stefan Minott, GRTechSol.com, Ithaca, NY (S. Minott, N.R. Scott)
26	162456019	Volatile organic compound removal using metal loaded on activated carbon of rice husk Hyungseok Nam, Texas A&M University, College Station, TX (K. Nam, H. Jeong, H. Nam)	41	162534406	Overcoming the blend wall: Ethanol as a green solvent for thermochemical conversion of whole biomass into high-value aromatics and purified cellulose Joe Sagues, University of Florida, Gainesville, FL (J. Sagues, Z. Tong)
27	162457420	Assessment of Soil Amendment and Carbon Sequestration Potential of Miscanthus and Switchgrass Biochars Oluwatosin J. Oginni, West Virginia University, Morgantown, WV (O.J. Oginni, K. Singh)	42	162461220	Feasibility analysis of vacuum-coupled high-solid fermentation of corn Deepak Kumar, Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL (D. Kumar, H. Huang, W. Liu, V. Singh)
28	162460463	Pre-treatment and microwave hydrothermal carbonization of seafood waste Shrikalaa Kannan, McGill University, Ste-Anne-de-Belleve, Canada (S. Kannan, Y. Gariepy, V. Raghavan)	43	162461306	Performance analysis of a top lit updraft (TLUD) gasifier stove, operated with respect to fuel characteristics of multiple types of biomass feedstock Yuguang Zhou, China Agricultural University, Beijing, China (Y. Zhou, R. Ahmad)
29	162460734	Catalytic conversion of guaiacol to phenols over graphite-encapsulated nano molybdenum carbide catalysts Rui Li, North Carolina A&T State University, Greensboro, NC (R. Li, A. Shahbazi)	44	162460851	Slow pyrolysis of lignin: Analysis of product yields and products properties Liyuan Qin, Northeast Agricultural University, Harbin, China (L. Qin)
30	162459895	Hydrothermal carbonization of animal manures: processes and energetics Kenneth Stone, USDA-ARS, Florence, SC (K.S. Ro, M. Vanotti, K. Stone)	45	162462947	Acidic electrolyzed water explosion Pretreatment of Corn cob for xylooligosaccharide production junshe sun, Chinese Academy of Agricultural Engineering, Beijing, China (j. sun, h. pei, m. wang, z. chen, x. zhang)
31	162433897	Activated Carbons from Herbaceous Bioenergy Crops for Adsorption of Pharmaceutically Active Compounds Oluwatosin J. Oginni, West Virginia University, Morgantown, WV (O.J. Oginni, K. Singh)	45	162468308	Analysis of Physical and Chemical Properties of Carbonized Rice-straw Xiao-na Yu, Henan Agricultural University, Zhengzhou, China (X. Ye, X. Yu)
32	162460430	Biological Conversion of Aqueous Wastes from a Pilot Hydrothermal Liquifaction Biorefinery to Lipids Xiaolu Li, Washington State University, Richland, WA (X. Li, Y. He, C. Smith, A.J. Schmidt, b. yang)			
33	162460265	Fungal-Organosolv Delignification of Pinus taeda Softwood for Enhanced Enzymatic Hydrolysis and Lignin Extraction Gurshagan Kandhola, University of Arkansas, Fayetteville, Fayetteville, AR (G. Kandhola, K. Rajan, D. Carrier, J. Kim)			
34	162460137	The Investigation of Red Photons on Lettuce Growth Intergrading LEDs and Optical Filters Bo-Sen Wu, McGill University, Ste-Anne-de-Belleve, Canada (B. Wu, S. Reddy, M.G. Lefsrud)			

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 229

ERGONOMICS, SAFETY, & HEALTH POSTER SESSION – Sponsored by ESH
LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
46	162436716	Tractor Age Effects on Occupational Noise Level Exposures Inside Agricultural Tractor Cabs John K. Schueller, University of Florida, Gainesville, FL (M.J. Crowder, J.K. Schueller, C.J. Lehtola)

TUESDAY, JULY 19

47	162380636	Dynamic simulation modelling of agricultural tractors with automatic deployment of ROPS Bernardo Martin-Goriz, Universidad Politecnica de Cartagena, Cartagena, Spain (B. Martin-Goriz, D. Ojados Gonzalez, I. Ibarra Berrocal, B. Miguel Hernandez, G. Adolfo Salcedo, A. Guasp Alburquerque, A. Macian Morales)
48	162461309	Examination of Factors Impairing Operator Visibility for Machinery with Known Blind Spots Shawn G. Ehlers, Purdue University, Versailles, IN (S.G. Ehlers, W.E. Field)
49	162460651	Water-injected detecting method research based on relative value of water content of beef Xu Wang, College of Engineering, China Agricultural University, Beijing, China (M. Tang, X. Wang, Y. Xu, H. Shi, X. Tang)
50	162462798	Risk Assessment of a Tractor Based on Accident Cases: Hazard Identification and Frequency Estimation Byounggap Kim, National Institute of Agricultural Science, Jeonju-si, Korea (the Republic of) (B. Kim, S. Lim, S. Shin, S. Yum, Y. Kim, N. Yun, S. Yu)
51	162456894	Use of Thermography in the Analysis of Thermal Comfort of Agricultural Machinery Operators Murilo M. Baesso, Universidade de São Paulo, Pirassununga, Brazil (M.M. Baesso, V. Amaral, J. Silvestrini, J. Fiorelli, G. Schmidt, J. Machado)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 230

AOCABFE AND NERCITA CHINA EXCHANGE FORUM - INVITED SPEAKERS

– Sponsored by Intl-601, E-2050

Moderators: Zhiming Qi, McGill University, Sainte-Anne-de-Bellevue,

LOCATION: Fiesta 6

The 2016 AOCABFE & NERCITA China Exchange Forum's theme this year is "Agricultural and Biological Engineering for Tomorrow." Under this theme, we will be hosting invited speakers from China and the US to present their research and education programs, share their experiences in collaborations between China and the US, and envision the future of technology and international collaboration for a sustainable tomorrow through agricultural and biological engineering.

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162552933	TBA Gary Clark, Kansas State Univ, Manhattan, KS (G. Clark)
2:50PM	162569607	Introduction of NERCITA Jiangbo Li, Beijing Research Center of Intelligent Equipment for Agriculture, Beijing, China (J. Li)
3:05PM	162552942	US-China Cooperation in Precision Agriculture Kenneth A. Sudduth, USDA-ARS, Columbia, MO (K.A. Sudduth)
3:20PM	162569610	Monitoring Crop Growth in the Context of Precision Farming Using New Near-Ground and UAV-based Imaging Systems Yan Zhu, Nanjing Agricultural Univ, Nanjing, China (Y. Zhu)
3:35PM		Break
3:45PM	162552946	UC Davis New Model for International Cooperation Zhongli Pan, USDAARS WRRRC, Albany, CA (Z. Pan)
4:00PM	162552950	IJABE: Past and Future Yingkuan Wang, Chinese Academy of Agricultural Engineering, Beijing, China (Y. Wang)
4:15PM	162569611	School of Agricultural Equipment Engineering, JiangSu University Qinglin Li, JiangSu University, Zhenjiang, China (Q. Li)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 231

ADVANCED COMPUTATIONAL APPROACHES FOR SOLVING AGRICULTURAL AND BIOLOGICAL ENGINEERING PROBLEMS -PART 2

– Sponsored by ITSC-217, ITSC-254

Moderator: Matthew Harper

LOCATION: Coronado B

Time	Paper #	Title/Authors
2:30PM		Introduction - Matthew Harper, Moderator
2:35PM	162458838	A Leaf Picking Algorithm for a Strawberry Disease Detection Robot Yunjun Xu, University of Central Florida, Orlando, FL (S.G. Deftler, P. Menendez-Aponte, Y. Xu)
2:50PM	162460823	Study on texture classification of cantaloupe based on machine vision Jihai Xu, Zhejiang University, Hangzhou, China (J. Xu, L. Xiao, X. Rao)
3:05PM	162460657	Potential use of biospeckle imaging technique for skinning injury detection of potato tubers Yingwang Gao, Zhejiang University, Hangzhou, China (Y. Gao, X. Rao, Y. Ying)
3:20PM	162461921	Sow lying behaviors before, during and after farrowing Hongwei Xin, Departments of Agricultural & Biosystems Engineering (ABE) and Animal Science, Ames, IA (F. Lao, T.B. Brandl, J.P. Stinn, G. Teng, K. Liu, H. Xin)
3:35PM	162461103	Evaluation of using a depth sensor for estimating weights of finishing pigs Isabella C. Condotta, ESALQ/USP, Piracicaba, Brazil (I.C. Condotta, T.B. Brandl, K.O. Miranda, J.P. Stinn)
3:50PM		Break
4:00PM	162460619	Improvement of accuracy for egg dynamic weighing using artificial neural network Jianyi Zhang, Zhejiang University, College of Biosystems Engineering and Food Science, Hangzhou, China (J. Zhang, Y. Ying, H. Jiang, Y. Yu, J. Wang)
4:15PM	162460297	A spatially explicit, agent-based model for simulating movements of cattle grazing corn residues Tong Liu, University of Illinois at Urbana-Champaign, Urbana, IL (T. Liu, L.F. Rodriguez, B. Lehman, A. Green, M.B. Villamil, D.W. Shike)
4:15PM	162460322	Spatially-explicit methodology for manure management at the watershed level Mahmoud A. Sharara, University of Wisconsin-Madison, Madison, WI (M.A. Sharara, R. Larson, T. Runge)
4:30PM	162455470	Identification of Soft Shell Shrimp Based on Deep Learning Liu Zihao, Zhejiang university, Hangzhou, China (L. Zihao, C. fang, Z. Wei, H. Jiang)

Tuesday, July 19 - 2:30PM - 5:15PM

SESSION 232

SPECTROSCOPIC IMAGING

– Sponsored by ITSC-348

Moderator: Lav Khot, Washington State University, Pullman, WA

LOCATION: Coronado D

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461833	Imaging System to Enhance Grading of Table Eggs Kurt C. Lawrence, USDA, ARS, Athens, GA (K.C. Lawrence, S. Yoon, D.R. Jones, G.W. Heitschmidt)
2:50PM	162460315	Surface and subsurface inspection of food safety and quality using a line-scan Raman system Jianwei Qin, USDA-ARS, Beltsville, MD (J. Qin, M. Kim, K. Chao, W. Schmidt, S. Delwiche)

TUESDAY, JULY 19

3:05PM	162455503	Advancing Microsoft Excel's Potential for Low-Cost Digital Image Processing and Analysis Peter A. Larbi, Arkansas State University, College of Agriculture & Technology, State University, AR (P.A. Larbi)
3:20PM	162460707	Blueberry Bruise Detection using Hyperspectral Transmittance Imaging Mengyun Zhang, The University of Georgia, Athens, GA, United States (M. Zhang, C. Li)
3:35PM	162460787	RGB2X: An RGB Image Data Extract-Export Tool for Digital Image Processing and Analysis in Microsoft Excel Peter A. Larbi, Arkansas State University, College of Agriculture & Technology, State University, AR (P.A. Larbi)
3:50PM		Break
4:00PM	162455510	Comparison of Image Data Obtained with Different Commercial Cameras for Use in Visible Spectroscopy Peter A. Larbi, Arkansas State University, College of Agriculture & Technology, State University, AR (C. Vong, P.A. Larbi)
4:15PM	162461247	Hyperspectral Imaging-Based Surface and Internal Defects Detection of Cucumber via Stacked Sparse Auto-encoder and Convolutional Neural Network Ziyi Liu, Zhejiang University, Hangzhou, China (Z. Liu, R. Lu, Y. He, H. Cen)
4:30PM	162461046	Tobacco mosaic disease measurement of tobacco canopy based on field remote sensing Xinxin Chen, Zhejiang University, Hangzhou, China (X. Chen, Y. He)
4:45PM	162460625	Assessment of habitat suitability to aphid in winter wheat by integrating remote sensing and meteorological data Jingcheng Zhang, Hangzhou Dianzi University, College of Life Information Science and Instrument Engineering, Hangzhou, China (J. Zhang, L. Yuan, K. Wu, L. Li)
5:00PM	162460438	Using Reflectance and Gray-Level Texture for Water Content Prediction in Grape Vines Linjun Jiang, Zhejiang University, Hangzhou, China (L. Jiang, Y. Shao)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 233

IMAGING TECHNOLOGIES FOR HIGH THROUGHPUT PHENOTYPING – Sponsored by ITSC-312, ITSC-348

Moderator: Changying Li, University of Georgia, Athens, GA

LOCATION: Coronado E

Time	Paper #	Title/Authors
2:30PM		Introduction -
2:35PM	162461885	Comparing the Utility of Uncooled Thermal Cameras for Spatial Temperature Measurement for Crop Monitoring within Precision Agriculture Devin L. Mangus, Kansas State University, Manhattan, KS (D.L. Mangus, A. Sharda)
2:50PM	162460752	High spatial and spectral resolution ground-based mobile imaging system for agricultural applications Amr Abd-Elrahman, University of Florida, Plant City, FL (A. Abd-Elrahman, N. Sassi, B. Wilkinson, B. Dewitt)
3:05PM	162460561	High-resolution phenotyping for investigating the genotype-phenotype association in rice grains Yan-Fu Kuo, National Taiwan University, Taipei, Taiwan (T. Kuo, S. Chen, H. Lin, C. Chung, Y. Kuo)
3:20PM		Break

3:30PM	162456248	An imaging-based system for high-throughput phenotyping of cotton plants under field conditions Yu Jiang, The University of Georgia, Athens, GA (Y. Jiang, C. Li, A. Paterson, J. Robertson)
4:00PM	162460241	Characterizing phenotypes of maize plants using UNL's high throughput imaging greenhouse Yufeng Ge, University of Nebraska - Lincoln, Lincoln, NE (Y. Ge, G. Bai, J. Schnable, V. Stoerger)
4:15PM	162461858	Visible imaging tools for high-throughput crop phenotyping Sindhujha Sankaran, Washington State University, Pullman, WA (S. Sankaran, Y. Si)
4:30PM	162461829	Monitoring Plant Phenology using Phenocam: A Review Sunoj Shajahan, North Dakota State University, Fargo, ND (S. Shajahan, I. Cannayen, J. Hendrickson)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 234

TEACHING INSTRUMENTATION, CONTROLS, AND PRECISION AGRICULTURE – Sponsored by ITSC-353, MS-54

Moderator: Manoj Karkee, Washington State University, Prosser, WA

LOCATION: Coronado A

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162538490	CAN Bus and Systems Engineering in a Project Oriented Course Matthew J Darr, Iowa State University, Ames, IA (M. Darr)
2:50PM	162538491	Instrumentation for Engineering Research and Control of Off-Road Vehicles at the University of Kentucky Michael P. Sama, University of Kentucky, Lexington, KY (M.P. Sama)
3:05PM	162538492	Advances in Texas A&M's Measurement and Control Course Alex Thomasson, Texas A&M University, College Station, TX (A. Thomasson)
3:20PM	162538495	Teaching Precision Ag and Electronics for a Less-Technical Audience Aaron Franzen, South Dakota State University, Brookings, SD (A. Franzen)
3:35PM		Break
3:45PM	162462674	A general purpose wireless data acquisition and control system with flexible Android interface Daniel M. Jenkins, University of Hawaii, Honolulu, HI (D.M. Jenkins, L. Parente)
4:00PM	162538497	Teaching Remove Sensing for Precision Agriculture Keith A. Cherkauer, Purdue University, West Lafayette, IN (K.A. Cherkauer)
4:15PM	162538499	Teaching Precision Agriculture Technology for Campus and Distance Education Students Gary T. Roberson, North Carolina State Univ, Raleigh, NC (G.T. Roberson)
4:30PM	162461841	Development and Assessment of Hands-on Precision Ag Data Management Workshops: A Two Year Review Joe D. Luck, University of Nebraska-Lincoln, Lincoln, NE (J.D. Luck)

TUESDAY, JULY 19

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 235

PRECISION SPRAYING AND AERIAL APPLICATIONS – Sponsored by MS-54

Moderator:

LOCATION: Coronado G

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460541	The influence of a young pine canopy on aerial spray drift Brian Richardson, Scion, ROTORUA, New Zealand (T. Strand, B. Richardson, H. Thistle, A. Hiscox)
2:50PM	162460946	Performance Analysis of Consumer Grade GPS Units for Dynamic Aerial Applications Roberto Rodriguez, University of Hawaii at Manoa, Honolulu, HI (R. Rodriguez, D. Jenkins, J. Leary, K. Nolan, B. Mahnken)
3:05PM	162460509	Development and Testing of an Individual Nozzle Direct Injection Pesticide Delivery System Joe D. Luck, University of Nebraska-Lincoln, Lincoln, NE (J.D. Luck, M.P. Sama, S. Shearer)
3:20PM	162461282	Evaluation Approach for Assessing Performance of Pulse Width Modulation(PWM) Spray Application Systems Brittany A. Schroeder, The Ohio State University, Columbus, OH (B.A. Schroeder, A.A. Klopfenstein, S. Shearer)
3:35PM		Break
3:45PM	162460726	Using airborne imagery to map a winter weed and assess site-specific aerial herbicide application Chenghai Yang, USDA-ARS, College Station, TX (C. Yang, D.E. Martin)
4:00PM	162461544	Machine Vision Smart Sprayer for Spot-Application of Agrochemical in Wild Blueberry Fields Travis Esau, Dalhousie University, Truro, Canada (T. Esau, Q. Zaman, D. Groulx, Y.K. Chang, A.W. Schumann, p. havard)
4:15PM	162462667	Real-time UAV weed scout for selective weed control by adaptive robust control and machine learning algorithm LiuJun Li, Department of Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL (L. Li, X. Huang, Y. Fan, L. Tian)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 236

MACHINERY SYSTEMS FOR CROP PRODUCTION - PART 2 – Sponsored by MS-49

Moderator: Niels Dybro

LOCATION: Coronado M

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461272	Using an autonomous articulated field scout for leaf and soil sampling of Peanuts Glen C. Rains, University of Georgia, Tifton, GA (G.C. Rains, G. McMurray, F. Dellaert, A. Hu, B. Bazemore, K. Ahlin, N. Sadegh, S. Thomas)
2:50PM	162461923	Development and evaluation of in-field method for estimating peanut digging losses from pod lengths Kendall R. Kirk, Clemson University, Blackville, SC (B. Teddy, K.R. Kirk, H.F. Massey, B. Fogle)
3:05PM	162462099	Development of Pneumatically Powered Intra-Row Cleaner Machine For Organic Row Crops Engin Cakir, Ege University, Bornova, Turkey (E. Cakir, I. Aygun, Y. Karabulut)
3:20PM	162460473	Effect of Feeding Radius on Distribution Uniformity in Twin-Disk Fertilizer Broadcaster Firat Komekci, Ege University, Izmir, Turkey (C. Komekci, F. Komekci, H. Guler)
3:35PM		Break

3:45PM	162456725	Alternative Systems for Cultivating and Side Dressing Specialty Crops for Improved Nitrogen Use Efficiency Mark Siemens, University of Arizona, Dept. of Ag & Biosystems Engineering, Tucson, AZ (M. Siemens, R. Gayler)
4:00PM	162447772	Development of New Equipment and Technologies for Pattern Testing Agricultural Spray Planes Randy R. Price, LSU AgCenter, Alexandria, LA (R.R. Price)
4:15PM	162460963	Developing a Controlled Seed Delivery System with Conveyor Belts on Precision Planters for Sunflower Mojtaba Ahmadi, North Dakota State University, Fargo, ND (M. Ahmadi, G.C. Bora)
4:30PM	162459969	Improved design and experiment of whole stalk operating system after sugar cane severing Luxin Xie, Zhejiang University, Hangzhou, China (L. Xie, J. Wang, S. Cheng, J. Hu)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 238

MACHINERY SYSTEMS POSTER SESSION – Sponsored by MS

Moderator: H Mark Hanna

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
52	162462635	Dynamic analysis on relationship between vibration parameters and tree aerial architecture for selective harvesting Han Fu, China Agricultural University, Beijing, China (D. Chen, D. Wang, F. Zhang, H. Fu, s. wang)
53	162457303	An approach to mechanical thinning of mandarins Bernardo Martin-Goriz, Universidad Politecnica de Cartagena, Cartagena, Spain (C. Ortiz, B. Martin-Goriz, E. Orti, A. Torregrosa)
54	162462445	General Method for the Design of Transplanting Mechanism with Spatial Planetary Gear Trains Liang Sun, Zhejiang Sci-Tech University, Hangzhou, China (L. Sun, G. Yu, X. Zhao)
55	162460659	Study in the effect of excitation frequency on the fruit trees acceleration transfer characteristics. Linyun Xu, Nanjing Forestry University, Nanjing, China (Y. Xuan, L. Xu, H. Lin, W. Zhou, L. Weng)
56	162458061	Platform Stability for a High Clearance Citrus Harvester's Suspension System : Part 1. Modeling and Validation. Yongmin Chung, University of Florida, Gainesville, FL (Y. Chung, T. Burks)
57	162456743	Effect of controlled traffic farming on energy savings in Australian grain cropping systems Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (A.A. Luhaib, J.N. Tullberg, G. Chen, D.L. Antille)
58	162456741	Spatial distribution of soil mechanical strength within a controlled traffic farming system as determined by cone index and geostatistical techniques Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (C.A. Alessio, P.A. Cipriotti, C.G. Linguetti, M.J. Masola, D.L. Antille, S.C. Imhoff)
59	162456746	Grain yield and nitrogen fertilizer-use efficiency as affected by controlled and non-controlled traffic of farm machinery Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (M.A. Hussein, D.L. Antille, A. Ferrante, G. Chen, J.N. Tullberg)
60	162457024	Optimal planting dates of cotton to reduce soil compaction at harvest Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (J. Owens, D.L. Antille, J.M. Bennett, T.A. Jensen)

- | | | | | | |
|----|-----------|--|----|-----------|---|
| 61 | 162428455 | Experimental study on influencing factors of soil-root composite unconfined compressive strength
Changbin He, College of Engineering, China Agricultural University, Beijing, China (C. He, Y. You, D. Wang, G. Wang, H. Wu) | 76 | 162460933 | Design of automatic calf feeding Control System
Changbin He, College of Engineering, China Agricultural University, Beijing, China (Y. Bai, D. Wang, D. Meng, J. Gao, D. Tang, C. He) |
| 62 | 162451111 | Study on the influencing factors of soil-root composite shear strength
Changbin He, College of Engineering, China Agricultural University, Beijing, China (C. He, Y. You, D. Wang, G. Wang, H. Wu) | 77 | 162460929 | The program design of calves feeding system
Changbin He, College of Engineering, China Agricultural University, Beijing, China (Y. Bai, D. Wang, J. Gao, D. Meng, D. Tang, C. He) |
| 63 | 162436083 | Response of forage maize to different soil compaction levels and tillage depths
Khalid A. Al-Gaadi, Dept. of Agric. Eng., Precision Agric. Research Chair, College of Food and Agric. Sciences, King Saud University, Riyadh, Saudi Arabia (K.A. Al-Gaadi, A.M. Zeyada, E. Tola, R. Madugundu, A. Kayad) | 78 | 162461194 | Simple Field Logistics Simulation Comparing Field Efficiencies and Field Capacities between Larger and Smaller Equipment
Joseph Dvorak, University of Kentucky, Lexington, KY (J. Dvorak, H. Seyyedhasani) |
| 64 | 162458620 | Influence of process parameters on the Mo2Ni3Si/r-Ni coatings by laser cladding
Xu Wang, College of Engineering, China Agricultural University, Beijing, China (J. Liu, Y. Xu, M. Deng, F. Liu, X. Wang, G. Ling) | 79 | 162461200 | System Power requirements for a Fully Electric Dri-vetrain in Ag
Joseph Rounsaville, University of Kentucky, Lexington, KY (J. Rounsaville, J. Dvorak) |
| 65 | 162461151 | Study on different pressure of V-shape closing wheel on corn planting depth and seedling growth
Dongxing Zhang, China Agricultural University, Beijing, China (R. Zhang, D. Zhang, T. Cui, L. Yang) | 80 | 162460228 | Using Precision Agriculture Field Data to Evaluate Combine Harvesting Field Efficiency
Don Johnson, University of Arkansas, Fayetteville, AR (D. Johnson, J.H. Carroll) |
| 66 | 162460563 | Effect of air pressure on the performance of a centralized pneumatic metering system for rice direct seeding
Dongxing Zhang, China Agricultural University, Beijing, China (B. Qi, W. Zhang, D. Zhang, S. Yu, Y. Ji, K. Li, H. Ji) | 81 | 162462618 | Improved Hydraulic Normal Loading Device for Single Wheel Test Rig
Mansingh Murmu, Indian Institute of Technology Kharag-pur, Kharagpur, India (M. Murmu) |
| 67 | 162457977 | Field contrast test on seed spacing uniformity of corn seeder with seed delivery device and seed tube
Li Yang, China Agriculture University, Beijing, China (Q. Liu, D. Zhang, T. Cui, L. Yang, X. He, B. Yan) | 82 | 162458121 | Analysis of the use of electricity as a source of power in agricultural tractors
Carlos Eduardo S. Volpato, Federal University of Lavras, Lavras, Brazil (C.S. Volpato, V.R. Paula, J.A. Barbosa, E.L. Volpato) |
| 68 | 162457948 | Optimal design of motor driving belt-type seed delivery system based on bench test and high-speed camera system
Li Yang, China Agricultural University, Beijing, China (Q. Liu, D. Zhao, D. Zhang, L. Yang, T. Cui, X. Yin, X. He, D. Han, B. Yan, Z. Qu, K. Li, M. Wang, T. Zhang, Y. Wang, C. Du) | 83 | 162459957 | As-Applied Estimation of Volumetric Flow Rate Dis-tribution from a Spray Nozzle using Liquid Mass on a Target
Emma K. Benedict, University of Kentucky, Lexington, KY (E.K. Benedict, M.P. Sama, A. Turner) |
| 69 | 162455423 | Design and Experiment of Seed Tube in Air Pressure Maize Precision Planter
Li Yang, China Agriculture University, Beijing, China (X. Yin, K. Li, X. He, D. Han, D. Zhang, L. Yang, T. Cui) | 84 | 162461123 | Plant Contour and Color Feature Recognition using a Sensor-based Detection Method
Hui Liu, Jiangsu university, Zhenjiang, China (H. Liu, H. Xu, Y. Shen) |
| 70 | 162457891 | Design and experimental study on small maize planters for Southwest China
Dongxing Zhang, China Agricultural University, Beijing, China (B. Yan, D. Zhang, Y. Li, T. Cui, Q. Liu, X. Yin, K. Li, D. Han, Y. Wang, R. Zhang, X. He) | 85 | 162468559 | Design and Experimental Study of the Lifting Film Shovel for Residual Plastic Film of Bed Planting
Jianhua Xie, Xinjiang Agricultural University, Saybagh District, China (J. Xie, S. Hou, X. Zhang) |
| 71 | 162457831 | Study and field experiment of maize precise seeder based on layered fertilization and deep loosen technology
Dongxing Zhang, China agricultural university, Beijing, China (Z. Liang, D. Zhang, Y. Li) | 86 | 162514012 | Research on Length of Punching Hole of Dibble-type Transplanting Machine Base on Matlab
Xuying Li, Inner Mongolia Agricultural University, Inner Mongolia, China (X. Li, S. He, G. Lu, N. Li, W. Kang) |
| 72 | 162455417 | Effects of varying down force and planting speed on sowing depth uniformity for corn planter
Dongxing Zhang, China Agricultural University, Beijing, China (R. Zhang, D. Zhang, T. Cui, Y. Li, K. Li, X. Yin, D. Han) | 87 | 162521612 | The Design of PUP Hydraulic Controlled Well Driver for Small Household
Siwen Zhao, Purdue, West Lafayette, IN (S. Zhao, R. Stwalley) |
| 73 | 162457989 | The Effect of Downforce on the Development and Distribution of Tiller Nodal Roots Maize in Collocated Copying Planting Unit
Dongxing Zhang, China Agriculture University, Beijing, China (X. Yin, D. Zhao, Y. YU, L. Yang, T. Cui, Y. Wang, B. Yan, D. Zhang) | 88 | 162425283 | Route Planning Algorithm Based on Multi-constraint Conditions for Plant Protection UAVs in Irregular Area
Bo Xu, China Agricultural University, Beijing, China (B. Xu, L. Chen, Y. Tan, M. Xu) |
| 74 | 162461883 | Simulation of Silage Screw Conveyor Flow Properties Based on EDEM
Changbin He, China Agricultural University, Beijing, China (Z. gong, D. Wang, G. Wang, H. Wu, C. He) | 89 | 162470600 | Development of an intelligent style of precision maize seeder
Duanyang Geng, Shandong University of Technology, Zibo, China (D. Geng, R. Du, D. Zhang, P. Meng, P. Diao) |
| 75 | 162461881 | Simulation Analysis and Design of Vertical Screw Silage-Conveyor Based on EDEM
Changbin He, China agricultural university, Beijing, China (z. gong, D. Wang, G. Wang, H. Wu, C. He) | 90 | 162457830 | Spring Preload Adjustable Vibration Subsoilers
Zhidong Shi, China Agricultural University, Beijing, China (Z. Shi, D. Zhang) |
| | | | 91 | 162458504 | Experimental Study on Operating Parameters of air-suction precision cottonseed-metering device based on bench test
Tao Cui, China Agricultural University, Beijing, China (D. Zhao, X. Yin, C. Du, D. Zhang, L. Yang, T. Cui, Z. Qu, Q. Liu, D. Han, K. Li, T. Zhang) |
| | | | 92 | 162461884 | Optimization design of self-propelled forage silage harvester's frame
Zhen Guo, College of engineering, Beijing, China (Z. Guo) |

TUESDAY, JULY 19

93	162460654	Optimization design of silage stirring device based on EDEM Zeqi Gong, China Agricultural University, Beijing, China (z. gong, D. Wang)
94	162460652	The design of fresh forage compression device Zeqi Gong, China Agricultural University, Beijing, China (z. gong, D. Wang)
95	162458717	Experiment and Simulation Analysis the Residence Time in a Triple-pass Drum Dryers of Organic Fertilizer Based on EDEM xiaoming zhang, China Agricultural university, Beijing, China (x. zhang, G. Wang, D. Wang, Y. Yu, Q. Sun)
96	162470007	Situation in dual-use 100 horsepower tractor gearbox design Maohua Xiao, Nanjing University, Nanjing, China (M. Xiao, Y. Li, Y. Wang, H. Zhang, S. Zhu)
97	162514018	Impact of Moisture Content and Particle Size on Energy During Corn Stalk Densification with Assistive Vibration Yanhua Ma, Inner Mongolia Agricultural University, Inner Mongolia, China (Y. Ma, P. Wu, L. Zhang, C. Xuan, D. Xue)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 239

AN UPDATE ON THE ENVIRONMENTAL CAB STANDARD, ASABE S-613-INVITED – Sponsored by MS

Moderator: Richard Job

LOCATION: Fiesta 5

This session will be a summary of the efforts to develop the environmental cab standard and what the standard means and can do for operations in contaminated environment.

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461359	A Summary of Environmental Cab Standard Development Richard Job, Richard W Job & Associates LLC, Ankeny, IA (R. Job)
2:55PM	162543669	Testing Efforts to Verify the Cab Standard and Issues with Filter Development for this Market Michael Schmitz, Clean Air Filter Company, Defiance, IA (M. Schmitz)
3:15PM	162543667	Research Efforts in Mining Applications and Verification of the Elements of this Standard John A. Organiscak, NIOSH, Pittsburgh, PA (J.A. Organiscak)
3:35PM		Break
3:45PM	162543672	How Does the Development of This Standard Impact Other Industries Alan G. Leupold, Bergstrom, Rockford, IL (A.G. Leupold)
4:05PM	162543674	An Update on EN 15695 and Other Issues Related to Operator Environment in the EU Keith J. Hawken, Agricultural Engineers Association, Stamford, United Kingdom (K.J. Hawken)

Tuesday, July 19 - 2:30PM - 5:45PM

SESSION 240

ADVANCES IN EVAPOTRANSPIRATION RESEARCH – Sponsored by NRES-21, NRES-24

Moderator: Devendra Amatya

LOCATION: Coronado N

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460461	Comparison of evaporation rates from Florida lakes David Sumner, USGS, Lutz, FL (D. Sumner, M. Wacker, W. Shoemaker)
2:50PM	162462980	Evapotranspiration Estimation from Soil Profile Moisture Data: Potential Pitfalls and Solutions Subodh Acharya, University of Florida, Gainesville, FL (S. Acharya, M. Cohen, D. Kaplan, D. McLaughlin)
3:05PM	162462355	A New Spring-Based Weighing Lysimeter Design for Measuring Crop Evapotranspiration Ali Mirzakhani Nafchi, Clemson University, Blackville, SC (J. O. Payero, A. Mirzakhani Nafchi, A. Khalilian, R. Davis)
3:20PM	162461533	Estimating PET and ET of Switchgrass and Its Inter-cropping in Young Pine Stands on a North Carolina Coastal Plain Site. Devendra M. Amatya, USDA Forest Service, Cordesville, SC (D.M. Amatya, G.M. Chescheir, A. Muwamba, T. Appelboom, J.E. Nettles)
3:35PM	162461624	Irrigation management impact on evapotranspiration and land-atmosphere exchange of CO₂ and CH₄ in Mid-South rice Michele L. Reba, USDA-ARS-Delta Water Management Research Unit, Jonesboro, AR (M.L. Reba, B. Fong, B. Runkle, K. Suvocarev, M. Adviento-Borbe)
3:50PM		Break
4:00PM	162461415	Mapping Potential and Reference Evapotranspiration over Florida using Geostationary Operational Meteorological Satellite Imagery W. Barclay Shoemaker, U.S. Geological Survey, Davie, FL (W. Shoemaker, M. Holmes, M. Wacker, D. Sumner)
4:15PM	162460360	Satellite remote sensing of actual evapotranspiration form drylands of Washington State M. Azeem Khan, Washington State University, Pullman, WA (M. Khan, C. Stöckle, R. Allen, R. Trezza)
4:30PM	162458472	Comparison of SWAT-Estimated ET with Remotely Sensed ET Ahmed Hashem, Purdue University, West Lafayette, IN, United States (A. Hashem, . Rajib, V. Bralts, B. Engel, V. Merwade, P.H. Gowda, D.C. Flanagan, M. Abo Zeid)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 241

MODELING SUBSURFACE DRAINAGE SYSTEMS – Sponsored by NRES-23

Moderator: Zhiming Qi, McGill University, Sainte-Anne-de-Bellevue, Canada

LOCATION: Yucatan 1

Time	Paper #	Title/Authors
2:30PM		Introduction
2:50PM	162458565	Comparison of performance of tile drainage routines in SWAT 2009 and 2012 in the Little Vermillion River Watershed Tian Guo, Purdue University, West Lafayette, IN (T. Guo, B. Engel, J. Arnold, R. Srinivasan, M. Hirsch)
3:05PM	162461352	Modification of SWAT tile drainage simulation and evaluation using measured tile flow Colleen A. Moloney, Purdue University, West Lafayette, IN (C.A. Moloney, J. Frankenberger)

TUESDAY, JULY 19

3:20PM	162459497	Modeling of phosphorus loss through surface runoff and subsurface drainage in a tile drained field using ICECREAM Zhiming Qi, McGill University, Sainte-Anne-de-Bellevue, Canada (H. Qi, Z. Qi, T. Zhang, C. Tan)
3:35PM		Break
3:45PM	162464147	Estimating Natural Seepage Rates Based on Soil Drainage Class and Color Richard W. Skaggs, North Carolina State University, Raleigh, NC (R.W. Skaggs, G.M. Chescheir)
4:00PM	162461340	Predicting Field Water Balance, Crop Yield, and Economic of Drainage under Various Cropping Systems Using DRAINMOD Shailendra Singh, South Dakota State University, Brookings, SD (S. Singh, L. Ahiablame, C. Hay)
4:15PM	162447364	Effect of Tile Drainage on Water Budget and Sediment Loads using SWATDRAIN Golmar Golmohammadi, University of Guelph, Guelph, Canada (G. Golmohammadi, R. Rudra, S. Prasher, P. Goel, K. Mohammadi, A. Madani, M.A. Youssef)
4:30PM	162461542	Effectiveness of controlled drainage as a water and nutrient management strategy for the Western Lake Erie Basin under future climate conditions Lindsay Pease, The Ohio State University, Columbus, OH (L. Pease, N. Fausey, J. Martin, L. Brown)

Tuesday, July 19 - 2:30PM - 5:30PM

SESSION 242

CROP MODELING AND DECISION SUPPORT FOR OPTIMIZING USE OF LIMITED WATER - PART 2 – Sponsored by NRES-24, NRES-21, NRES-28, ITSC-217
Moderator: Isaya Kisekka
LOCATION: Coronado P

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162463041	IComparison of the FAO-56 Water Balance Model and the DSSAT Cropping System Model for Cotton Irrigation Scheduling in Arizona Kelly R. Thorp, USDA-ARS, Maricopa, AZ (K.R. Thorp, K. Bronson, D. Hunsaker)
3:00PM	162463042	Parameter Estimation and Verification of DSSAT-CERES-Wheat Model for Simulation of Growth and Development of Winter Wheat under Water Stresses at Different Growth Stages Jianqiang He, Northwest A&F University, Yangling, China (J. He)
3:25PM	162460000	Using CROPGRO Model to Evaluate Irrigation Scenarios for Soybean Production in the Mississippi Delta Region Sandra M. Guzman, Mississippi State University, Mississippi State, MS (S.M. Guzman, J.O. Paz, M.M. Tagert, J.W. Pote)
3:40PM	162453836	Development of Crop Production Management Strategies for the state of Bihar (India), using Crop Growth Model, DSSAT Ranjeet K. Jha, University of Illinois at Urbana-Champaign, Urbana, IL (R.K. Jha, P.K. Kalita, R. Bhattarai)
3:55PM		Break
4:05PM	162455192	Gene-based Crop Modeling: Common Bean (<i>Phaseolus vulgaris</i> L.) Main Stem Leaf Area Growth Christopher Hwang, University of Florida, Gainesville, FL (C. Hwang, M.J. Correll, S. Gezan, L. Zhang, M.S. Bhakta, E.C. Valjejos, K.J. Boote, J. Clavijo Michelangeli, I. Rao, S. Beebe, J.W. Jones)
4:30PM	162461843	A Multi-Year Planning Tool for Limited Water Allocation Jonathan Aguilar, Kansas State University, Garden City, KS (J. Aguilar, D.H. Rogers, D. O'Brien, S. Briggeman, B. Golden, N. Klocke, I. Kisekka, F.R. Lamm)

4:45PM	162463044	From Field Knowledge to Regional Solutions to Agricultural and Water Resources Sustainability in the North China Plain: Combined Approaches of Experiments, Remote Sensing, and Modeling Yanjun Shen, Chinese Academy of Sciences, Shijiazhuang, China (Y. Shen)
5:10PM	162464828	Nitrogen Fertilization Patterns for Improving Yield and Nitrogen Use Efficiency in Rice Damodhara R. Mailapalli, IIT Kharagpur, Kharagpur, India (D.R. Mailapalli)

Tuesday, July 19 - 2:30PM - 5:30PM

SESSION 243

SUSTAINABLE WATER USE IN AGRICULTURE

– Sponsored by Florida

Section, NRES-26

Moderator:

LOCATION: Coronado Q

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162571750	Florida Agricultural Water Supply and Conservation - Past, Present and Future Camilo Gaitan, P.E., Florida Dept of Agriculture and Consumer Services, Tallahassee, FL
2:50PM	162462949	Identification and classification of nontraditional irrigation water sources as a means to agricultural water security Masoud Negahban-Azar, University of Maryland, College Park, MD (M. Negahban-Azar, A. Shirmohammadi, H. Montas)
3:05PM	162461625	Farm Grove Dispersed Water Storage/ Nutrient Reduction Project For Agricultural Water Use Sustainability David Howard, Graves Brothers Company, Vero Beach, FL (D. Howard, B. Whalen, D.C. Rutland)
3:20PM	162461583	Optimizing Stormwater and Wastewater Reuse to Minimize Groundwater Withdrawals for Large Agricultural Operations Daniel C. Rutland, Royal Consulting Services, Inc., Longwood, FL (K. McCue, D.C. Rutland)
3:35PM	162459238	Irrigation Efficiency Tests in the Oklahoma Panhandle Robert S. Frazier, Oklahoma State University, Stillwater, OK (R.S. Frazier, S. Taghvaeian)
3:50PM		Break
4:00PM	162461028	Analysis of Tile Drainage for a Two Acre Hoophouse System Utilizing Six DRAINMOD Scenarios in Urbana, Illinois Jaime Thissen, University of Illinois, Champaign, IL (J. Thissen, P. Davidson)
4:15PM	162460328	Modeling the Effects of Irrigation Management on Soil Salinity for Cotton Saleh Taghvaeian, Oklahoma State University, Stillwater, OK (S. Taghvaeian, S. Amiri)
4:30PM	162459854	Florida Statewide Agricultural Irrigation Demand: bio-economic modeling for projecting future water use Daniel Dourte, The Balmoral Group, Winter Park, FL (D. Dourte, R. Scott, V. Seidel)
4:45PM	162462909	Promoting Safe Use of Wastewater in Agriculture through Use of Hydrogels Jaskaran Dhiman, McGill University, Montreal, Canada (J. Dhiman, S. Prasher, E. Elsayed, C. Nzediegwu)
5:00PM	162459987	Improving livelihoods for smallholder rural communities of Nepal through renovated shallow dug wells Romulus O. Okwany, International Water Management Institute, Kathmandu, Nepal (R.O. Okwany)

TUESDAY, JULY 19

Tuesday, July 19 - 2:30PM - 5:15PM

SESSION 244

AGRICULTURAL BMPS: EFFECTIVENESS, VERIFICATION, AND MODELING

– Sponsored by NRES-26,

NRES-22, Florida Section

Moderator:

LOCATION: Coronado R

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162460139	Impact of hydrogeomorphic regions on effectiveness of agricultural best management practices M G Mostofa Amin, Penn State University, University Park, PA (M. Amin, T.L. Veith, A.S. Collick, J. Lamba)
2:50PM	162461670	Integrated conservation practice impacts on pollutant loads from the Maryland CEAP Choptank River watershed using AnnAGNPS Ronald Bingner, USDA, Oxford, MS (R. Bingner, A. Sadeghi, H. Momm, R. Wells, L. Yasarer, G. McCarty, T. Fisher, D. Hively)
3:05PM	162460868	Development and Initial Verification of Effectiveness for Agricultural Best Management Practices (BMPs) in Florida Michael V. Thomas, Florida Dept of Environmental Protection, Tallahassee, FL (M.V. Thomas, N.O. Bailey)
3:20PM	162461102	Potential Impact of USDA Conservation Practice Physical Effects (CPPE) on TMDL Modeling of Agricultural BMPs in Florida Nathaniel O. Bailey, Florida Agricultural & Mechanical University, Tallahassee, FL (N.O. Bailey)
3:35PM	162457615	Quantifying the Success of the Florida Agricultural BMP Implementation and Incentive Programs Adelbert B. Bottcher, Soil and Water Engineering Technology, Inc., Gainesville, FL (A.B. Bottcher)
3:50PM	162461879	Evaluation of an On-Farm Water Storage (OFWS) System in a small agricultural watershed in East Mississippi for nutrient loading reduction and supplemental irrigation. Ritesh Karki, Mississippi State University, Starkville, MS (R. Karki, M.M. Tagert, J.O. Paz)
4:05PM		Break
4:15PM	162455647	Systems approach to model the connectedness between Best Management Practices and vulnerability assessment in a changing climate Aavudai Anandhi, Florida A & M University, Tallahassee, FL (A. Anandhi, N.O. Bailey, M.V. Thomas)
4:30PM	162462941	Effectiveness of Nitrate-N Reduction Best Management Practices in the Upper Midwest Matthew Helmers, Iowa State University, Ames, IA (M. Helmers)
4:45PM	2460452	Effects of grain cropping systems on crop yields, runoff, and water quality on a claypan soil. Claire Baffaut, USDA-ARS, Columbia, MO (C. Baffaut, B. Lerch, F. Ghidry, N. Kitchen, K. Sudduth, M. Yost, J. Sadler)
5:00PM	162461603	Water quality changes with conversion from furrow to sprinkler irrigation. David L. Bjorneberg, USDA-ARS, Kimberly, ID (D.L. Bjorneberg, J. Ippolito, A.C. Koehn)
5:15PM	162460729	Analysis of parcel-level pollution control alternatives using agent-based model of furrow irrigation Hossein Ghoveisi, University of Florida, Gainesville, FL (U.A. Al-Dughaiishi, G.A. Kiker, H. Ghoveisi)
5:30PM	162465347	Pesticide Application Coverage Training: BMPs for Equipment Operators Joe D. Luck, University of Nebraska-Lincoln, Lincoln, NE (J.D. Luck)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 245

UNDERSTANDING SOIL HEALTH AND MANURE IMPACTS

– Sponsored by

NRES-27

Moderator: Amuy Schmidt

LOCATION: Coronado S

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM		A Case for Soil Health - Opportunities to Change the Face of Agriculture and How We Feed The World Bianca Moebius-Clune, USDA NRCS, Soil Health Div
3:05PM	162466019	Soil Invertebrates as Bioindicators of Agricultural Soil Quality Under Swine Slurry Treatments Amy M. Schmidt, University of Nebraska - Lincoln, Lincoln, NE (A.M. Schmidt, N.R. Schuster, J. Peterson, J.E. Gilley)
3:20PM	162556455	Residual Impact on Soil Health as Affected by Beef Manure as a Soil Amendment Bryan Woodbury, USDAARS, Clay Center, NE (B. Woodbury)
3:50PM		Break
4:00PM	162466072	Soil Quality Impacts of Land Applying Woody Biomass and Livestock Manure on Agricultural Fields Linda Schott, University of Nebraska-Lincoln, Lincoln, NE (L. Schott, A.M. Schmidt, H. Blanco)
4:15PM	162460219	Effect of cattle manure and Organic Humus catalyst on potato production in an arid region Behnaz Molaei, Isfahan University of Technology Isfahan, Isfahan, Iran (the Islamic Republic of) (B. Molaei, M. Gheysari, H. Sadeghi, B. Mostafazadeh-Fard, M. Majidi, K. Molaei)
4:45PM	162462972	Short term improvement in Soil Quality in Conservation Agriculture with Commercial Household Vegetable Farmers in Cambodia Don Immanuel A. Edralin, North Carolina Agricultural and Technical State University, Greensboro, NC (D.A. Edralin, M.R. Reyes, G. Sigua)
5:00PM	162461725	An investigation into the effect of soil compaction and tillage on plant growth and yield of winter barley (<i>Hordeum vulgare</i> L.) William A. Millington, Harper Adams University, Telford, United Kingdom (W.A. Millington, P.A. Misiewicz, D.R. White, E.T. Dickin, R.J. Godwin)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 246

LOW IMPACT DEVELOPMENT AND ECOHYDROLOGY

– Sponsored by NRES-

28, NRES-22

Moderator: Sara McMillan, Purdue University,

West Lafayette, IN

LOCATION: Coronado T

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461853	Microbial Removal Efficiency within Bioretention Filter Media in Laboratory and Field Environments Jason Vogel, Oklahoma State University, Stillwater, OK (J. Vogel, S. Youngblood-Johnston, D. Griffin, G. Brown, D. Storm)
2:50PM	162462914	Improving Drainage System Design in Bioretention Areas for Optimal Performance Michelle Wood-Ramirez, Texas A&M University, Dallas, TX (M. Wood-Ramirez, F.H. Jaber)
3:05PM	162461553	Investigating the Environmental-adapting Capacity of Permeable Pavements: Experimental Design Paul Davidson, University of Illinois, Urbana, IL (L. Chen, P. Davidson)

TUESDAY, JULY 19

3:20PM	162461345	Pervious Concrete Long-term Clogging Trends and Evaluation of Cleaning Methods to Restore Infiltration Rate Alex McLemore, Oklahoma State University, Stillwater, OK (A. McLemore, J. Vogel, L. Montefiore)
3:35PM		Break
3:45PM	162460725	Monitoring hydrologic performance of green infrastructure projects in St. Louis, MO Derek Schlea, LimnoTech, Ann Arbor, MI (D. Schlea, S. Bell)
4:00PM	162462803	Watershed-scale evaluation of flood reduction effects of low impact development Laurent Ahiablame, South Dakota State University, Brookings, SD (L. Ahiablame, R. Shakya)
4:30PM	162462045	Comparison of SWAT Predictions with Stream Biological Integrity Observations in an Agricultural Watershed Hubert Montas, University of Maryland, College Park, MD (J. Renkenberger, H. Montas, P. Leisnham, V. Chanse, A. Shirmohammadi, A. Sadeghi, K. Brubaker, A. Rockler, T. Hutson, D. Lansing)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 247

PM2.5, VOC, AND OTHER EMISSION FACTORS FOR THE LIVESTOCK AND POULTRY INDUSTRY – Sponsored by PAFS-50

Moderator: Calvin Parnell, Texas A&M University, College Station, TX

LOCATION: Fiesta 3

Time	Paper #	Title/Authors
2:30PM		Introduction -
2:35PM	162461589	Characteristics of Particulate Matter Emissions from Animal Facilities in the United States Fei Hu, North Carolina State University, Raleigh, NC (F. Hu, L.W. Wang-Li)
2:50PM	162461607	Spatial and Temporal Variations of Secondary Inorganic PM2.5 in North Carolina Bin Cheng, North Carolina State University, Raleigh, NC (B. Cheng, L.W. Wang-Li)
3:05PM	162461601	Spatial and Temporal Variations of Secondary Inorganic PM2.5 Precursor Gases in North Carolina Yijia Zhao, North Carolina State University, Raleigh, NC (Y. Zhao, L.W. Wang-Li)
3:20PM	162448023	Alternative wet scrubber design for removing particulate matter from poultry house ventilation fans Collin C. Craige, Oklahoma State University, Stillwater, OK (C.C. Craige, M. Buser, H. Li, P. Moore, B. Eugene)
3:35PM		Break
3:45PM	162459680	Modeling emissions of volatile organic compounds from silage storages and feed lanes Henry F. Bonifacio, USDA-ARS PSWMRU, University Park, PA (H.F. Bonifacio, C. Rotz, M. Cohen, F. Mitloehner, F. Montes)
4:00PM	162460949	Contribution of Kansas pasture burning to ambient ozone: a combination of receptor modeling, time series and regression analysis Zifei Liu, Kansas State University, Manhattan, KS (Z. Liu, Y. Liu)
4:15PM	162462016	Experimental study of decreasing indoor PM2.5 concentration with fine water spray Zesen Zhu, Nanjing Forestry University, Nanjing, China (J. Wang, J. LIU, Z. Zhu, H. Lin, L. Xu)

Tuesday, July 19 - 2:30PM - 5:15PM

SESSION 248

ANIMAL RESPONSE TO ENVIRONMENT – Sponsored by PAFS-40

Moderator: Joseph Darrington, South Dakota State University, Brookings, SD

LOCATION: Fiesta 4

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461217	Interaction of mixed eggs in different development stages: hatch time and chick quality Zhentao Zhong, College of Biosystems Engineering and Food Science, Zhejiang University, HANGZHOU, China (Z. Zhong, S. Jin, Y. Yu, J. Pan)
2:50PM	162458833	Radiant Flux Preferences of Neonatal Broiler Chicks during Brooding John Linhoss, Mississippi State University, Starkville, MS (J. Linhoss, J.L. Purswell, J.D. Davis)
3:05PM	162458221	Activity Levels of W-36 Pullets under Light-Emitting Diode (LED) vs. Compact Fluorescent (CF) Lights Kai Liu, Iowa State University, Ames, IA (K. Liu, H. Xin, P. Settar)
3:20PM	162449936	Development of a Spatial and Temporal Thermal Environment Sensor Array and Network Brett C. Ramirez, Iowa State University, Ames, IA (B.C. Ramirez, Y. Gao, S.J. Hoff)
3:35PM		Break
3:45PM	162460198	Design of a Portable Two-Step Gas Euthanasia System for Piglets Weichao Zheng, University of Illinois, Urbana, IL, United States (W. Zheng, R.S. Gates, K. Oliveira Rocha, Y. Xiong)
4:00PM	162462138	Modeling dairy cow thermoregulation during warm and hot environmental conditions 1: Model development Chad Nelson, University of Minnesota, Owatonna, MN (C. Nelson, K.A. Janni)
4:15PM	162462140	Modeling dairy cow thermoregulation during warm and hot environmental conditions 2: Model application Kevin A. Janni, University of Minnesota, Owatonna, MN (K.A. Janni, C. Nelson, B.J. Heins)
4:30PM	162460267	Implementation and testing of an active RFID tracking system for monitoring and understanding finishing swine activity and space utilization Brian L. Barnes, University of Nebraska-Lincoln, Lincoln, NE (B.L. Barnes, D. Keshwani, T.B. Brandl, D. Dam)
4:45PM	162461664	Feeding Behaviors of Individual Hens in an Enriched Colony Measured with UHF RFID System Hongwei Xin, Department of Agricultural and Biosystems Engineering Iowa state university, Ames, IA (H. Xin, J.L. Oliveira, H. Xin)
4:45PM	162458171	Effect of auditory enrichment music in the pregnant sows welfare Kesia O. Miranda, Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, Brazil (K.O. Miranda, F.S. da Silva, B.d. Possagnolo, I.C. Condotta, T.B. Brandl)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 249

BIOLOGICAL ENGINEERING POSTER SESSION – Sponsored by PRS, ASE

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
98	162460534	Life Cycle Assessment (LCA) and Techno-Economic Analysis (TEA) of Corn Stover Size Reduction Kurt Rosentrater, Iowa State University, Ames, IA (X. Cao, K. Rosentrater)

- 99 162432797 **Biogas reforming over Ni-based bimodal pore catalyst**
Fei Yu, Mississippi State University, Mississippi State, MS (Z. Bao, Y. Lu, Y. Li, F. Yu)
- 100 162461813 **Quantification of fermentation levels in cocoa beans using FT-NIR spectroscopy**
Sunoj Shajahan, North Dakota State University, Fargo, ND (S. Shajahan, I. Cannayen, V. R)
- 101 162460555 **New Biodegradable Polymer Synthesis from Soybean Oil Based Epoxide and Carbon Dioxide**
Yusheng Qin, Ohio State University, Wooster, OH (Y. Qin, C. Chang, X. Luo, Y. Li)
- 102 162461401 **Understanding of E. coli Inactivation in Simulated Compost Piles at Different Depths**
Wenlong Cao, UC Davis, Davis, CA (V.K. Vaddella, P. Pandey, W. Cao)
- 103 162460831 **Solid waste management of paunch: a review of available options and potential for recycle to agricultural land**
Diogenes L. Antille, University of Southern Queensland, Toowoomba, Australia (B.K. McCabe, D.L. Antille, C. Baillie)
- 104 162461610 **Pretreatment Effectiveness of Phanerochaete chrysosporium on Switchgrass as a Function of Incubation Time and Pretreatment Pass Number**
Amanda Hickman, University of Kentucky, Lexington, KY (B. Carey, A. Hickman, W. Sympton, S. Nokes)
- 105 162460215 **Cultivation of Duckweed on Anaerobically Digested Dairy Manure for Nutrient Uptake and Macroalgal Biomass Production**
Brian He, University of Idaho, Moscow, ID (K. Kruger, L. Chen, B. He)
- 106 162459973 **Thermophilic Anaerobic Co-digestion of Swine Manure with Cattail**
Bo Zhang, North Carolina A&T State UniversityNorth Carolina A&T State University , Greensboro, NC (B. Zhang, L. Wang, D. Bekoe, A. Shahbazi)
- 107 162459226 **Enzymatic cell wall disruption for the extraction of valuable bio-products from Chlamydomonas reinhardtii**
Chelsea Dixon, Kansas State University, Manhattan, KS (C. Dixon, L. Soto Sierra, L.R. Wilken)
- 108 162457276 **Testing Compost from an Industrial Composter for Bioremediation of Petroleum Hydrocarbon Contaminated Soil**
Mano Krishnapillai, Grenfell Campus, Memorial University of Newfoundland, Corner Brook, Canada (M. Krishnapillai)
- 109 162446266 **Experimental study on loosening depth stability for self-excited vibrating subsoiler**
Li Yang, Chia Agricultural University, Beijing, China (Y. Wang, L. Yang, D. Zhang, B. Yan, K. Li, X. Yin, Q. Liu, T. Cui, Z. Liang, T. Zhang)
- 110 162462897 **Algal Antioxidant Productivity through Nutrient Removal in Aqueous Products of Hydrothermal Liquefaction**
Michael J. Stablein, University of Illinois Urbana Champaign, Champaign, IL, United States (M.J. Stablein)
- 111 162462938 **Adequacy of thermal ambience in silk production sheds with different toppings**
Douglas D. Salgado, Faculty of Science and Engineering - Universidade Estadual Paulista (FCE - UNESP), Tupã, Brazil (D.D. Salgado, P.A. Bustos Mac Lean, D.F. Pereira, P. de Oliveira Neto)
- 112 162458775 **Co-pelletization of torrefied wheat straw and peanut shells: The energy consumption and properties of pellets**
Changbin He, China Agricultural University, Beijing, China (X. Bai, G. Wang, Z. Wang, D. Wang, C. He, H. Wu, W. Liu)
- 113 162432857 **Physical Characteristics and Drying Behavior of Red Oak and Yellow-poplar Components**
Sohrab Rahimi, West Virginia University, Morgantown, WV (S. Rahimi, K. Singh)
- 114 162460762 **Impact of fruit ripening parameters on harvesting efficiency of the wild blueberry harvester**
Salamat Ali, Dalhousie University, NS, Canada, Truro, Canada (S. Ali, Q. Zaman, A. Schumann, c. Udenigwe, A. Farooque)
- 115 162460471 **Design and experiment of combined stalk-stubble breaking and mulching machine in double cropping area of North China**
Qingjie Wang, China Agriculture University, Beijing, China (Q. Wang, C. Liu, J. He, W. Chen, H. Li, X. Wang)
- 116 162461126 **High-speed Photography Analysis on the seed filling process of a Cell Wheel Seed Precision Metering Device**
Cailing Liu, China Agricultural University, Beijing, China (C. Liu)
- 117 162461128 **Effect of the rotating speed of the turbine bade on the performance of precision fertilizer metering device**
Cailing Liu, China Agricultural University, Beijing, China (C. Liu)
- 118 162460584 **Theory Analysis and Test Research on a Cell Wheel Conventional Rice Seed Precision Metering Device for Pluffed Seedlings**
Cailing Liu, China Agricultural University, Beijing, China (C. Liu, Y. li)
- 119 162460590 **Regression Analysis on Sowing Performance of a Cell Wheel Seed Precision Metering Device**
Cailing Liu, China Agricultural University, Beijing, China (C. Liu)
- 120 162461113 **Parameter Optimization of the Core Mechanism of the Super Rice Precision Drill**
Cailing Liu, China Agricultural University, Beijing, China (C. Liu, Y. li, T. Ma)
- 121 162485308 **Chlorophyll a Fluorescence as an Indicator of Vegetable Freshness**
Ya Guo, Xiamen University, Xiamen, China (H. Yan, J. Tan, Y. Guo)
- 122 162485310 **A Kinetic Monte Carlo Simulation of Pulse-Amplitude-Modulated Chlorophyll Fluorescence from Photosystem II of Plant Leaves**
Ya Guo, Xiamen University, Xiamen, MO, China (Y. Xu, V. Lysenko, J. Tan, Y. Guo)
- 123 162499459 **Design, Fabrication, and Applications of Biologically Inspired Microfluidic Devices as Living System Models**
Sunho Park, Chonnam National University, Gwanju, Korea (the Republic of) (S. Park, D. Lee, D. Kim, N. Jeon, J. Chung, J. Kim)
- 124 162462961 **Bioprocessing of Soybean Processing Waste for Bacterial Biocontrol Agents**
Ulalo Chirwa, University of Kentucky, Lexington, KY (U. Chirwa, E. Liu, J. Shi)
- 125 162459959 **Sequential process of citric acid production in sugarcane bagasse and ethanol fermentation from fungal extract**
Reinaldo G. Bastos, UFSCar, Araras, Brazil (R.G. Bastos, H. Franca, G. Silveira)
- 126 162457950 **Lipid productivity in the fed-batch growth of green microalgae from sugarcane vinasse**
Reinaldo G. Bastos, UFSCar, Araras, Brazil (R.G. Bastos, C. Codato, G. Barbosa, M. da Silva)
- 127 162460604 **Study on performance and effect of the ultrafine extinguishing agent**
Wang Shunxi, China Agricultural University, Beijing, China (M. Jiang, K. Peng, C. Liu, W. Shunxi, N. Leng, E. Luo)

TUESDAY, JULY 19

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 250

BIOPROCESS MODELING – Sponsored

by PRS-280

Moderator: Wayne Yuan

LOCATION: Fiesta 8

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162459473	Kinetic modeling and sensitivity analysis of butanol production from xylose by <i>Clostridium Saccharoperbutylacetonicum</i> Quan Zhou, North Carolina State University, Raleigh, NC (Q. Zhou, W. Yuan)
2:50PM	162461020	Kinetic study of methane reforming with carbon dioxide over NiCeMgAl catalyst Zhenghong Bao, Mississippi State University, Starkville, MS (Z. Bao, Y. Lu, Y. Li, F. Yu)
3:05PM	162457304	Distributed preprocessing of corn stover into either a densified liquid or solid fuel: a GIS case study Joshua J. Jackson, University of Kentucky, Salvisa, KY (J.J. Jackson, M.D. Montross)
3:20PM		Break
3:30PM	162455933	Using ArcGIS Hydrologic Modeling and LiDAR Digital Elevation Data to Evaluate Surface Runoff Interception Performance of Riparian Vegetative Filter Strip Buffers in Central Iowa Manish Shrivastav, Iowa State University, Ames, IA (M. Shrivastav)
3:45PM	162462298	Drying kinetics of crambe seeds Rute Q. Faria, Instituto Federal Goiano - IFGoiano, Uru-tai, Brazil (R.Q. Faria, I.R. Teixeira, I.A. Devilla, O. Resende)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 251

PHYSICAL AND CHEMICAL PROPERTIES OF BIORESOURCE PRODUCTS, CO-PRODUCTS AND WASTE PRODUCTS – Sponsored by

PRS-707

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

LOCATION: Fiesta 9

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162461929	Taraxacum kok-saghyz (TK) as a feedstock for natural rubber and other bioproducts David A. Ramirez-Cadavid, The Ohio State University, Wooster, OH (D.A. Ramirez-Cadavid, F. Michel, K. Cornish)
3:05PM	162455602	Efficient Utilization of Energy Biomass in Bio refineries: Physical and Bulk Flow Characterization Kaliramesh Siliveru, Kansas State University, Manhattan, KS (K. Siliveru, Y. Guragain, P. Vadlani, K. Ambrose)
3:20PM	162449664	Level of Sensing for Biomass Dryer Control and Optimization Christopher Lanning, Forest Concepts, Auburn, WA (C. Lanning)
3:35PM		Break
3:45PM	162460194	Physicochemical and functional properties of Proso millet starch Manjot Singh, University of Kentucky, Lexington, KY (M. Singh, A.A. Adedeji)
4:00PM	162458679	Effect of high pressure processing on physical and nutritional properties of brown rice Fang Pan, Zhejiang University, Hangzhou, China (F. Pan, Y. Zhan, S. Zhu, Y. Yu)

4:15PM

162457275

Application of high pressure processing on fast-growing Chinese fir

Wei Sun, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (W. Sun, J. Li, Y. Yu, S. Zhu)

Tuesday, July 19 - 2:30PM - 5:00PM

SESSION 252

TECHNICAL TRENDS AND CAREER OPPORTUNITY IN THE U.S. AND KOREA - INVITED SPEAKERS

– Sponsored by AKABFE, P-2050

Moderator: Seung-Chul Yoon, USDA-ARS, Athens, GA

LOCATION: Cancun

Time	Paper #	Title/Authors
2:30PM		Introduction
2:35PM	162521339	Past, Present and Future of the AKABFE Christopher Choi, University of Wisconsin, Madison, WI (C. Choi)
2:50PM	162521342	International Research Collaboration between Korea and US - Detection of Apple Marssonina Blotch Disease Won Suk (Daniel) Lee, Univ of Florida, Gainesville, FL (W. Lee)
3:05PM	162521343	Recent Progress of Agricultural Machinery in Korea Chang Hyun Choi, Sung Kyun Kwan Univ, Suwon Gyeonggi-Do, Korea (the Democratic People's Republic of) (C. Choi)
3:20PM	162521344	Future Directions of the AKABFE Symposium Bosoon Park, USDA, ARS, Athens, GA (B. Park)
3:35PM		Panel Discussion
4:05PM		AKABFE Annual Report and Discussion

WEDNESDAY, JULY 20

TECHNICAL PROGRAM

Wednesday, July 20

7:30AM - 10:15AM and 10:15AM - 12:15PM

The purpose of these sessions is the open exchange of ideas, therefore, remarks made by a participant or member of the audience cannot be quoted or attributed to either the individual or the individuals' company. No recording of the participants' remarks or discussion is permitted. Pictures of any material shown here are not permitted.

In respect for the presenters and the people attending the conference, ASABE would request that anyone having a pager, cell phone, or other electronic device please turn them off. If your situation does not allow for these devices to be turned off, please reseat yourself close to an exit such that everyone can benefit from the information presented here without disruption.

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 301

AGRICULTURAL SUSTAINABILITY PROGRAMS: EXISTING AND EMERGING INITIATIVES – Sponsored by ASE-16

Moderator: Marty Matlock,

LOCATION: Fiesta 5

Agricultural sustainability initiatives are emerging around the world, ranging from very local and specialized certification protocols to broad sweeping global initiatives for entire sectors of production. A roundtable will follow this program to compare and contrast goals, approaches, and outcomes of these initiatives.

	Time	Paper #	Title/Authors
	7:30AM		Introduction
	7:35AM	162380855	Coexistence of Biotech and Organic/NonGMO crops: USDA AC21 and Sustainability Standards Thomas P. Redick, GEEC LLC, Clayton, MO (T.P. Redick)
	8:00AM	162540246	Development of a Multi-Stakeholder Sustainability Program for US Poultry Paul Bredwell, US Poultry, Tucker, GA (P. Bredwell)
	8:25AM	162540249	Indicator and Metric Development for The US Roundtable for Sustainable Beef Benjamin Weinheimer, Texas Cattle Feeders Association, Amarillo, TX (B. Weinheimer)
	8:50AM	162540254	Sustainability Indicators, Metrics and Continuous Improvement in US Pork Allan Stokes, National Pork Board, Clive, IA (A. Stokes)
	9:15AM	162540255	Sustainability from an Industry Perspective: Why we care Kimberly Stackhouse, Sustainability JBS USA, Greeley, CO (K. Stackhouse)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 302

APPLIED SCIENCE AND ENGINEERING POSTER SESSION – Sponsored by ASE

Moderator: Jeff Catchmark

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
1	162460640	Surface Plasmon Resonance on Metal-Coated Optical Discs for Antibacterial Application Shih-Fang Chen, National Taiwan University, Taipei, Taiwan (S. Chen, B. Cheng, C. Chu, Y. Chan, H. Wu, H. Xu, Y. Li, M. Hsiao, D. Tsai)
2	162460632	Design of a Specific Crusher of Forage Changbin He, China Agricultural University, Beijing, China (Q. Chan, G. Wang, D. Wang, Z. Wang, C. He, G. He, H. Wu, D. Tang)
3	162459608	Physical and chemical properties of non-treated and torrefied wheat straw grinds Changbin He, China Agricultural University, Beijing, China (X. Bai, G. Wang, Z. Wang, D. Wang, C. He)
4	162455416	Effects of seeds morphology on pressure distribution in the cone hole of a pneumatic seed-metering device based on CFD Dongxing Zhang, China Agricultural University, Beijing, China (D. Han, X. Yin, K. Li, D. Zhang, L. Yang, Z. Qu, M. Wang, D. Zhao, T. Cui, Q. Liu, B. Yan)
5	162455410	Evaluation and change research on the quality of cultivated land based on multispectral remote sensing data Ping Xia, University, HeFei, China (P. Xia)
6	162435912	Design and Development of National Soil Moisture Monitoring Network of China Shirui Zhang, Beijing Research Center for Information Technology in Agriculture, Beijing, China (H. Li, S. Zhang, W. Zheng)
7	162462699	Effect of maple tree biochar in the removal of nonylphenol and heavy metals in waste water irrigated soils Shiv Prasher, McGill University, Saint Anne de Bellevue, Canada (E. ElSayed, S. Prasher)
8	162462393	Effects of water retention on previously drained ranchlands on surface flows and nutrient loads in the Northern Everglades Niroj K. Shrestha, University of Florida, Immokalee, FL (N.K. Shrestha, S. Shukla, C. Wu, P. Inglett, W. Graham)
9	162461949	Effect of Different Time and Power of Low-temperature Helium Plasma on Germination Characteristics of maize(Zea mays L.) Changbin He, College of Engineering, China Agricultural University, Beijing, China (J. Feng, A. Pang, D. Wang, G. Wang, L. Liu, C. Shao, C. He)
10	162461898	Process research of forming round bale in logarithmic spiral round baler chamber based on EDEM Changbin He, China Agricultural University, Beijing, China (H. Wu, D. Wang, G. Wang, z. gong, x. zhang, X. Bai, C. He, C. Kang)
11	162461801	STRIDER: Semi-Autonomous Tracking Robot with Instrumentation for Data-acquisition and Environmental Research Abbas H. Diab, University of Maryland Eastern Shore, Salisbury, MD (A.H. Diab, A. Nagchaudhuri, P. Matin, L. Zhang, R. Joshi, C. Hartman)
12	162461738	Performance of a membrane-based irrigation system for different evaporative conditions Valeria A. Lima, The University of New South Wales, Sydney, Australia (V.A. Lima, P. Le-Clech, G. Leslie, B. Sutton)
13	162461693	AgroClimate Chill Monitoring Tools: Gridded Map Tool vs. Station Tool Xiaozhen Shen, University of Florida, Gainesville, FL (X. Shen, C. Fraisse, O. Uryasev, C.G. Staub, D. Dantas, E. Gelcer, A.P. Wagner)

WEDNESDAY, JULY 20

- | | |
|--|--|
| <p>14 162461428 The effect of system parameters on the biogas production from anaerobic digestion of livestock wastes
Nanh Lovanh, USDA-ARS Bowling Green, KY (N. Lovanh, G. Ruiz-Aguilar, J. Loughrin)</p> <p>15 162461300 Identifying and Ranking of Factors Influencing Spray Drift: from a Semi-Field Scale Spray Drift Wind Tunnel
Kevin Wright, Waterborne Environmental, Champaign, IL (K. Wright, R. Gali, D. Perkins)</p> <p>16 162461248 Application of Internet of Things in Facility Agriculture
Beijing Academy of Agriculture and Forestry Science, Beijing, China, Beijing, China (W. Jia, L. Pan, J. Wang)</p> <p>17 162461244 Advance on application of hyperspectral imaging to nondestructive detection of crop seeds quality
Diyun Huang, college of Mechanical and Electrical Engineering, Shihezi University, Shi Hezi, China (D. Huang)</p> <p>18 162461237 Application of Automatics in Environment Control of Facility Agriculture
Mengnan Li, Beijing Academy of Agriculture and Forestry Science, Beijing 100097, China, Beijing, China (M. Li, J. Ma, W. Jia)</p> <p>19 162461223 Electronic-Nose Application for Fruit Identification by Artificial Neural Network Algorithm
Cihui Wan, Department of Beijing Research Center for Agricultural Standards and Testing, Beijing, China (C. Wan, W. Jia, L. Pan, J. Wang, T. Jiang)</p> <p>20 162461160 The design of the key parts of the machine for juicing from fresh corn stover
Changbin He, China Agricultural University, Beijing, China (J. Fu, G. Wang, D. Wang, G. He, S. Li, D. Tang, Q. Chan, X. Rong, C. He)</p> <p>21 162461157 Unmanned Aerial Vehicle (UAV) assisted water sampling
Cengiz Koparan, Clemson University, Clemson, SC (C. Koparan, A.B. Koc)</p> <p>22 162461118 Influences of Processing Time, Temperature and Material Particle Size on Gelatinization Degree of Corn
Qingqing Li, China Agricultural University, Beijing, China (Q. Li)</p> <p>23 162461107 Achievements of Fresh keeping Techniques of Grapes
Qingqing Li, China Agricultural University, Beijing, China (Q. Li)</p> <p>24 162461086 Microwire immune-biosensor for the detection of E. coli in food materials
Byoung-Kwan Cho, Chungnam National University, Daejeon, Korea (the Republic of) (H. Min, J. Lim, J. Yasmin, S. Jun, B. Cho)</p> <p>25 162461084 Characterization of Waste Biomass for Adsorption
Brianna J. Hess, North Carolina State Univ, Raleigh, NC (B.J. Hess, P. Kolar)</p> <p>26 162460993 Optimizing organic waste ratios for biogas generation from a food processing units
Nicholas Kiggundu, Makerere University, Kampala, Uganda (N. Kiggundu)</p> <p>27 162460965 Numerical simulation and optimization of the gas-liquid flow in an airlift loop reactor with population balance model
Juan Wang, China University of Petroleum, Beijing, Beijing, China (J. Wang, J. Zuo, Z. Gao, L. Feng)</p> <p>28 162460664 Estimation of Irrigation Crop Water Use of Organic Vegetables (tomato and peppers) grown in High Tunnels
Duncan M. Muchoki, University of Tennessee, Knoxville, TN (D.M. Muchoki)</p> <p>29 162460648 Research on Phase Composition and Hardness of Laser Cladding SiC_Ni Coating
Xu Wang, College of Engineering, China Agricultural University, Beijing, China (Y. Zheng, X. Wang, Y. Xu)</p> <p>30 162461080 Analysis of application status and development trend of superfine grinding technology
Cailing Liu, China Agricultural University, Beijing, China (R. Wang, C. Liu, W. Shunxi)</p> | <p>31 162461076 Simulation and analysis of seed cotton and plastic mulch remnant separator on cotton picker under varied porosities
Ruoyu Zhang, Shihezi University, Shihezi, China (H. Chu, R. Zhang, Y. Qi)</p> <p>32 162461066 Research progress of low temperature crushing
Cailing Liu, Agricultural university, Beijing, China (S. Shan, C. Liu)</p> <p>33 162460564 The Mechanical Structure Optimization of Self-propelled Pushing-forage Robot's Frame
Yu Tan, College of Engineering, China Agricultural University, Beijing, China (Y. Tan, S. Liang, G. Wu, S. Li, X. Liu)</p> <p>34 162460366 Response of Tropical Maize to Supplemental Irrigation Strategies
Axel Garcia y Garcia, University of Minnesota Cropping Systems, Lamberton, MN (P.P. Silva, C.L. Andrade, J.C. Borges Junior, B.G. Magalhães, B.F. Melo, A. Garcia y Garcia)</p> <p>35 162460340 Rain induced fruit cracking prevention chemicals washout evaluation from sweet cherry fruits for the precision re-applications
Jianfeng Zhou, Center for Precision and Automated Agricultural Systems, Washington State University, Prosser, WA (L.R. Khot, J. Zhou, G.K. Kafle, H. Bahlol)</p> <p>36 162460629 Design of drum-type biomass pellet burner
Changbin He, China Agricultural University, Beijing, China (X. Rong, D. Wang, C. He, J. Fu)</p> <p>37 162460222 Management Strategies to Mitigate the Effect Water Stress on Off-Season Maize
Axel Garcia y Garcia, University of Minnesota Cropping Systems, Lamberton, MN (B.G. Magalhães, C.L. Andrade, P.P. Silva, D.d. Lopes, B.F. Melo, A. Garcia y Garcia)</p> <p>38 162460069 Analysis of characteristics and quality of hot air drying edible fungus
Changbin He, China Agricultural University, Beijing, China (Q. Sun, S. Li, X. Bai, J. Fu, G. Wang, D. Meng, C. He)</p> <p>39 162460059 Photoelectrochemical treatment of ammonia for recirculating aquaculture saline water
Chan Lu, Institution of Agricultural Bio-Environmental Engineering, Hangzhou, China (C. Lu, K. Wu, X. Guo, S. Zhu)</p> <p>40 162460037 The Design of a Kind Of Mobile Press Block Machine
Changbin He, China Agricultural University, Beijing, China (Y. YU, G. He, G. Wang, D. Wang, Z. Wang, C. He)</p> <p>41 162458786 Design of key components of garlic combine harvester
Changbin He, China Agricultural University, Beijing, China (Q. Sun, G. He, Z. Wang, D. Wang, G. Wang, Q. Chan, C. He)</p> <p>42 162452483 A polyelectrolyte-based system for separating charged particulates from aqueous biological suspensions.
Varun M. Gejji, Texas A&M University, College Station, TX (V.M. Gejji, S.D. Fernando)</p> <p>43 162414845 Guayule biomass and rubber yield under variable water inputs using flood and sub-surface drip irrigation
Diaa Eldin M. Elshikha, USDA-ARS, Arid Land Agricultural Research Center, Maricopa, AZ, United States (D. Hunsaker, D.M. Elshikha)</p> <p>44 162432640 Ethanol Production from Glycerol Hydrogenolysis via 1,2-Propanediol as the Intermediate
Brian He, University of Idaho, Moscow, ID (K. Kruger, K. Duff, B. He)</p> <p>45 162403819 Application of Eddy Covariance technique to improve water use efficiency and grape quality in Washington
Hossein Sadeghi, Washington State University, Pullman, WA (H. Sadeghi, P.W. Jacoby, H. Liu, S. Pressley, J. Chi, P. O'Keeffe, B. Lamb)</p> |
|--|--|

WEDNESDAY, JULY 20

46	162462944	Effect of storage and activation time of effluent on microbial community and biogas production of SSAD Xiaoyan Gong, The Ohio State University, Wooster, OH (X. Gong, F. Xu, Y. Li)
47	162460928	Gypsum-Based Composites with Addition of Endo-carp from Baru (<i>Dipteryx alata</i>) and Sawdust Maria C. Oliveira, Universidade Federal de Mato Grosso, Ames, IA (M.C. Oliveira, C.E. Oliveira, J.L. Oliveira, F.A. Damasceno, N.C. Alves, L.A. Bezerra)
48	162461116	Environmental Implications of Rice Farming Systems based on Life Cycle Assessmen Solhee Kim, Seoul National University, Seoul, Korea (the Republic of) (S. Kim, K. Suh)
49	162494313	Extract of <i>Ganoderma formosanum</i> Mycelium as a Highly Potent Tyrosinase Inhibitor Kai-Di Hsu, National Taiwan University, Taipei, Taiwan (K. Hsu, K. Cheng, C. Lum)
50	162461181	High Power Wildrye Crusher Qixin Chan, China Agricultural University, Beijing, China (Q. Chan, G. Wang, D. Wang)
51	162460288	Value addition to carrot residues using microwave-assisted fluidized-bed drying method Xue Hu, McGill University, Montreal, Canada (X. Hu, Y. Gariepy, J. Kurian, V. Raghavan)
52	162457633	Discussion on Research Methods of Crop Root Ping Song, Shenyang Agricultural University, ShenYang, China (P. Sonmg, T. Yang, H. Gao)
53	162455394	An Experimental Research of Parameters of Energy and Power when Breaking the Shell of the Nut ChengMao Cao, University, HeFei, China (C. Cao)
54	162446519	Performance evaluation of toothed chain pulling device on cotton stalks with different soil moistures Guozhong Zhang, Huazhong Agricultural University, Wuhan, China (G. Zhang)
55	162462239	Motion simulation of D-bale knotter based on reverse engineering and mechanical analysis of bill hook Mengting Zhou, China Agricultural University, Beijing, China (M. Zhou)
56	162461856	Physiological Quality of Conventional and Transgenic Soyeans Seeds Under the Different Drying Conditions Amanda R. Santos, Instituto Federal Goiano, Urutaí, Brazil (A.R. Santos, R.Q. Faria, Á.D. Cardoso)
57	162461037	An Optimization Design of Forage Grass Ring-die Pelletizing Machine Guanghai Wang, China Agricultural University, Beijing, China (D. Tang, G. Wang, D. Wang, C. He, G. He, J. Fu, Q. Chan)
58	162460057	Experimental study on vibration performance of CA2060H chain-and-slat type spout based on Lab-VIEW Guozhong Zhang, Huazhong Agricultural University, Wuhan, China (G. Zhang, Z. Lei, K. Lu, k. zhai)
59	162391705	Solid state fermentation: a technological alternative for enriching bioavailability of underutilized crops based composite flour Anupama Singh, GB Pant University of Agriculture and Technology, Pantnagar, India (A. Singh)
60	162470861	Determination of IDF Curve for South-Western Nigeria from Robust Estimation Method Temitayo A. Ewemoje, University of Ibadan, Ibadan, Nigeria (T.A. Ewemoje, O.E. Ewemoje)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 303

ENERGY EFFICIENCY AND USE IN AGRICULTURAL FACILITIES

Sponsored by ES-300

Moderator:

LOCATION: Coronado B

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162457013	Modeling Energy Balance and Airflow Characteristics in a Naturally Ventilated High Tunnel Muzi Zheng, University of Tennessee, Knoxville, TN (M. Zheng)
7:50AM	162430300	CFD modeling for design improvement of the typical-slope greenhouse in Costa Rica Jorge Flores, Instituto Mexicano de Tecnología del Agua, Jiutepec, Mexico (J. Flores, A. Rojas, W. Ojeda, A. Rojano)
8:05AM	162463315	Energy Efficiency in Cotton Ginning Robert G. Hardin, USDA-ARS, Stoneville, MS (R.G. Hardin, P.A. Funk)
8:20AM	162462962	Cooled Surface Area and Energy Use in Conductive Cooling Systems for Dairy Cattle Kristen Perano, Cornell University, Ithaca, NY (K. Perano, K.G. Gebremedhin)
8:35AM	162378601	New Essential oil distillation system – Design and construction Scott Sanford, University of Wisconsin, Madison, WI (S. Sanford, D. Bohnhoff)
8:50AM	162460743	Development of conventional solar dryer for drying agricultural products in the region Rondonópolis Nahyara B. Galle, Federal University of Mato Grosso, Rondonópolis, Brazil (N.B. Galle, A. Salgado, N.C. Alves, M.T. Oliveira, A.d. Vilela)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 304

VALUE-ADDED CHEMICALS AND PRODUCTS FROM BIOMASS

– Sponsored by ES-220

Moderator: Sushil Adhikari, Auburn University, Auburn, AL

LOCATION: Coronado C

Time	Paper #	Title/Authors
7:30AM		Introduction -
7:35AM	162454776	Biosynthesis of monomers for bio-based plastics from glycerol Ali Abghari, Washington State University, Pullman, WA (A. Abghari, S. Chen)
7:50AM	162462002	Substitution of Phenol with Bio-Oil in the Production of Phenol Formaldehyde Resin Zhouhong Wang, Auburn University, Auburn, AL (Z. Wang, S. Adhikari, M. Auad, M. Barde, M. McDonald)
8:05AM	162462811	Catalytic oxidation of lignin in ionic liquids lalitendu das, University of Kentucky, Lexington, KY (I. das, J. Shi)
8:20AM	162461633	Effects of pre-storage concentration and acidification, and post-storage conditioning of non-purified beet juice on yeast (<i>Saccharomyces cerevisiae</i>) fermentation Juan M. Vargas-Ramirez, North Dakota State University, Fargo, ND (J.M. Vargas-Ramirez, D. Wiesenborn, S.W. Pryor)
8:35AM	162457391	NaOH-impregnated oyster shell as a solid base catalyst for transesterification of soybean oil Han Jin, North Carolina State University, Raleigh, NC (H. Jin, P. Kolar)

WEDNESDAY, JULY 20

8:50AM	162461846	Combinatorial metabolic engineering of <i>Yarrowia lipolytica</i> for production of sugar based bio-oil Ali Abghari, Washington State University, Pullman, WA (A. Abghari, Y. Meng, S. Chen)
9:05AM	162461191	Progress in direct seeded establishment of an alternative natural rubber plant-<i>Taraxacum kok-saghyz</i> (TK) Ajay Shah, Ohio State University, Wooster, OH (A. Shah, H. Keener, M. Klingman, S. Wolfe, R. Fioritto, D. Pote)
9:20AM	162432649	Metabolic Engineering of <i>Saccharomyces Cerevisiae</i> to Produce Long Chain and Medium Chain Fatty Alcohols Joseph C. Stevens, Virginia Tech, Blacksburg, VA (J.C. Stevens, J. Sheng, X. Feng)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 305

ADVANCED COMPUTATIONAL APPROACHES FOR SOLVING AGRICULTURAL AND BIOLOGICAL ENGINEERING PROBLEMS - PART 3

– Sponsored by ITSC-217, ITSC-254
Moderator: Kelly Thorp

LOCATION: Coronado D

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162459942	Temperature Inversions, Freezing Temperatures, and Prediction Jonathan Gramann, AgWeatherNet, Prosser, WA (J. Gramann, M. Salazar-G., S. Hill, T. Ghidry, G. Hoogenboom)
7:50AM	162460721	Modeling to understand the seasonality effect on leafy greens related disease outbreaks Abhinav Mishra, University of Maryland, College Park, MD (A. Mishra, A. Pradhan)
8:05AM	162420443	Applying Transmission-line Modeling (TLM) Method to Bio-energetics of Endotherm Hugo F. Milan, Cornell University, Ithaca, NY (H.F. Milan, K.G. Gebremedhin)
8:20AM	162462640	Comparison of performance of various regular and hybrid evolutionary algorithms in solving single and multivariable optimization problems Jaya S. Tumuluru, Idaho National Laboratory, Idaho Falls, ID (J.S. Tumuluru, R. McCulloch)
8:35AM	162462095	CyberGIS-enabled farm management optimization Tao Lin, University of Illinois at Urbana-Champaign, Urbana, IL (T. Lin, L.F. Rodriguez, S. Wang, H. Hu, W. Liao)
8:50AM	162461641	Robust Estimation of Field Management Zones Using Multi-Year Yield Data and a Hidden Markov Random Field Yang Wang, Purdue University, West Lafayette, IN (A.W. Layton, Y. Wang, J.V. Krogmeier, D. Buckmaster)
9:05AM	162460018	Qualitative and quantitative analysis of Chinese pecans (<i>Carya cathayensis</i>) during storage using MOS E-nose combined with chemometrics methods Shui Jiang, Zhejiang University, Hangzhou City, China (S. Jiang, J. Wang, S. Cheng, Y. Wang)
9:20AM	162430367	The research of near infrared spectral peak detection methods in big data era Dengfei Jie, College of Engineering & Technology, Huazhong Agricultural University, Wuhan, China (W. Zhou, J. Zhang, D. Jie)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 306

HYPERSPECTRAL IMAGING APPLICATIONS (FOOD SAFETY, FOOD QUALITY, FRUITS AND VEGETABLES PROCESSING)

– Sponsored by ITSC-348

Moderators: Haiyan Cen, Hangzhou, China
Seung-Chul Yoon, USDA-ARS, Athens, GA

LOCATION: Coronado E

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162462364	Hyperspectral microscopy to identify foodborne bacteria with optimum lighting source Bosoon Park, USDA, ARS, Athens, GA (M. Eady, B. Park, S. Yoon, K.C. Lawrence, G. Gary)
7:50AM	162460422	Early Detection and Classification of Tobacco Leaves Inoculated with Tobacco Mosaic Virus Based on Hyperspectral Imaging Technique Hongyan Zhu, Zhejiang University, Hangzhou, China (H. Zhu, H. Cen, C. Zhang, Y. He)
8:05AM	162457020	Multispectral imaging for early rottenness detection in citrus fruit Jiangbo Li, Beijing Research Center of Intelligent Equipment for Agriculture, Beijing, China (J. Li)
8:20AM	162461554	Pair-wise Hyperspectral Band Selection for Apple <i>Marssonina Blotch</i> Detection Won Suk (Daniel) Lee, University of Florida, Gainesville, FL (M. Shuaibu, W. Lee, Y. Hong, S. Kim)
8:35AM	162461092	Detection of surface defects on processing tomatoes by hyperspectral imaging Ruoyu Zhang, Shihzei University, Shihezi, China (Y. Qi, Y. Ma, R. Zhang)
8:50AM	162460613	Early detection of mechanical damage in Chinese winter jujube (<i>Zizyphus jujuba</i> Mill. cv. Dongzao) using NIR hyperspectral images Longsheng Fu, Northwest A&F University, Yangling, China (S. Sun, R. Li, L. Fu)
9:05AM	162461297	Imaging Technology for Rapid and Objective Detection of White Striping Condition on Poultry Meat Seung-Chul Yoon, USDA-ARS, Athens, GA (S. Yoon, B.C. Bowker, M. Landrum, G.W. Heitschmidt, G. Pesti)
9:20AM	162461459	Use of near-infrared hyperspectral imaging to visualize saturated, monounsaturated, and polyunsaturated fatty acids distribution in fish fillets Felfei Tao, McGill University, Montreal, Canada (F. Tao, O. Mba, L. Liu, M. Ngadi)
9:35AM	162461047	Detection method of lettuce roots frost damage based on the hyperspectral imaging technology Yongni Shao, Zhejiang University, Hangzhou, China (h. Zhou, Y. Shao)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 307

MACHINE VISION FOR PRECISION AGRICULTURE

– Sponsored by ITSC-312
Moderator: Alireza Pourreza, University of Florida, Gainesville, FL

LOCATION: Coronado F

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162456281	Pulsed Phase Thermography for Immature Citrus Fruit Detection Hao Gan, University of Florida, Gainesville, FL (H. Gan, W. Lee, V. Alchanatis)

WEDNESDAY, JULY 20

7:50AM	162461291	CROP STAND COUNTING AND PLANTING PERFORMANCE EVALUATION USING UAS IMAGERY Alimohammad Shirzadifar, North Dakota State University, Fargo, ND (A. Shirzadifar, M. Maharlooeei, S. Bajwa, J. Nowatzki, O. Hassanijalilian, S. Sivarajan)
8:05AM	162460971	Performance Evaluation of Image Transmission over Wireless Sensor Network for Precision Agriculture Fernando Rojas-Marta, Tecnológico de Monterrey, Chihuahua, Mexico (C. Lozoya, F. Rojas-Marta, C. Rodríguez-Esqueda, J. Estrada-Ortega)
8:20AM	162435524	Comparison of feature-based keypoint detection algorithms for computer-vision motion-estimation of agricultural platforms Trevor P. Stanhope, McGill University, L'ile-Perrot, Canada (T.P. Stanhope)
8:35AM	162460183	Rating Iron Deficiency Chlorosis Using Image Processing Technique Oveis Hassanijalilian, North Dakota State University, Fargo, ND (O. Hassanijalilian, A. Shirzadifar, M. Maharlooeei, S. Sivarajan, S. Bajwa, J. Nowatzki, H. Kandel, T. Helms)
8:50AM	162459749	Image Processing Tool for Wool Fiber Grading using ImageJ Ighathinathane Cannayen, North Dakota State University, Fargo, ND (I. Cannayen, C. Schauer, R. Redden)
9:05AM	162460542	Background Image and Noise Analysis by a Thermal Imaging and Vocalization Monitoring System for Piglets Stress Study Ching-Lu Hsieh, National Pingtung University of Science and Technology, Pingtung, Taiwan (C. HSIEH, J. Hsieh)
9:20AM	162460435	Acquisition and Modeling Analysis for the Optical Properties of Maize Leaves Xuzhou Zhang, ZheJiang University, Hangzhou, China (X. Zhang, H. Fang)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 308

BIOSENSORS AND BIOELECTRONICS - PART 1

— Sponsored by ITSC-230

Moderator: Zach Callaway

LOCATION: Coronado G

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461403	A magnetophoretic system for continuous-flow immunoseparation of avian influenza virus Yuhe Wang, Agricultural Information Acquisition Technology Key Lab of Ministry of Agriculture of China, China Agricultural University, BEIJING, AR, China (Y. Wang, M. Wang, J. Lin, Y. Li)
7:50AM	162456648	3D printed micro-mixer for detection of disease-responsive markers Mei He, Kansas State University, Manhattan, KS (M. He)
8:05AM	162462677	Smart-DARTTM: a Low-Cost Portable Platform for Agricultural Diagnostics Daniel M. Jenkins, University of Hawaii, Honolulu, HI (D.M. Jenkins, R. Kubota)
8:20AM	162450689	An aptamer based magnetic separation and fluorescent sensor for rapid and specific detection of acrylamide in thermally processed foods Qinqin Hu, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou 310058, China, Hangzhou, China (Q. Hu, R. Wang, Y. Li)
8:35AM	162460439	A paper based graphene-nanocauliflower hybrid composite for point of care biosensing Diana C. Vanegas, Universidad del Valle, Cali, Colombia (S.L. Burrs, J. Claussen, D.C. Vanegas, E.S. McIlmore)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 309

ADVANCES IN SEEDING & TILLAGE TECHNOLOGY – Sponsored by MS-49

Moderator: Ajay Sharda

LOCATION: Coronado M

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461277	Investigating Planter Row Unit Ride Quality Thresholds Changyuan Zhai, Northwest A&F University, Yangling, OK, China (C. Zhai, J.M. Long, P. Weckler, N. Wang, R. Taylor)
7:50AM	162463079	Real-time gauge wheel load uniformity when using active planter downforce control system Ajay Sharda, Kansas State University, Manhattan, KS (A. Sharda, R. Strasser, D. Flippo, D.L. Mangus, T. Griffin)
8:05AM	162463080	Real-time gauge wheel load variability on planter with downforce control during field operation Ajay Sharda, Kansas State University, Manhattan, KS (A. Sharda, R. Strasser, J. Kulp, D. Flippo, L. Haag, T. Griffin)
8:20AM	162461283	Evaluation of the Effect of Non-Optimum Planting Performances on Crop Establishment Aurelie M. Poncet, Auburn University, Auburn, AL (A.M. Poncet, J.P. Fulton, T.P. McDonald, T. Knappenberger, J. Shaw, K. Balkcom)
8:35AM	162460474	Optimizing The Working Parameters of a Vacuum-Type Precision Metering Unit Using Response Surface Methodology Ceren Komekci, Ege University, Izmir, Turkey (C. Komekci, E. Aykas, F. Komekci)
8:50AM	162460842	Developing a high speed camera hardware and software package to evaluate real-time electric seed meter accuracy of a variable rate planter Devin L. Mangus, Kansas State University, Manhattan, KS (D.L. Mangus, A. Sharda, R. Strasser, D. Flippo, J. Lamphier)
9:05AM	162461324	Application of a Multi Hybrid Planter and Geospatial Data Layer Analysis Method for Optimal Placement of Corn Hybrids and Soybean Seed Treatments Rachel Stevens, University of Nebraska- Lincoln, Lincoln, NE (R. Stevens, J.D. Luck, R. Ferguson, S. Pittla)
9:20AM	162457032	Greedy Algorithm & Fixed Sequence Methods Comparison for Seedlings Lower Density Transplanting Path Planning Junhua Tong, Zhejiang Sci-Tech University, Hangzhou, China (J. Tong, G. Yu, C. Wu)
9:35AM	162460906	Discrete element modelling of narrow point openers to improve soil disturbance characteristics of no-till seeding systems. James Barr, University of South Australia, Mawson Lakes, Australia (J. Barr)
9:50AM	162460429	3D DEM modeling of straw-soil-rotary blade interaction in no-till soil Huimin Fang, Nanjing Agricultural University, Nanjing, China (H. Fang, C. Ji, Q. Zhang, J. Guo)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 310

DRIFT REDUCTION TECHNOLOGY

— Sponsored by MS-23-6

Moderator:

LOCATION: Coronado N

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461726	Measuring Sub-Second Wind Velocity Changes at One Meter above the Ground Matthew Schramm, Iowa State University, Ames, IA (M. Schramm, M. Hanna, B. Steward, M. Darr, S.J. Hoff)

WEDNESDAY, JULY 20

7:50AM	162459709	A Not So-Random Walk with Wind: Evaluating Wind Velocity Update Methods in Ground Based Spray Deposition Models Matthew Schramm, Iowa State University, Ames, IA (M. Schramm, M. Hanna, B. Steward, M. Darr, S.J. Hoff)
8:05AM	162461579	Development of a Soil Drencher System for Delivery of Nutrients and Chemicals to Citrus Tree Roots Mohd Fazly Bin Mail, University of Florida, Winter Haven, FL (M. Mail, S. Sour, H. Zaeri, R. Ehsani)
8:20AM	162461290	Gaps in the science of drift accountancy and impacts on advancement of modelling and drift reduction technologies: bridging the present to the future. Mark A. Ledebuhr, Application Insight, LLC, Lansing, MI (M.A. Ledebuhr, D. Valcore)
8:35AM	162462437	Development of Servo Motor Controlled Thinner and Intra-Row Cleaner Machine For Organic Row Crops Yigit Karabulut, Celal Bayar University, Manisa, Turkey (Y. Karabulut, E. Cakir, I. Aygun)
8:50AM	162460369	Development and feasibility evaluation of HMO-based thermotherapy technique for effective pear psylla management Parish Nalavade, CIAREC, Washington State University, Prosser, WA (P. Nalavade, L.R. Khot, G. Hoheisel, R. Ehsani)
9:05AM	162460358	Smart spray analytical system for orchard sprayer calibration: a-proof-of-concept and preliminary results Haitham Bahlol, Washington State University, Prosser, WA (H. Bahlol, G. Hoheisel, L.R. Khot)
9:20AM	162459624	Detection and characterization of fungicide aerosols drift via open-path FTIR measurements Raphael Linker, Technion - Israel Institute of Technology, Haifa, Israel (O. Kira, R. Linker, Y. Dubowski)
9:35AM	162458206	Sprayer Boom Position Measurement for Automatic Boom Height Controller Evaluation John M. Long, Oklahoma State University, Stillwater, OK (J.M. Long)
9:50AM	162455970	Aerial Spray Nozzle Test in IEA-I High Speed Wind Tunnel Qing Tang, National Research Center of Intelligent Equipment for Agriculture, Beijing, China (Q. Tang, L. Chen, R. Zhang, G. Xu, M. Xu, T. Yi, H. Jiang)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 311

CROP AND SOIL SENSING FOR PRECISION AGRICULTURE

Sponsored by MS-54

Moderator: Lav Khot

LOCATION: Coronado O

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162462208	Integrating remote sensed imagery with in-season nitrogen decisions Sami Khanal, Ohio State University, Columbus, OH (S. Khanal, J.P. Fulton, A.A. Klopfenstein, S. Shearer)
7:50AM	162460881	Detection of Iron and Nitrogen Deficiency in Avocado Using a Multispectral Imaging Technique Jaafar Abdulridha, University of Florida-CREC, Lake Alfred, FL (J. Abdulridha, R. Ehsani, A. Abd-Elrahman, R. Ploetz, J. Konkol)
7:50AM	162462080	NDVI Estimation from Digital Photo Analysis Hunter F. Massey, Clemson University, Clemson, SC (H.F. Massey, K.R. Kirk)
8:05AM	162460947	Validation of a rapid colorimetric method with field soils Sangyoon Lee, Gyeongsang National University, Jinju, Korea (the Republic of) (S. Lee, H. Park, C. Han, G. Kweon)

8:20AM	162460560	Predicting soil properties using a national VNIR library: comparison of modeling techniques and their computational resource use Nuwan K. Wijewardane, University of Nebraska-Lincoln, Lincoln, NE (N.K. Wijewardane, Y. Ge, S. Wills, T. Loecke)
8:35AM	162459870	Inversion of Soil Electrical Conductivity Data to Estimate Layered Soil Properties Kenneth A. Sudduth, USDA-ARS, Columbia, MO (K.A. Sudduth, N. Kitchen, S. Drummond)
8:50AM	162455236	Exploration of a New Sensor Installation Method for Capacitance Type Soil Moisture Sensors Wesley M. Porter, University of Georgia, Tifton, GA (W.M. Porter, S. Barwick, R. Yager)
9:05AM	162447969	Development and Implementation of a Crop Water Stress Index for Peanuts Wesley M. Porter, University of Georgia, Tifton, GA (W.M. Porter, J.L. Snider, W.S. Monfort, C.D. Perry)
9:20AM	162447581	Development of a portable soil sensor system using BeagleBone Black Daniel M. Queiroz, Universidade Federal de Vicosa, Gainesville, FL (D.M. Queiroz, W. Lee, J.K. Schueller)
9:35AM	162436303	Design of an alternative system for CO2 emission measurement in agricultural fields Florian Reumont, McGill University, Ste-Anne-de-Belle-vue, Canada (F. Reumont, V. Adamchuk)

Wednesday, July 20 - 7:15AM - 10:30AM

SESSION 312

HANDLING, PROCESSING AND HARVEST SYSTEMS FOR FORAGES AND BIOMASS FEEDSTOCKS

– Sponsored by MS-23/7/2

Moderator: Jude Liu

LOCATION: Coronado P

Time	Paper #	Title/Authors
7:15AM		Introduction
7:20AM	162462358	Discrete Element Method (DEM) simulation of corn grain flow in commercial screw auger Mohammad Mousaviraad, Iowa State University, Ames, IA (M. Mousaviraad, M. Tekeste, K. Rosentrater)
7:35AM	162458223	Fractionation of Corn Stover using a lab-scale rotating drum Jiechao (Simon) Ma, Purdue University, West Lafayette, IN (J. Ma, D. Buckmaster)
7:50AM	162459583	Design and test of the device forming grass-braid driven by diesel or electricity Changbin He, College of Engineering, China Agricultural University, Beijing, China (S. Li, G. Wang, D. Wang, J. Fu, C. He, J. Feng, Q. Sun, Y. YU)
8:05AM	162460402	Simulation and Optimization of Recompression Chamber for Bales Based on ANSYS Changbin He, College of Engineering, China Agricultural University, Beijing, China (S. Li, G. Wang, D. Wang, J. Fu, C. He, J. Feng, Q. Sun, Y. YU)
8:20AM	162461163	Development of a Hemp Flower Harvester Timothy Stombaugh, University of Kentucky, Lexington, KY (T. Stombaugh, W. Adams)
8:35AM	162460225	The Effect of Conditioning Systems on Baling and Harvest of Miscanthus Jude Liu, Penn State University, University Park, PA (J. Liu, S. Redcay)
8:50AM	162455264	Conceptual Specification of Forest Utility Balers for Woody Biomass James H. Dooley, Forest Concepts, LLC, Auburn, WA (J.H. Dooley, C. Lanning, D.N. Lanning)
9:05AM	162460754	Potential domestic demand for wood pellets by coal-fired power plants in the United States toward meeting the GHG targets of EPA's Clean Power Plan Mahmood Ebadian, The University of British Columbia, Vancouver, Canada (M. Ebadian, S. Sokhansanj)

WEDNESDAY, JULY 20

9:20AM 162460208 Willow harvesting using a small-scale system in Michigan
Yingqian Lin, Michigan State University, Okemos, MI (Y. Lin, F. Pan)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 313

ADVANCES IN MODEL CALIBRATION AND VALIDATION

– Sponsored by NRES-21

Moderator: Maria Librada Chu, Saint Louis University, St. Louis, MO

LOCATION: Coronado Q

Time	Paper #	Title/Authors
7:30AM		Introduction -
7:35AM	162461907	Seeing the forest for the trees in the SW Amazon: global sensitivity analysis of a complex ecological model Geraldine Klarenberg, University of Florida, Gainesville, FL (G. Klarenberg, R. Munoz-Carpena)
7:50AM	162459770	Probabilistic approach to modeling under changing scenarios Andres F. Prada Sepulveda, University of Illinois at Urbana-Champaign, Urbana, IL (A.F. Prada Sepulveda, M. Chu, J. Guzman)
8:05AM	162459110	NexRad N1P data and Ground-based Rainfall Time Series Comparison in the Little Washita Watershed Congyu Hou, UIUC, Urbana, IL (C. Hou, M. Chu, J. Guzman, S. Li)
8:20AM	162458519	Simulating Evapotranspiration (ET) and Corn Yield Response to Irrigation Management in the Texas High Plains using DSSAT Gary Marek, USDA-ARS, Bushland, TX (G. Marek)
8:35AM	162460875	An Improved Spatial Calibration Approach for Distributed Hydrological models KP Sudheer, Indian Institute of Technology Madras, Chennai, India (K. Sudheer, A. Pavizham)
8:50AM	162457384	Sensitivity and Skill of SWAT Model Soil Water Content Dynamics Garett Pignotti, Purdue University, West Lafayette, IN (G. Pignotti, H. Rathjens, r. Cibilin, I. Chaubey, M. Crawford)
9:05AM	162461818	Soil Organic Carbon Modeling Using the EPIC Model for Conservation Agriculture and Conventional Tillage Systems in Kampong Cham, Cambodia Kieu N. Le, North Carolina A&T State University, Temple, NC, United States (K.N. Le, M.R. Reyes, J. Jeong, L. Hok)
9:20AM	162454205	Evaluation of the Reduced State-Variable TOMGRO Model using Boundary Data Ramin Shamshiri, Universiti Putra Malaysia, Serdang, Malaysia (R. Shamshiri, D. Ahmad, w.b. wan ismail, H. Che Man, M. Yamin)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 314

ADVANCES IN DRAINAGE AND DRAINAGE WATER QUALITY

– Sponsored by NRES-23

Moderator: Srinivasulu Ale, Texas A&M AgriLife Research, Vernon, TX

LOCATION: Coronado R

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162462050	Transforming Drainage: Retaining Water for Increased Resiliency and Decreased Nutrient Loss Jane Frankenberger, Purdue University, West Lafayette, IN (J. Frankenberger)

7:50AM 162461405 Nitrate and Phosphorus Losses from an Agricultural Drained Field in Indiana under Free and Controlled Tile Drainage
Samaneh Saadat, Purdue University, West Lafayette, IN (s. saadat, J. Frankenberger, L. Bowling)

8:05AM 162458188 In-ditch, stepped denitrifying bioreactor for treatment of agricultural ditch drainage
Laura Christianson, University of Illinois, Urbana, IL (L. Christianson, R. Bryant, P.J. Kleinman, A. Allen, A.S. Collick, A. Buda, E. May, E. Bock, Z.M. Easton)

8:20AM 162423903 Characterizing water flow through woodchips using Forchheimer and Izbash
Ehsan Ghane, University of Minnesota, Saint Paul, MN (E. Ghane, G.W. Feyereisen, C.J. Rosen)

8:35AM 162460856 Removal of Nutrients from Agricultural Drainage Water using Nano-Engineered Porous Ceramic Media
Younsuk Dong, Michigan State University, East Lansing, MI (y. dong, S. Safferman, O. Tekesin, s. Sengupta, J. Schorr, R. Revur)

8:50AM 162463078 Designing In-Field Water Storage for an Agricultural Subsurface Drainage System
Heidi Peterson, Minnesota Department of Agriculture, St Paul, MN (A. Janz, J. Kjaersgaard, H. Peterson, M. Wagner)

9:05AM 162458946 Soil Water Availability and Water Use of Crops from Contrasting Cropping Systems
Axel Garcia y Garcia, University of Minnesota, Lamber-ton, MN (A. Garcia y Garcia, J. Strock)

9:20AM 162461794 Evaluating the potential benefit of recycled drainage water for crop production in Iowa
Christopher Hay, Iowa Soybean Association, Ankeny, IA (C. Hay, M. Helmers)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 315

ADVANCES IN IRRIGATION MANAGEMENT

– Sponsored by NRES-24, NRES-244

Moderator: Freddie Lamm

LOCATION: Coronado S

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162456938	Agriculture can Contribute to Texas Water Sustainability Michael Clough, Cardno, Fort Myers, FL (M. Clough)
7:50AM	162461653	A flexible system for parameter estimation in surface irrigation Eduardo Bautista, USDA-ARS, Maricopa, AZ (E. Bautista, J. Schlegel)
8:05AM	162459984	Vertical Hollowshaft Motors for Irrigation: Does Premium Efficiency Payback? Chris Henry, University of Arkansas, Stuttgart, AR (C. Henry, K.B. Watkins, R. Mane)
8:20AM	162460843	Yield and Crop water Use Efficiency Response of Drought-Tolerant and Conventional Maize Hybrids Under Different Irrigation Regimes and Climate Gradients Ali T. Mohammed, University of Nebraska-Lincoln, Lincoln, NE (A.T. Mohammed, S. Irmak, W. Kranz, S. van Donk, C. Yonts)
8:35AM	162462560	Development of Crop Coefficients Using Remote Sensing-Based Vegetation Index and Growing Degree Days Arturo Reyes-Gonzalez, South Dakota State University, Brookings, SD (A. Reyes-Gonzalez, T. Trooien, C. Hay, J. Kjaersgaard, D. Reta-Sanchez)
8:50AM	162461673	When should irrigators invest in more water-efficient technologies as an adaptation to climate change? Keyvan Malek, Washington State University, Pullman, WA (K. Malek, C. Stöckle, J. Adam, M. Brady)

WEDNESDAY, JULY 20

9:05AM	162461590	Climate Adaptation Strategies and Water Resources Planning for Maize and Rice Production in the Rufiji Basin, Tanzania Paul S. Miller, Agribile, Inc, Champaign, IL (P.S. Miller)
9:20AM	162456144	Assistance from the Natural Resource Conservation Service on an irrigation site Jon Whan, USDA - NRCS, San Angelo, TX (J. Whan)
9:35AM	162460130	Parameterization of canopy resistance for modeling the energy partitioning of a paddy rice field Haofang Yan, Jiangsu University, Zhenjiang, China (H. Yan, C. Zhang, H. Oue)

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 316

WETLANDS AND COASTAL SYSTEMS

– Sponsored by NRES-25, NRES-28

Moderator: Anna Linhoss, Mississippi State University, Starkville, MS

LOCATION: Coronado T

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461576	LongtermShallow Water Table Dynamics of Coastal Forested Wetlands Devendra M. Amatya, USDA Forest Service, Cordesville, SC (D.M. Amatya, C.C. Trettin)
7:50AM	162432489	Comparison of Oconee and Ocmulgee river basins for water management improvement Ernest W. Tollner, University of Georgia, Athens, GA (N.V. Bhattacharjee, E.W. Tollner, J.W. Willis, S.K. McKay)
8:05AM	162460370	Can Upstream Anthropogenic Activities Can Reshape the Tidal Influence on a Downstream Wetland? - A case study in NW Costa Rica Alice Alonso, University of Florida, Gainesville, United States Minor Outlying Islands (A. Alonso, R. Munoz-Carpena, A. Valle-Levinson, C. Murcia)
8:20AM	162461844	Understanding the unique hydrology of Maryland's Eastern Shore to better inform nutrient management planning Amy S. Collick, University of Maryland Eastern Shore, Princess Anne, MD (A.S. Collick, A. Allen, T.L. Veith, D.R. Fuka, A. Buda, R. Bryant, P.J. Kleinman, Z.M. Easton)
8:35AM	162464929	Freshwater Detention by Oyster Reefs: Quantifying a keystone ecosystem service David Kaplan, Engineering School of Sustainable Infrastructure and Environment, University of Florida, Gainesville, FL (D. Kaplan)
8:50AM	162461490	When does tidal creek dissolved oxygen peak at night? Abiotic vs. biotic forcing of oxygen dynamics Natalie Nelson, University of Florida, Gainesville, FL (N. Nelson, R. Munoz-Carpena, J. Megonigal, P. Neale, M. Tzortziou)
9:05AM	162461845	Uncertainty of Using In Situ Optical Property Measurements as Surrogate Data to Continuously Monitor Nitrogen, Phosphorus and Carbon Concentrations in a Constructed Brackish Tidal Marsh James R. Etheridge, East Carolina University, Greenville, NC (J.R. Etheridge, F. Birgand, M. Burchell)
9:20AM	162461347	Evaluations of NRCS's Migratory Bird Habitat Initiative (MBHI) Brian Davis, Mississippi State University, Mississippi State, MS (B. Davis)
9:35AM	162457502	Google Earth Engine: an Unprecedented tool to Study Spatiotemporal Landscape Dynamics Alice Alonso, University of Florida, Gainesville, United States Minor Outlying Islands (A. Alonso, R. Munoz-Carpena, R.E. Kennedy, C. Murcia)

9:50AM	162461437	The Impacts of On-Site Sewage Systems in the Coastal Areas of Texas Askarali Karimov, Texas A&M University, College Station, TX (A. Karimov, R. Gerlich, G. Bonaiti, A. Jantrania)
--------	-----------	--

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 317

ANIMAL MANURE MANAGEMENT SYSTEMS - PART 1

– Sponsored by NRES-27

Moderator: Teng Lim

LOCATION: Fiesta 6

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461321	Reduction of P and N in Swine Manure to Improve Production Results Robert Spajić, University of J.J. Strossmayer Osijek, Osijek, Croatia (R. Spajić, R.T. Burns, D. Kralik, D. Kovacic, D. Jovicic, D. Eman)
7:50AM	162460689	Manure Application Rate and Timing Influences Nutrient Losses at Field and Watershed Scales Jian Liu, USDA-ARS, State College, PA (J. Liu, T.L. Veith, P.J. Kleinman, D. Beegle, A.S. Collick)
8:05AM	162460687	Winter manure management guidelines to reduce off-site nutrient losses: A global review Jian Liu, USDA-ARS, State College, PA (J. Liu, P.J. Kleinman, D. Beegle, T.L. Veith)
8:20AM	162461496	Laboratory Investigation of Nutrient Fate during Winter Manure Application Jason S. Smith, Michigan State University, Kalamazoo, MI (J.S. Smith, S.I. Safferman, N. Ikeda, L. Costantini)
8:35AM	162461312	Comprehensive Nutrient Management Plan Development in China Robert T. Burns, The University of Tennessee, Knoxville, TN (R.T. Burns, H. Dong, Z. Zhu, W. Jia, R. Spajic, B. Kintzer, R. Maisonnave, H. Xin)
8:50AM	162460271	Coefficient of variation of discharge from liquid manure applicator distribution manifolds Kapil Arora, Iowa State University, Nevada, IA (K. Arora, D. Andersen)
9:05AM	162460377	Assessing the effects of manure treatment on the decomposition rate of dairy manure Tariq Mahmood Khalil, Washington State University, Pullman, WA (T. Khalil, C. Frear, C. Stöckle, S.S. Higgins)
9:20AM	162461906	Covering a slurry manure storage: Can better nutrient management pay Daniel Andersen, Iowa State University, Ames, IA (D. Andersen)
9:35AM	162455968	Assessing the impacts of anthropogenic and hydroclimatic drivers on estrogen legacies and trajectories Heather E. Gall, The Pennsylvania State University, University Park, PA (H.E. Gall, N. Basu, M. Mashtare, P.C. Rao, L.S. Lee)

WEDNESDAY, JULY 20

Wednesday, July 20 - 7:30AM - 10:15AM

SESSION 318

NUTRIENT REMOVAL, RECOVERY, AND RECYCLE – Sponsored by NRES-28

Moderators: Lordwin Jeyakumar, Atlantic Cool Climate Crop Research Centre, St. John's, Canada
Wendong Tao, SUNY College of Env Science & Forestry, Syracuse, NY

LOCATION: Fiesta 7

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461962	Investigation on the mechanisms of improved phosphorus recovery by electrocoagulation in liquid swine manure Xin Zhang, University of Minnesota-Twin Cities, SAINT PAUL, MN (X. Zhang, H. Lin, C. Zamalloa, J. Gan, B. Hu)
7:50AM	162462830	Removal of phosphorus from anaerobic digestion effluent using flue gas desulfurization gypsum Adam Khalaf, The Ohio State University, Wooster, OH (A. Khalaf, F. Xu, Y. Li)
8:05AM	162462733	Ammonia nitrogen removal in a biological nitrifying system using oyster shells as alkalinity-releasing filling materials Dezhao Liu, Zhejiang University, Hangzhou, China (C. Li, X. Lin, L. Duan, D. Liu, Z. Han)
8:20AM	162460703	Ammonia removal from dairy wastewater by simultaneous nitrification, anammox, and denitrification processes in single-stage recirculating vertical sub-surface flow wetlands Wendong Tao, SUNY-ESF, Syracuse, NY (H. Li, W. Tao)
8:35AM	162461188	Nitrogen removal from polluted animal farm wastewater using alum sludge based tidal flow constructed wetland system Lordwin G. Jeyakumar, Atlantic Cool Climate Crop Research Centre, St. John's, Canada (L.G. Jeyakumar)
8:50AM	162460093	A Comprehensive Review of N and P removal by Manure Treatment Technologies Douglas W. Hamilton, Oklahoma State University, Stillwater, OK (D.W. Hamilton, J. Porter, A. Ludwig, R. Meinen, K. Cantrell, J. Chastain, J.A. Ogejo)
9:05AM	162460532	Environmental Assessment of Phosphorus Recovery from Municipal Waste Water using N-E-W Tech™ System Chad Dunkel, University of Idaho: School of Food Science, Moscow, ID (D.S. Shrestha, C. Dunkel, G. Moller)
9:20AM	162461904	Evaluation of the Economic Constraints on Nutrient Partitioning Systems to Reduce the Costs of Land Application of Animal Manures Daniel Andersen, Iowa State University, Ames, IA (D. Andersen)
9:35AM	162462666	Effects of shear-stress shock on the biofilm of wastewater treatment bioreactor in recirculating aquaculture system Zhiying Han, Zhejiang University, Hangzhou, China (Z. Han, C. Li, L. Duan)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 319

SUSTAINABLE INTENSIFICATION - INVITED – Sponsored by NRES

Moderator:

LOCATION: Fiesta 8

Sustainable Intensification (SI) is a topic receiving global attention, especially by agricultural and biological engineers. The purpose of SI is to increase agricultural productivity and quality, improve human nutrition and provide economic and social benefits, while simultaneously decreasing environmental impacts, labor and human drudgery, and water and energy needs. Such a strategy is of particular importance for developing countries challenged with the need of increased food production subject to limited resources. SI has been applied to a variety of value chains and agricultural production activities. The purpose of this invited session is to highlight the need for SI as well as detailing current and future efforts to address its practical implementation through appropriate strategies in a global context.

Time	Paper #	Title/Authors
7:30AM		Introduction
7:30AM	162510625	Evergreen Agriculture a Sustainably Intensified System Dennis Garrity, ICRAF, Nairobi, Kenya (D. Garrity)
7:45AM	162510245	Conservation Agriculture with Trees a Sustainably Intensified System for Sloping Terrain Manuel R. Reyes, North Carolina A&T State Univ, Greensboro, NC (M.R. Reyes)
8:00AM	162510319	Sustainably Intensified Vegetable Production System Don Immanuel A. Edralin, North Carolina A&T State Univ, Greensboro, NC (D.A. Edralin)
8:15AM	162510283	Appropriate Scale Mechanization Innovation for Sustainable Intensification Alan C. Hansen, Univ of Illinois, Urbana, IL (A.C. Hansen)
8:30AM	162510648	Feed the Future Sustainable Intensification Innovation Lab: Global Research Portfolio P.V. Vara Prasad, Kansas State Univ, Manhattan, KS (P. Prasad)
8:45AM		Panel Discussion

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 320

PROCESSING TECHNOLOGIES FOR LOW-MOISTURE FOOD SAFETY

– Sponsored by PRS-703, PRS-701, PRS-702
Moderator: Nayak Balunkeswar

LOCATION: Fiesta 9

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162467128	Radiofrequency-Assisted Thermal Processing for Improving Microbiological Safety and Functionalities of Egg White Powders Jeyam Subbiah, University of Nebraska, Lincoln, NE (J. Subbiah)
7:50AM	162459412	The Influence of Temperature on Water Activity at High Temperatures Lauren Crawford, Decagon, Devices, Inc, Pullman, WA (B. Carter, G. Campbell, L. Crawford, R. Mohan, J. Tang)
8:05AM	162467124	Factors Influencing the Thermal Resistance of Microorganisms in Low Moisture Foods: Importance of Water Activity Roopesh Mohan, Washington State University, Pullman, WA (R. Mohan)

WEDNESDAY, JULY 20

8:20AM	162461476	Study of thermal resistance of Salmonella in low moisture foods inside a closed system maintained with stable water activity at the elevated temperatures Ravi Kiran Tadapaneni, Washington State University, Pullman, WA (R. Tadapaneni, R. Mohan, J. Tang, R. Villa Rojas)
8:35AM	162460540	Evaluation of thermal resistance of fresh and freeze-dried Enterococcus faecium NRRL B-2354 in wheat flour using both TAC and TDT cells Jie Xu, Department of Biological Systems Engineering, Washington State University, Pullman, WA (J. Xu, S. Liu, J. Tang, m. zhu, D.H. Shah)
8:50AM	162459966	Comparison of Cronobacter-sakazakii thermal death kinetics in powdered infant formula milk using hot water and combined radio frequency and hot air treatment Yanhong Liu, China Agricultural University, Beijing, China (L. Wang, J. Tang, Y. Lin, Y. Xie, S. Wang, Z. Gao, Y. Liu)
9:05AM	162456721	Validation of radio frequency-assisted pasteurization in low-moisture foods using Enterococcus faecium Shuxiang Liu, Washington State University, Pullman, WA (S. Liu, Z. Zhu, J. Tang, m. zhu)
9:20AM	162459130	Energy analysis in pilot scale production of ready-to-eat therapeutic food paste for SAM children Rakesh K. Raigar, Indian Institute of Technology Kharagpur, Kharagpur, India (R.K. Raigar, H. Mishra)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 321 DRYING, HANDLING, AND STORAGE - PART 1 – Sponsored by PRS-702

Moderator:

LOCATION: Fiesta 4

Time	Paper #	Title/Authors
7:30AM		Introduction
7:35AM	162461232	The Multi commodity heat pump dryer Lorcelle B. Taclan, Adventist University of the Philippines, Cavite, Philippines (L.B. Taclan, S.S. Franco, T. Emson, M. Hannah, L. Arce)
7:50AM	162460695	Solar Drying characteristics of pretreated tomatoes based on local weather conditions in Ghana Mavis Owureku-Asare, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana (M. Owureku-Asare, J. Ampah, A. Sanghi, K. Ambrose)
8:05AM	162458204	Influence of the extent of cross-linking on the physical properties of spray-dried alginate microcapsules Scott A. Strobel, University of California, Davis, CA (S.A. Strobel, H. Scher, N. Nitin, T. Jeoh)
8:20AM	162457347	Impact of a polyethylene liner on the storage of canola in unaerated steel bins – final results Kevin G. Moore, Oklahoma State University, Stillwater, OK (K.G. Moore, C. Jones)
8:35AM	162461379	Assessment of an Industrial Type Radiant Heating System for Drying Rough Rice Anne A. Okeyo, University of Arkansas, Fayetteville, AR (A.A. Okeyo)
8:50AM	162455611	Evaluation of Sealed Hopper Silos for Successful Grain Fumigation Ben Plumier, Kansas State University, Manhattan, KS (S. Cook, D. Maier, B. Plumier)
9:05AM	162448188	Evaluation of Two Ear Maize Drying Systems to Aid Smallholder Farmers with Post-Harvest Loss Reduction Benjamin Plumier, Iowa State University, Ames, IA (D. Maier, A. Miller, G. DeVries, B. Plumier)
9:20AM	162434402	Studies on mechanical roasting of cassava meal for garri production Abimbola O. Oladoyin, West Virginia University, Morgantown, WV, United States (A.O. Oladoyin, S. Ugoso, I. Sanni)

9:35AM	162434012	Influence of Osmotic Solution Type on Osmotic Dehydration and Drying Characteristics of Fresh and Frozen Blueberries Kaushlendra Singh, West Virginia University, Morgantown, WV (F.U. Akharume, K. Singh, L. Sivanandan)
--------	-----------	---

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 322 UPGRADING OF BIOGAS AND BYPRODUCTS FROM ANAEROBIC DIGESTION TO FUELS AND CHEMICALS – Sponsored by PRS-707

Moderator: Yan Liu

LOCATION: Fiesta 10

Time	Paper #	Title/Authors
7:30AM		Introduction -
7:35AM	162459752	Development of a non-sterile methanotrophic trickle bed bioreactor for conversion of biogas to methanol Johnathon Sheets, The Ohio State University-OARDC, Wooster, OH (J. Sheets, Y. Li)
7:50AM	162460516	Methanol production from raw biogas with methanotrophic consortia enriched from anaerobic digestion effluent Xumeng Ge, The Ohio State University, Wooster, OH (Z. Su, X. Ge, Y. Li)
8:05AM	162476803	A novel approach to simultaneously clean up biogas and reclaim water from anaerobic digestion Wei Liao, Michigan State University, East Lansing, MI (W. Liao)
8:20AM	162476807	A simple solution to clean-up biogas for electricity generation in Rural Central America Wei Liao, Michigan State University, East Lansing, MI (W. Liao)
8:35AM	162476810	Comparison of Brayton and Rankin Cycles on Biogas Utilization Wei Liao, Michigan State University, East Lansing, MI (W. Liao)

Wednesday, July 20 - 10:15AM - 12:35PM

SESSION 323 ADVANCES IN BIOMASS PREPROCESSING AND PRETREATMENT - PART 2 – Sponsored by ES-220

Moderator:

LOCATION: Coronado B

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	162457767	Enzyme Recycling during Hydrolysis of Sugar Beet for Bioethanol Production Yike Chen, University of California-Davis, Davis, CA (Y. Chen, N. Aramrueang, S.M. Zicari, R. Zhang)
10:35AM	162447925	Investigating cellulose accessibility to cellulases and water in pretreated lignocellulosic biomass Nardrapee Karuna, University of California, Davis, CA (N. Karuna, M. McCarthy, T. Jeoh)
10:50AM	162462142	Microalgae Organelle Isolation and Enzyme disruption for the design of an integrated Aqueous Enzymatic Extraction process Laura Soto Sierra, Kansas State University, Manhattan, KS (L. Soto Sierra, C. Dixon, L.R. Wilken)
11:05AM	162461182	Fungal pretreatment of non-sterile lignocellulosic biomass: changes in composition and structure Juliana Vasco Correa, The Ohio State University, Wooster, OH (J. Vasco Correa, Y. Li, X. Luo)

WEDNESDAY, JULY 20

11:20AM	162460958	Effect of Hot Water Extraction on Inorganics Removal in Switchgrass Qiaoming Liu, University of Tennessee, Knoxville, TN (Q. Liu, S.C. Chmely, N. Labbé, N. Abdoulmoumine)
11:35AM	162391414	Fungal Fermentation on Detoxified Whole Anaerobic Digestate for Lipid-based Biofuel Production Yuan Zhong, Michigan State University, East Lansing, MI (Y. Zhong, Z. Liu, C. Isaguirre, Y. Liu, W. Liao)
11:50AM	162462924	Investigation of 'lignin modifications' in termite inspired bio-pretreatment process- A key step in bio-mass conversion technologies Innu Chaudhary, Washington State University, Pullman, WA (I. Chaudhary, S. Chen)
12:05PM	162462952	Full utilization of both structural and non-structural carbohydrates in sweet sorghum bagasse through optimized pretreatment conditions Nana Baah Appiah-Nkansah, Kansas State University, Manhattan, KS (N. Appiah-Nkansah, D. Wang, K. Zhang)
12:20PM	162443765	Reduced severity ammonia pretreatment and lowered enzyme loading with pelleted corn stover Scott W. Pryor, North Dakota State University, Fargo, ND (N. Nahar, S.W. Pryor)

Wednesday, July 20 - 10:15AM - 12:30PM

SESSION 324

HANDLING, STORAGE, TRANSPORT, AND PROCESSING OF BIOMASS FEEDSTOCK – Sponsored by ES-220

Moderator: Umakanta Jena

LOCATION: Coronado C

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	162434196	Size, Shape and Flow Characterization of Ground Woody Biomass Particles from Chips and Pellet Hamid Rezaei, University of British Columbia, Vancouver, Canada (H. Rezaei, S. Sokhansanj, C. Lim, A. Lau)
10:35AM	162459195	Grinding and briquetting characteristics of municipal solid waste for biofuels application Jaya S. Tumuluru, Idaho National Laboratory, Idaho Falls, ID (J.S. Tumuluru, N.A. Yancey, C.C. Conner, M. Dee)
10:50AM	162461764	Effect of rainfall on the water uptake by biomass bales Subhashree Navaneetha Srinivasagan, North Dakota State University, Fargo, ND (S. Navaneetha Srinivasagan, I. Cannayen, G.C. Bora)
11:05AM	162461592	Best Management Practices for Cellulosic Feedstock Transportation Nawa Raj Baral, The Ohio State University, Wooster, OH (N. Baral, A. Shah, J. Brue, K. Webster, M. Darr)
11:20AM	162460711	An Experimental Study on Pipeline Hydro-transport of Forest Harvesting Residues Woodchips to a Bio-mass Conversion Facility Mahdi Vaezi, University of Alberta, Edmonton, Canada (M. Vaezi, A. Kumar)
11:35AM	162460667	Pipeline Hydrotransport of Wheat Straw Biomass in Vertical and Inclined Pipes Kashif Javed, University of Alberta, Edmonton, Canada (K. Javed, M. Vaezi, A. Kumar)
11:50AM	162447796	Bench Scale Analysis of Off-Gas Emissions from Stored Loblolly Pine Grinds Anshu Shrestha, Auburn University, Auburn, AL (A. Shrestha, D. Fasina, T. Loxley, Z. Wang)
12:05PM	162459903	Effect of mushroom inoculation during switchgrass storage on digestibility Amandeep Singh Turay, University of Arkansas, Fayetteville, AR (A. Turay, G. Shelyn, C.C. Craigie, K. Rajan, M. Buser, D. Carrier, M.R. Wilkins)

Wednesday, July 20 - 10:30AM - 12:30PM

SESSION 325

PROGRAMS OF EXCELLENCE IN AGRICULTURAL SAFETY AND HEALTH - INVITED – Sponsored by ESH

Moderator: Bradley Rein, USDA NIFA, Washington,

LOCATION: Coronado D

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162568264	Development of a Safety Decision Making Scenario to Measure Worker Safety in Agriculture - 2015 ASABE Superior Paper Award Gretchen A. Mosher, Iowa State University, Ames, IA (G.A. Mosher)
10:50AM	162568270	Grain C.A.R.T. - A Comprehensive Agricultural Rescue Training Program - 2015 ASABE Innovative Extension Method and Impact Award S. Dee Jepsen, Ohio State University, Columbus, OH (S. Jepsen)
11:05AM	162568283	Hydrogen Sulfide Gas Emissions in the Human-Occupied Zone during Disturbance and Removal of Stored Spent Mushroom Compost Thomas P. Curran, University College Dublin, Dublin, Ireland (T.P. Curran)
11:20AM	162568274	ATV Safety for Agriculture - 2014 ASABE Blue Ribbon Award for Electronic Delivery, DVD S. Dee Jepsen, Ohio State University, Columbus, OH (S. Jepsen)
11:35AM	162460023	From Zero Vision of Fatalities to Certification of Working Conditions - Strategies for Safety and Health in Swedish Agriculture Peter Lundqvist, Swedish University of Agricultural Sciences, Alnarp, Sweden (P. Lundqvist)

Wednesday, July 20 - 10:30AM - 1:15PM

SESSION 326

BIG DATA, DATA ANALYSIS AND APPS (INCLUDING TEACHING METHODS)- PART 2 – Sponsored by ITSC-254

Moderator: Hasan Seyyedhasani, University of Kentucky, Lexington, KY

LOCATION: Coronado E

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162460170	The Trials Tracker App: For Synchronized, Mobile Yield Data Analysis of On-Farm Trials Samuel Noel, Purdue University, Lafayette, IN (S. Noel, D. Buckmaster, J.V. Krogmeier, A. Ault)
10:50AM	162462264	ADAPT: Interoperability through an industry open-source toolkit R. Andres Ferreyra, Ag Connections LLC, Murray, KY (R. Bullock, B. Craker, R. Ferreyra, A. Gowler, C. Hillyer, J. Kolberg, L.T. Reddy, S. Rhea, E.D. Schultz, T.W. Shearouse, C. Spaetti, M.W. Stelford, J.W. Tevis, J.A. Wilson)
11:05AM	162462418	Filling in the blanks with ContextItems: a lightweight method for extending field operations object models R. Andres Ferreyra, Ag Connections LLC, Murray, KY (D.G. Daggett, R. Ferreyra, L.T. Reddy, S. Rhea, J.W. Tevis)
11:20AM	162462912	SPADE's Core Documents: A model for representing field operations business process data R. Andres Ferreyra, Ag Connections LLC, Murray, KY (R. Ferreyra, S.C. Haringx, S. Rhea, J.M. Russo, P. Sanders, J.W. Tevis, J.W. Wilson, J.A. Wilson)

WEDNESDAY, JULY 20

11:35AM	162458371	Data Exchange Standard for Precision Irrigation Charles C. Hillyer, Texas A&M AgriLife, Amarillo, TX (D. Adhikari, D. Berne, R. Ferreyra, C.C. Hillyer, S. Melvin, B. Nef)
11:50AM	162460082	Cotton Foreign Matter Detection by Pulsed Thermographic Analysis Jesse D. Kuzy, University of Georgia, Athens, GA (J.D. Kuzy, C. Li)
12:05PM	162462664	CyberGIS-enabled agricultural remote sensing drone and big data analytics for precision farming LiuJun Li, Department of Agricultural And Biological Engineering, University of Illinois at Urbana-Champaign, Urbana, IL (L. Li, L. Tian, Y. Cai, N. Casler, S. Wang)
12:20PM	162462904	Analytics to Enhance Crop-, Livestock-, and Community-Decisions in a Changing Climate Francisco Muñoz Arriola, University of Nebraska-Lincoln, Lincoln, NE (F. Muñoz Arriola, R. Stowell, C.M. Carrillo, G.A. Lopez-Morfeo)
12:35PM	162461782	Analyzing the distribution of hydrogeomorphic characteristics across Pennsylvania as a precursor to Phosphorus Index modifications Tamie L. Veith, USDA-ARS, University Park, PA (T.L. Veith, S. Goslee, D. Beegle, J. Weld)
12:50PM	162460589	Compression of voltammetric electronic tongue data obtained from Chinese rice wine Weilin Zhang, Department of Biosystems Engineering, Zhejiang University, Hangzhou, China (W. Zhang, J. Wang, Z. Wei)

Wednesday, July 20 - 10:30AM - 1:15PM

SESSION 327

DIELECTRIC PROPERTIES AND SENSING APPLICATIONS – Sponsored

by ITSC-348

Moderator: Samir Trabelsi, USDA-ARS, Athens, GA

LOCATION: Coronado F

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162461534	Assessing Chicken Meat Freshness through Measurement of Radio-Frequency Dielectric Properties Samir Trabelsi, USDA-ARS, Athens, GA (S. Trabelsi)
10:50AM	162461643	Investigating Kernel Moisture Content at the Front and Back of Semitrailers during Peanut Drying Micah A. Lewis, USDAARS, Athens, GA (M.A. Lewis, S. Trabelsi, S.O. Nelson)
11:05AM	162461021	Monitoring moisture content of gas-phase biofilter based on impedance under different conditions Zhonghua Zheng, University of Illinois at Urbana-Champaign, Urbana, IL (Z. Zheng, L. Yang, X. Wang)
11:20AM	162461979	Capacitance Sensors for Nondestructive Moisture Determination in Bio-fuel materials Venkatkrishna c. Kandala, USDA, ARS, Athens, GA (V.c. Kandala)
11:35AM	162461429	A Substrate Integrated Waveguide Sensor for Measurement of Dielectric Properties of Biomass Materials. Samir Trabelsi, Agricultural Research Service, Athens, GA (M.S. McKeown, S. Julrat, S. Trabelsi, E.W. Tollner)
11:50AM	162447710	Quantifying diesel fuel contamination of engine oil using Terahertz Time-Domain Spectroscopy Ali M. Abdul-Munaim, Southern Illinois University, Carbondale, IL (A.M. Abdul-Munaim, D.G. Watson)
12:05PM	162461483	Dielectric Spectroscopic Aerosol Sensing in the Compressed Air Stream Safal Kshetri, Iowa State University, Ames, IA (S. Kshetri, B. Steward, S. Birrell)
12:20PM	162460299	Modeling Ground Penetrating Radar (GPR) Technology for Seed Planting Depth Detection using Numerical Scheme based on Finite Difference Time Domain (FDTD) Method

12:35PM	162458277	Kenneth O. Mapoka, Iowa State University, Ames, IA (K.O. Mapoka, S. Birrell, M. Tekeste) Use of material dielectric properties for agricultural applications Samir Trabelsi, USDA, ARS, Athens, GA (S.O. Nelson, S. Trabelsi)
12:50PM	162461003	Ultra-sensitive Detection Performed by Terahertz Metamaterials: a Method of Signal Enhancement in Terahertz Region Wendao Xu, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (W. Xu, L. Xie, Y. Ying)

Wednesday, July 20 - 10:30AM - 1:00PM

SESSION 328

BIOSENSORS AND BIOELECTRONICS - PART 2

– Sponsored by ITSC-230

Moderator: Singhuja Sankaran

LOCATION: Coronado G

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162459905	Modeling of the Binding Kinetics of Bacteria with Magnetic Nanoparticles in Bioreaction and Magnetic Separation Processes Zach Callaway, University of Arkansas, Fayetteville, AR (Z. Callaway, R. Wang, Y. Li)
10:50AM	162461406	A portable and automatic biosensing instrument for simultaneous detection of foodborne pathogens using nanobead-based magnetic separation and quantum dot-labeled fluorescent measurement Zhuo Zhao, University of Arkansas, Fayetteville, AR (Z. Zhao, L. Xu, Q. Hu, R. Wang, H. Wang, Y. Li)
11:05AM	162459257	Bio-Inspired Patterned networkS (BIPS) for development of flexible biosensors Eric S. McLamore, University of Florida, Gainesville, FL (E.S. McLamore, M. Convertino, J. Claussen, D.C. Vane-gas)
11:20AM	162460501	Development of Polyurethane Adhesives derived from Crude Glycerol based Polyol for Wood Bonding Shaoqing Cui, Ohio State University, Wooster, OH (S. Cui)
11:35AM	162457390	Root Monitoring System Using Electrical Capacitance Tomography (ECT) for Pre-Symptomatic Disease Detection Gary McMurray, Georgia Tech Research Institute, Atlanta, GA (D. Sabo, G. McMurray, G.C. Rains)
11:50AM	162460030	Development of a biosensor for rapid detection of insecticide based on insect-derived chemosensory proteins and graphene nanocellulose paper Yue Rong, University of Florida, Gainesville, FL (Y. Rong, J. Kieran-Lewis, N. Keyhani, E.S. MCLAMORE)
12:05PM	162460599	An Optimization of the MOS Electronic Nose Sensor Array for the Detection of Chinese Pecan Quality Kemeng Xu, Zhejiang University, Hangzhou, China (K. Xu, J. Wang, Z. Wei, F. Deng, S. cheng, Y. Wang)
12:20PM	162455960	A Novel and Portable Device for Measuring Respiratory Rate of Livestock Under Field Conditions Hugo F. Milan, Cornell University, Ithaca, NY (H.F. Milan, A.S. Maia, K.G. Gebremedhin)

WEDNESDAY, JULY 20

Wednesday, July 20 - 10:15AM - 12:45PM

SESSION 329

ADVANCES IN COTTON ENGINEERING – Sponsored by MS-23/7/3

Moderator: Robert Hardin

LOCATION: Fiesta 9

Time	Paper #	Title/Authors
10:15AM		Introduction
10:20AM	162459933	Development of a New Ginning System for Cotton Breeders - Seed Cotton Cleaning John D. Wanjura, USDAARS CPPRU, Lubbock, TX (J.D. Wanjura, G. Holt, m. pelletier, C. Bednarz)
10:35AM	162440831	Effect of Fiber Friction on Ginning Energy and Fiber Quality Robert G. Hardin, USDA-ARS, Stoneville, MS (R.G. Hardin, C. Delhom, E. Bechere)
10:50AM	162482120	Preliminary Fuel Use Results from Gin Audits Paul A. Funk, USDAARS, Mesilla Park, NM (P.A. Funk, R.G. Hardin)
11:05AM	162461827	Development of a prototype sensor to detect plastic contamination in seed cotton at the gin. Derek Whitelock, USDA-ARS Southwestern Cotton Ginning Research Laboratory, Mesilla Park, NM (D. Whitelock, C. Armijo, E. Hughs)
11:20AM	162482123	Initial Investigation of Using Three Different Lint Cleaners with Roller-Ginning Upland Cotton in Mississippi Richard Byler, USDAARS, Stoneville, MS (R. Byler, C. Delhom)
11:35AM	162482133	Textile Processing Improvements due to High Speed Roller Ginning of Upland Cotton Carlos Armijo, USDA, New Orleans, LA (C. Delhom, C. Armijo, E. Hughs)
11:50AM	162459202	Results from Processing Cottonseed in a Large-Scale Mechanical Delinter Greg Holt, USDA-ARS, Lubbock, TX (G. Holt, T. Wedegaertner, J.D. Wanjura, M. Pelletier)

Wednesday, July 20 - 10:30AM - 12:20PM

SESSION 331

INNOVATIVE HYDROLOGY AND WATER QUALITY MONITORING

– Sponsored by NRES-21, NRES-23, NRES-25, NRES-28

Moderator:

LOCATION: Coronado M

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162459837	Making sense of freshwater cyanobacteria monitoring data using a time-varying Granger causality approach Natalie Nelson, University of Florida, Gainesville, FL (N. Nelson, R. Munoz-Carpena, D. Kaplan, E. Philips)
10:50AM	162457908	Unraveling the dissolved oxygen TMDL truth using continuous water quality monitoring in South Carolina Debabrata Sahoo, Woolpert Inc, West Columbia, SC (D. Sahoo, F. Ellerbe, M. Long, T. Gauron)
11:05AM	162461840	Carbon and Nitrogen Stream Dynamics Determined by Optical Continuous Monitoring Methods in an Eastern NC Managed Forest/Switchgrass Intercropping Paired Watershed Study Francois Birgand, North Carolina State University, Fayetteville, NC (E. Allen, F. Birgand)
11:20AM	162461440	Impacts of Drainage Water Management on Field-Scale Hydrology and Water Quality in Eastern South Dakota Ashik Sahani, South Dakota State University, Brookings, SD (A. Sahani, L. Ahiablame, C. Hay)

11:35AM	162457526	Application of passive sampling for soluble nitrogen and phosphorous in agricultural watersheds Niroj Aryal, USDA-ARS, DWMRU, Jonesboro, AR (N. Aryal, M.L. Reba, P. Moore)
11:50AM	162461436	Development of a Large Bore Soil Core Extractor Eric J. Dahlke, University of Illinois, Urbana, IL (E.J. Dahlke, P. Davidson, M. Hayes)
12:05PM	162461549	Quantification of blue and green water in the Limpopo River Basin in Southern Africa using Earth Observation data and SWAT model Esther N. Mosase, South Dakota State University, Brookings, SD (E.N. Mosase, L. Ahiablame, R. Srinivasan)

Wednesday, July 20 - 10:30AM - 12:35PM

SESSION 332

HYDROLOGY AND WATER IMPACTS OF BIOENERGY CROP PRODUCTION – Sponsored by NRES-21

Moderator: George Chescheir, North Carolina State University, Raleigh, NC

LOCATION: Coronado N

Time	Paper #	Title/Authors
10:30AM		Introduction -
10:35AM	162462375	Assessing the Feasibility of Growing Perennial Grasses for Bioenergy Production in the Texas High Plains under Declining Groundwater Availability for Irrigation Srinivasulu Ale, Texas A&M AgriLife Research, Vernon, TX (S. Ale, Y. Chen, N. Rajan)
10:50AM	162461930	Hydrology and water quality comparisons of the early establishment period of Loblolly pine (Pinus taeda) and switchgrass (Panicum virgatum) in upland forested watersheds of Alabama, USA Nicole Dobbs, North Carolina State University, Raleigh, NC (N. Dobbs, F. Birgand, G.M. Chescheir, E. Bennett, e. allen)
11:05AM	162461646	Hydrology and Water Quality Impacts of Loblolly Pine (Pinus taeda) and Switchgrass (Panicum virgatum) Intercropped Systems in Upland Mississippi Forested watershed Taylor Carter, North Carolina State University, Raleigh, NC (T. Carter, n. dobbs, e. allen, E. Bennett, F. Birgand, G.M. Chescheir, T. Appelboom)
11:20AM	162461717	Modeling the effects of pine (Pinus taeda) and switchgrass (Panicum virgatum) intercropping on hydrology in upland forested watersheds of southeastern United States Nicole Dobbs, North Carolina State University, Raleigh, NC (N. Dobbs, F. Birgand, B.D. Phillips, G.M. Chescheir, M.A. Youssef)
11:35AM	162461878	Conservation practice strategies for economically and environmentally sustainable corn stover harvest for biofuel production in Indiana Raj Cibir, Purdue University, West Lafayette, IN (R. Cibir, I. Chaubey, B. gramig)
11:50AM	162460177	Effect of Fertilizer Application on Nutrients in Pine/Switchgrass Forest Drainage Outflow Augustine Muwamba, University of Georgia, Cordesville, SC (A. Muwamba, D.M. Amatya, E.W. Tollner, G.M. Chescheir, T. Appelboom, H. Ssegane, J.E. Nettles, M.A. Youssef, F. Birgand, R.W. Skaggs, S. Tian)
12:05PM	162459803	Modeling the impacts of sugarbeet for biofuel production on soil and water quality using the Root Zone Water Quality Model (RZWQM) Mohammad J. Anar, North Dakota State University, Fargo, ND (M.J. Anar, Z. Lin)
12:20PM	162462093	Development and field testing of an integrated process-based model for simulating pine-switchgrass intercropping systems Shiying Tian, North Carolina State University, Raleigh, NC (S. Tian, M.A. Youssef, G.M. Chescheir, J. Cacho)

WEDNESDAY, JULY 20

Wednesday, July 20 - 10:30AM - 1:00PM

SESSION 333

NUTRIENT TRANSPORT AND CYCLING

— Sponsored by NRES-22, NRES-224, NRES-28

Moderators: Sanjay Shukla, UF/IFAS, Immokalee, FL
Rajendra Sishodia, University of Florida, Immokalee, FL

LOCATION: Acapulco

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162461599	Effects of Conservation Practices on Phosphorus Loss Reduction from an Indiana Agricultural Watershed Qingyu Feng, Agricultural and Biological Engineering, Purdue University, West Lafayette, IN (Q. Feng, B. Engel, D.C. Flanagan, C. Huang)
10:50AM	162463085	Quantifying the Impacts of Tillage and Cover Crops on Nitrate-N Concentration in Leachate Emily R. Waring, Iowa State University, Ames, IA (E.R. Waring)
11:05AM	162457513	Evaluating Filter Materials for Phosphate Adsorption from Agricultural Subsurface Drainage Bjorn Sellner, South Dakota State University, Brookings, SD (B. Sellner, G. Hua, L. Ahiablame, T. Trooien, C. Hay, J. Kjaersgaard)
11:20AM	162455020	Phosphorus sinks or sources in an agricultural watershed Heidi Peterson, Minnesota Department of Agriculture, St. Paul, MN (H. Peterson, K. Kuehner, M. Wagner, A. Hoffman)
11:35AM	162456234	Drainage and water recycling management to decrease nutrient losses and increase nutrient, water use efficiency and crop performance Chin Tan, Agriculture & Agri-Food Canada, Harrow, Canada (C. Tan, T. Zhang)
11:50AM	162458019	Fate of Nitrogen in Land Application Systems Clifford B. Fedler, Texas Tech University, Lubbock, TX (C.B. Fedler)
12:05PM	162460776	Transport of sodium and potassium in a Brazilian semiarid soil following the application of domestic treated wastewater Jarbas H. Miranda, ESALQ/USP, Piracicaba, Brazil (C. Andrade, S. Montenegro, J.H. Miranda, A.A. Montenegro, F.M. Assis, K.L. Grecco)
12:20PM	162460748	Experimental and Numerical Study of Potassium Transport in Soils Following the Application of Vinasse Jarbas H. Miranda, ESALQ/USP, Piracicaba, Brazil (K.L. Grecco, L.A. de Oliveira, J.H. Miranda, R.A. Cooke, M.T. van Genuchten)

Wednesday, July 20 - 10:30AM - 1:00PM

SESSION 334

IMPROVING IRRIGATION MANAGEMENT WITH IMPROVED SENSING, DATA, AND ALGORITHMS

— Sponsored by NRES-24

Moderator: Freddie Lamm

LOCATION: Coronado P

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162455614	Irrigation Management using an Expert System, Soil Water Potentials, and Vegetative Indices for Spatial Applications Kenneth Stone, USDA-ARS, Florence, SC (K. Stone, P. Bauer, G. Sigua)

10:50AM	162459282	Irrigation Management Using a Remote Sensing Water Balance Model and Spatial Soil Moisture Mapping with Application in Variable Rate Irrigation Burdette Barker, University of Nebraska - Lincoln, Lincoln, NE (B. Barker, D.M. Heeren, C.M. Neale)
11:05AM	162436800	Center-Pivot-Mounted Sensing System for Irrigation Management Ruixiu Sui, USDA-ARS, Stoneville, MS (R. Sui, J. Baggard)
11:20AM	162462776	Three Years' Experience with Various Sources of Aerial Images for Irrigation Management Jake LaRue, Valmont Irrigation, Omaha, NE (J. LaRue)
11:35AM	162441869	Continuous monitoring of sprinkler discharge efficiency under a Linear Move Irrigation System Hossein Sadeghi, Washington State University, Pullman, WA (H. Sadeghi, T. Peters, B. Shafii, M. Amini, M. Khan)
11:50AM	162456343	Effects of collector's opening diameter on the measurements of application efficiency and uniformity of linear-move irrigation system Mohammad Zaman Amini, Washington State University, Prosser, WA (M. Amini, T. Peters)

Wednesday, July 20 - 10:30AM - 1:00PM

SESSION 335

ANIMAL MANURE MANAGEMENT SYSTEMS - PART 2

— Sponsored by

NRES-27

Moderator: Teng Lim

LOCATION: Coronado Q

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162457547	Spatial Variability of Antimicrobial Resistant Bacteria and Antimicrobial Resistance Genes Under Grazed and Manure-Amended Pastures Amy M. Schmidt, University of Nebraska - Lincoln, Lincoln, NE (S. Speicher, A.M. Schmidt, B. Woodbury, L. Durso, X. Li)
10:50AM	162459840	Bacteria Antibiotic-Resistance Evaluation in Dairy Manure and Treatment Using Polymer Zong Liu, University of Wisconsin-Madison, Madison, WI (Z. Liu, S. Long, T. Runge)
11:05AM	162462334	Methane Production and Ammonia Removal from Digested Poultry Litter Stephanie Lansing, University of Maryland, College Park, MD (F. Witorsa, S. Lansing, A. Moss, A. Kulow)
11:20AM	162460206	Added Value of Anaerobic Digestion from Scraped Swine Manure Maria Balcazar Tellez, North Carolina State University, Raleigh, NC (M. Balcazar Tellez, J. Classen, P. Kolar)
11:35AM	162461274	Optimal Operational Conditions of Methane Production for High Solids Pig Manure Chu-Yang Chou, Dept. of Bio-Industrial Mechatronics Eng., National Taiwan University, Taipei, Taiwan (C. Chou, A. Liu, F. Hsu, Y. Chang, I. Chen)
11:50AM	162462945	Denitrification performance using biodegradable polymer as carbon source to treat nitrified swine wastewater Li'an Duan, Zhejiang University, Hangzhou, China (L. Duan, C. Li, L. Li, H. Yu, Z. Han)
12:05PM	162462729	Struvite precipitation from biogas digestion slurry using two-chamber electrolysis cell with magnesium anode Xiaochang Lin, College of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, China (X. Lin, C. Li, S. Zhu, Z. Han)
12:20PM	162462668	performance of coagulation for pretreating biogas digestion slurry prior to membrane enrichment process Zhiying Han, Zhejiang University, Hangzhou, China (Z. Han, L. Wang, Z. Ye, H. Yu)

WEDNESDAY, JULY 20

Wednesday, July 20 - 10:30AM - 1:00PM

SESSION 336

EVERGLADES RESTORATION - INVITED

– Sponsored by Florida Section,

NRES-26, NRES-21, NRES-25, NRES-28

Moderator: Richard Scholtz

LOCATION: Coronado R

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162529008	Engineering the Restoration of America's Everglades Thomas Van Lent, Everglades Foundation, Palmetto, FL (T. Van Lent)
10:50AM	162526406	Payment for Water Storage and Treatment Services in the Northern Everglades Sanjay Shukla, UF/IFAS, Immokalee, FL (S. Shukla)
11:05AM	162461588	SFWMD L-8 Flow Equalization Project: Capturing Stormwater Runoff for the Restoration of the Florida Everglades - Part 2 David Scott, Jacobs Engineering Group, Palm Beach Gardens, FL (D. Scott, P. Kirby)
11:20AM	162494000	SFWMD L-8 Flow Equalization Project: Capturing Stormwater Runoff for the Restoration of the Florida Everglades - Part 1 David Scott, Jacobs Engineering Group, Palm Beach Gardens, FL (D. Scott)
11:35AM	162488725	Using Quantitative and Qualitative Metrics to Compartmentalize the A.R.M. Loxahatchee National Wildlife Refuge for Modeling Ian K. Hahus, University of Florida, Gainesville, FL (I.K. Hahus, K. Migliaccio, D. Surratt, K.R. Douglas-Mankin)
11:50AM	162462814	Phosphorus Treatment from Detention Areas in the Everglades through a Payment for Environmental Services Program Asmita Shukla, Southwest Florida Water Management District, Brooksville, FL (A. Shukla, S. Shukla, A. Hodges)
12:05AM	162494006	Saving the Everglades: The World's Largest Restoration Program Joffre Castro, National Park Service, Ochopee, FL (J. Castro)

Wednesday, July 20 - 10:30AM - 12:45PM

SESSION 337

VULNERABILITY ASSESSMENT OF LAND RESOURCES FOR SUSTAINABLE DEVELOPMENT –

Sponsored by NRES-26

Moderator: Aavudai Anandhi

LOCATION: Coronado S

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162489591	Bioenergy driven vulnerability and sustainability assessment in the Midwest USA Indrajeet Chaubey, Purdue University, West Lafayette, IN (I. Chaubey)
10:50AM	162461515	Sensitivity analysis of soil moisture to drought indices Venkat Sridhar, Virginia Polytechnic Institute and State University, Blacksburg, VA (V. Sehgal, V. Sridhar)
11:05AM	162463077	Economic factors affecting adoption and intensification of conservation practices for sustainable agriculture and carbon sequestration Jason Bergtold, Kansas State University, Manhattan, KS (J. Bergtold)
11:20AM	162463070	Vulnerability and resilience of grassland and cropping systems to climate variability and change Jean L. Steiner, USDA-Agricultural Research Service, Kerrville, GA (J.L. Steiner)

11:35AM	162463064	Vulnerability of deltaic plains of Eastern India for Water Quality and heavy metal pollution Saugata Datta, Kansas State University, Manhattan, KS (S. Datta)
11:50AM	162463072	Mine Site Rehabilitation with Biosolids for Sustainable Development Mary Beth Kirkham, Kansas State University, Manhattan, KS (M. Kirkham)
12:05PM	162463074	Assessing Drought Impacts on Semi-Arid Cropping Systems: Field Evidence and Crop Water Production Functions Robert M. Aiken, Kansas State University, Manhattan, KS (R.M. Aiken)

Wednesday, July 20 - 10:30AM - 12:45PM

SESSION 338

APPLICATIONS OF ECOLOGICAL ENGINEERING

– Sponsored by NRES-28

Moderator: Scott Osborn, University of

Arkansas, Fayetteville, AR

LOCATION: Coronado T

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162461812	Effect of substratum topography on algal turf colonization and productivity under different nutrient concentrations David M. Bliersch, Auburn University, Auburn, AL (M. Kaur, D.M. Bliersch, A. Carrano, K. Kardel)
10:50AM	162461394	Benthic algae cultivation for recovery of nutrients from aquaponics wastewater Jarrod C. Litton, Auburn University, Auburn, AL (J.C. Litton, D.M. Bliersch)
11:05AM	162455889	Development of an Endocrine Disrupting Compounds Footprint Calculator Heather E. Gall, The Pennsylvania State University, University Park, PA (M. Gluberman, L. Garcia Mandia, R. Taylor, H.E. Gall)
11:20AM	162462928	E.coli in PA streams as affected by climate forcing Eunmi Hong, USDA-ARS, College park, MD (E. Hong, Y. Pachepsky, Y. Park, D. Shelton)
11:35AM	162463317	Role of non-conventional water resources in supporting green infrastructure Shashi Kant, Texas A&M University, Kingwood, TX (S. Kant, F.H. Jaber, R. Karthikeyan)
11:50AM	162459921	Emission characteristics of a spark-ignited engine operated on syngas derived from biomass downdraft gasification Natarianto Indrawan, Environmental Science Graduate Program, 117 Life Science East, Oklahoma State University, Stillwater, OK (N. Indrawan, P. Bhoi, A. Kumar, R.L. Huhnke)
12:05PM	162462921	Quality of drink coffee drink influenced by sun exposure side in the Matas de Minas region, Minas Gerais, Brasil. Marcos A. Silva, University of State of Bahia, Barreiras, Brazil (M.A. Silva, A.C. Pinheiros, N.S. Sakiyama, A.d. Silveira, W.P. Ferreira, J.L. Rufino, T.K. Souza)
12:05PM	162449513	Teaching Engineering and Science Using a Project-Based Service-Learning Format Carmen T. Agouridis, University of Kentucky, Lexington, KY (C.T. Agouridis)

WEDNESDAY, JULY 20

Wednesday, July 20 - 10:30AM-12:15PM

SESSION 339

PLANT, ANIMAL, AND FACILITIES SYSTEMS POSTER SESSION - POSTERS

— Sponsored by PAFS

Moderator: Timothy Shepherd, Iowa State University, Ames, IA

LOCATION: Veracruz B

Poster #	Paper #	Title/Authors
61	162461942	Range and Variability of Midwest Pork Production Environmental Footprints Erin Cortus, South Dakota State University, Brookings, SD (E. Cortus, A.M. Schmidt, R. Stowell)
62	162461514	A review of life cycle assessment (LCA) on carbon footprint of beef production in US Zifei Liu, Kansas State University, Manhattan, KS (Z. Liu)
63	162461611	Broiler Industry Variation in To Production States: Farm Economics, Broiler Productivity and Management Practice Lingjuan W. Wang-Li, North Carolina State University, Raleigh, NC (Y. Zheng, L.W. Wang-Li)
64	162465456	Thermal amplitude impacts pig productivity loss in tropical conditions Irenilza A. Naas, Paulista University, Sao Paulo, Brazil (S.T. Machado, I.A. Naas, F.R. Caldara, R.G. Garcia)
65	162465521	Housing thermal comfort zone for weaned to growing pigs Irenilza A. Naas, State University of Campinas, Campinas, Brazil (Y.B. Tolon, I.A. Naas, M.S. Baracho, D.J. Moura)
66	162460247	Heat loss of fertile eggs on the road between the hatchery and hatcher Danilo F. Pereira, UNESP, Andradina, Brazil (G.F. Silva, D.F. Pereira)
67	162461357	Using bamboo as green roof: Evaluation of the thermal environment. Jofran L. Oliveira, Iowa State University, Ames, IA, United States (P. Esgoti, J.L. Oliveira, R. Pereira, M.C. Oliveira, F.A. Damasceno)
68	162460167	Respiratory volumes of CH₄, O₂ and CO₂ of goats and its association with air temperature and humidity Alex S. Maia, São Paulo State University, Jaboticabal, Brazil (A.S. Maia, S.T. Nascimento, C.C. Nascimento)
69	162460055	Evaluation of respiratory heat loss by evaporation and by convection in ruminants Cintia C. Costa, São Paulo State University, Jaboticabal, Brazil (C.C. Nascimento, A.S. Maia, R.G. da Silva, M. Chiquitelli Neto, L.Z. Camero, C.C. Costa)
70	162450519	Technique Comparisons of Integrity Assessment Methods for Open-circuit Respiration Chamber Measurement Jiangong Li, University of Illinois, Urbana-Champaign, Urbana, IL (J. Li, A. Green, L.F. Rodriguez, D.W. Shike)
71	162461458	Calibration of environmental chambers to measure gaseous emissions from dairy cows under simulated production settings Jessica Drewry, University of Wisconsin, Madison, WI (J. Drewry, C. Choi, J.M. Powell)
72	162461788	Updated wet-bulb temperature and wet-bulb depression data for process and ventilation design Joseph L. Purswell, USDA-ARS, Mississippi State, MS (J.L. Purswell)
73	162461410	Swine Finishing Room Infiltration Prediction and Use in Ventilation Design Harishchandra T. Jadhav, Iowa State University, Ames, IA (H.T. Jadhav)
74	162425886	Assessment of fan performances affected by vegetative environmental buffers Hong Li, University of Delaware, Newark, DE (H. Li, C. Zhang, S. Collier, J. Moyle, W. Brown)

75	162456704	Numerical economic evaluation on evaporative cooling pad control strategies for mechanically-ventilated growing-finishing swine bar Shang-Jen Yang, University of Illinois, Urbana, IL (S. Yang, X. Wang, R.S. Gates)
76	162459256	Quantitative identification of rate-limiting steps for methane and ammonia emissions from dairy wastewater to the atmosphere jiacheng shen, Northwest Irrigation and Soils Research Laboratory, Kimberly, AR (j. shen, A.B. Leytem, R.S. Dungan, D.L. Bjorneberg, A.C. Koehn)
77	2461094	Investigating the potential for using passive diffusion samplers to measure fenceline concentration and emission fluxes of ammonia and hydrogen sulfide at beef cattle feedyards Kenneth D. Casey, Texas A&M AgriLife Research, Amarillo, TX (K.D. Casey, G. Galvin, R.W. Todd, D. Parker, H.M. Waldrip)
78	162460072	Methane emissions in zebu cattle Alex S. Maia, São Paulo State University - UNESP, Jaboticabal, Brazil (L.Z. Camero, A.S. Maia, M. Chiquitelli Neto, C.d. Costa, P. Castro, E. Santos)
79	162459595	Surface wind speeds and simulated rainfall on GHG emission from stockpiled dairy manure: a laboratory study Boyui Ji, China Agricultural University, Beijing, China (Y. Wang, C. Wang, B. Ji, L. Ding, B. Li, Z. Shi)
80	162461473	Seasonal odor and gas emissions from a commercial broiler barn under Canadian Prairies climate Dandan Huang, University of Saskatchewan, Saskatoon, SK, Canada (D. Huang, H. Guo)
81	162460145	Methane emission and metabolic heat production of Nellore cattle Cintia C. Costa, Sao Paulo State University, Jaboticabal, Brazil (C.C. Costa, A.S. Maia, T.T. Berchielli, S.T. Nascimento, C.C. Nascimento)
82	162459918	Evaluating the Effectiveness of Vegetative Environmental Buffers in Mitigating Particulate Matter Emissions from Poultry Houses Michael Buser, Oklahoma State University, Stillwater, OK (Q. Yao, C.J. Hapeman, H. Li, M. Buser, J. Alfieri, J.D. Wanjura, L. McConnell, G. Holt, P. Downey, Z. Yang, A. Torrents)
83	162455276	Reduction of Ammonia and Particulate Matter by Spraying Acidic Electrolyzed Water onto Hen Litter of Aviary Houses – A Lab-scale Study Lilong Chai, Iowa State University, Ames, IA (L. Chai, Y. Zhao, H. Xin, T. Wang, A. Atilgan, M. Soupier)
84	162461224	Mitigating Ammonia and Volatile Organic Compounds (VOCs) Emissions from Poultry Houses Using Vegetative Environmental Buffers Michael Buser, Oklahoma State University, Stillwater, OK (Q. Yao, C.J. Hapeman, H. Li, M. Buser, J. Alfieri, L. McConnell, P. Downey, Z. Yang, A. Torrents)
85	162459748	Manure ammonia and green house gas emissions from beef cattle fed condensed tannins Terra Campbell, West Texas A&M University, Canyon, TX (T. Campbell, M. Rhoades, E. Bailey, D. Parker, A. Shreck)
86	162454934	Enhanced Ammonia Emissions from Mixed Gaseous Species in Dissolved Solution & Animal Wasteliquid Sang Ryong Lee, National Institute of Animal Science, Jeonju, Korea (the Republic of) (S. Lee)
87	162459373	Estimate contributions of prescribed rangeland burning in Kansas to ambient PM_{2.5} through source apportionment with Unmix reception model Yang Liu, Kansas State University, Manhattan, KS (Y. Liu, Z. Liu, R. Maghirang, D. Devlin, C. Blocksom)
88	162458150	Sensory enrichment for piglets welfare Kesia O. Miranda, Escola Superior de Agricultura "Luiz de Queiroz", Piracicaba, Brazil (K.O. Miranda, É.H. Ito, B.d. Possagnolo, I.C. Condotta, T.B. Brandl)

WEDNESDAY, JULY 20

- 89 **162459459** **The defects and solutions of the battery cage system for laying hens**
Dandan Kong, China Agricultural University, Beijing, China (P. Fang, H. Wang, F. Lv, Y. Yue, X. Chen, D. Kong)
- 90 **162461017** **Influence of Space Allowance on Production Performance and Mixing Behavior of Weaned Piglets**
Boyu Ji, China Agricultural University, Beijing, China (B. Hu, C. Wang, Z. Shi, B. Li, Z. Liu, B. Lin, B. Ji)
- 91 **162456546** **Nesting Behavior and Egg Production Pattern of Laying Hens in Enriched Colony Housing**
Jofran L. Oliveira, Iowa State University, Ames, IA (J.L. Oliveira, H. Xin, Y. Zhao, L. Li, K. Liu, K. Glaess)
- 92 **162461354** **Monitoring of Litter Quality in Broiler Commercial Farms Using Camera-Based Technology**
Daniel Berckmans, KU Leuven, Leuven, Belgium (A. Pena Fernandez, T. van Herlem, V. Exadaktylos, E. Vranken, D. Berckmans)
- 93 **162423348** **Effect of Milking Machine Working Vacuum on Operational Parameters of Electromagnetic Pulsator**
Xiaoming Li, China Agricultural University, Beijing, China (X. Li)
- 94 **162455147** **Comparative Efficiency of Lactation Curve Models Using Irish Experimental Dairy Farms Data**
Fan Zhang, Cork Institute of Technology, Cork, Ireland (F. Zhang, M. Murphy)
- 95 **162455659** **Reducing Temperature and Relative Humidity in Greenhouses Using Liquid Desiccant Dehumidification System**
Waleed Bin Masoud, University of Florida, Gainesville, FL (W. Bin Masoud, R. Bucklin, W. Porter, M. Correll, X. Zhao)
- 96 **162393524** **Toward Robust Performance Metrics for Plant Lighting Systems**
Daniel Ciolkosz, Penn State, University Park, PA (D. Ciolkosz, K. Pheil)
- 97 **162458516** **Estimating Methane Emissions from Manure on the Open Lots of a Dairy Farm**
Chaoyuan Wang, China Agricultural University, Beijing, China (L. Ding, G. Zhang, Z. Shi, B. Li, C. Wang)
- 98 **162459441** **Reality producers of Bastos/SP about animal welfare and legislation in the commercial posture**
Danilo F. Pereira, São Paulo State University, Garça, Brazil (G.P. Sousa, D.F. Pereira, K. Watanabe, P.F. Cata-neo)
- 99 **162458096** **Optimization on Roller for Small-scale Pellet Mill Based on Discrete Element Method**
Hongying Wang, China Agricultural University, BEIJING, China (F. PENG, H. Wang)
- 100 **162470568** **Effects of Nitric Oxide on Photosynthesis and Related Genes in leaves of Cucumber Seedlings Under Low Temperature**
Jin-xia Cui, Shihezi University, Shihezi City, China (J. Cui, C. Xiao, W. Xu, H. Liu, Z. Zhang)
- 101 **162470587** **Establishment and optimization of start codon targeted polymorphism (SCoT) system and identification of Korla Fragrant Pear excellent clones**
Jian-xin Niu, Shihezi University, Shihezi, China (J. Niu)

Wednesday, July 20 - 10:30AM - 12:35PM

SESSION 340

FOOD SAFETY IN POSTHARVEST STORAGE – Sponsored by PRS-703

Moderator: Ruplal Choudhary, Southern Illinois University, Carbondale, IL

LOCATION: Fiesta 3

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162461745	Global Food Security – Perspectives on mycotoxins in rice and associated postharvest losses Supriya Thote, University of Arkansas, Fayetteville, AR (S. Thote, G.G. Atungulu)
10:50AM	162461946	Antimicrobial efficacy of liposomes containing d-Limonene and Its effects on shelf life of blueberry Arosha Loku Umagiliyage, Southern Illinois University Carbondale, Carbondale, IL (A. Loku Umagiliyage, R. Choudhary, N. Becerra-Mora, P. Kohli)
11:05AM	162462788	Development of a High Voltage Atmospheric Cold Plasma Treatment to Sanitize Whole Cantaloupe Kevin M. Keener, Iowa State University, Ames, IA (K.M. Keener, J. haury, Z. Wan, X. Yepez, J. Jensen, T. Lim, B. Applegate)
11:20AM	162462970	The Effect of High Voltage Atmospheric Cold Plasma on the Safety and Quality of Fresh-Cut Cantaloupe Kevin M. Keener, Iowa State University, Ames, IA (J. Jensen, X. Yepez, T. Lim, P. Meyer, B. Applegate, K.M. Keener)
11:35AM	162461152	Detection of Aflatoxin in rice grains in postharvest storage for food safety in Bangladesh Md A. Ali, Bangladesh Agricultural University, Mymensingh, Bangladesh (M.A. Ali, A. Zahan, M. Alam)
11:50AM	162460256	Drying and Decontamination of Corn Using a Pilot-Scale Continuous-Flow Radiant Heating System Shantae Wilson, Department of Food Science & Division of Agriculture University of Arkansas Fayetteville, Fayetteville, AR (S. Wilson, G.G. Atungulu, G.A. Olatunde)
12:05PM	162461712	Kinetics of mold growth and dry matter loss for hybrid rough rice Supriya Thote, University of Arkansas, Fayetteville, AR (S. Thote, G.G. Atungulu)
12:20PM	162460456	Superabsorbent polymers (SAP) for drying maize and reduction of Aflatoxin formation Duncan O. Mbugu, University of Nairobi, Nairobi, Kenya (D.O. Mbugu, R. Negrini, L. Nyakundi, S. Kuate, R. Bandyopadhyay, B. Torto, R. Mezzenga)

Wednesday, July 20 - 10:30AM - 1:00PM

SESSION 341

DRYING, HANDING, AND STORAGE - PART 2 – Sponsored by PRS-702

Moderator: Dirk Maier

LOCATION: Fiesta 4

Time	Paper #	Title/Authors
10:30AM		Introduction
10:35AM	162448464	Chilling Aeration to Control Pests and Maintain Grain Quality during In-Bin Storage of Wheat in Kansas Alejandro Morales-Quiros, Kansas State University, Manhattan, KS (A. Morales-Quiros, C. Campabadal, D. Maier, S. Lazzari, F. Lazzari, S. Cook, T.W. Phillips)
10:50AM	162456481	Storing Peanuts in Grain Bags Christopher Butts, USDA ARS, Dawson, GA (C. Butts, J.K. Ward)
11:05AM	162457539	Is the storage of winter canola impacted by variety? Kevin G. Moore, Oklahoma State University, Stillwater, OK (K.G. Moore, C. Jones)
11:20AM	162460056	Control of relative humidity to inhibit shrinkage of white radish during hot air drying Yanhong Liu, China Agricultural University, Beijing, China (Y. Xie, Z. Gao, M. Okos, Y. Liu)

WEDNESDAY, JULY 20

- 11:35AM 162461138 Performance of STR and SBD dryers in two different paddy harvesting seasons in Bangladesh**
Chayan K. Saha, Bangladesh Agricultural University, Mymensingh, Bangladesh (C.K. Saha, M. Alam, M.A. Momin, M. Alam)
- 11:50AM 162461378 Effect of Ethyl oleate treatment on drying of bitter gourd**
Sabyasachi Mishra, National Institute of Technology, Rourkela, Odisha, India, Rourkela, India (S. Athinayanan, S. Mishra, R.C. Pradhan)
- 12:05PM 162461355 Optimization of Solar Thermal Dryer Designs for the Production of Sun-Dried Apricots (*Prunus armeniaca*)**
Fatima S. Alleyne, USDA, Albany, CA (F.S. Alleyne, M. Ferry, R.R. Milczarek)
- 12:20PM 162461870 Natural air Drying and Storage of Soybean Seed and Implications on Germination Rates, Vigor, and Oil Quality**
Gbenga A. Olatunde, University of Arkansas, Fayetteville, AR (Z. Young, G.G. Atungulu, G.A. Olatunde, S. Sadaka, A. Proctor)
- 12:35PM 162462876 Odor and volatile compounds emitted from off-odor corn with ozone treatment**
Patrick T. Murphy, Agricultural Product Storage, LLC, Ames, IA (P.T. Murphy, S. Trabue, K. Scoggin)

Wednesday, July 20 - 7:30AM - 10:00AM

SESSION 342

ETHICS IN ENGINEERING - VIDEO COMPETITION – Sponsored by EOPD-412

Moderator: Scott Mueller

LOCATION: Yucatan 2

The ASABE EOPD-412 committee invites ASABE pre-professionals and young professionals to participate in the 2016 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 a practice or research. Winners will receive a travel grant to the 2016 ASABE Annual International Meeting where winning videos will be presented.



2017 ASABE ANNUAL INTERNATIONAL MEETING

Spokane, Washington :: July 16-19, 2017





American Society of
Agricultural and Biological Engineers

MEMBERSHIP APPLICATION

APPLICANT INFORMATION

Mr. Ms. Dr. Prof. (Please circle)	Male Female (Please circle)	Graduate student: Yes No (Please circle)
New Member Reinstating (Please circle)	Date of Birth:	Name:
Home Address:		
City:	State/Province:	ZIP/Postal Code:
Country:	Phone:	Email:

EMPLOYER INFORMATION

Employer:	Title:	Phone:
Address:		
City:	State/Province:	ZIP/Postal Code:
Country:		
Mail Preference: Home Work (Please circle)	Hard copy of Resource magazine? No Yes (Please circle)	

EDUCATION PROFESSIONAL

Engineering Degree: Yes No (Please circle)

Degrees & University Name(s):

ENGINEERING LICENSURE

Professional Engineer (US or Canada) Professional Engineer (Other)
Engineering Intern (Please circle)

TECHNICAL INTEREST AREAS

Please select one primary and one secondary technical interest area.

Primary: Secondary:

Technical Interest Areas

ASE - Applied Science & Engineering
AQ - Aquaculture
EOPD - Education, Outreach & Professional Development
ES - Energy Systems
ESH - Ergonomics, Safety, & Health
FE - Forest Engineering
ITSC - Information Technologies, Sensors & Control Systems
MS - Machinery Systems
NRES - Natural Resources & Environmental Systems
PAFS - Plant, Animal, & Facility Systems
PRS - Processing Systems

EMPLOYER TYPE

Please select your employer type:

Employer Type

AGB - Agribusiness
ASSN - Association
CONS - Consultant
DIST - Distributor
EDUC - University/College
ESTA - Experiment Station
FARM - Producer
GOVT - Government Agency
MFC - Component Manufacturer
MFE - Equipment Manufacturer
PROC - Processor
SUPL - Supplier
Other:

DUES & PAYMENT OPTIONS

DUES AMOUNTS All prices are in US dollars. Please make checks payable to ASABE.

Graduate students: \$40 Aged 65-74: \$63
Aged 34 & under: \$114 Aged 75-89: \$13
Aged 35-64: \$150 Aged 90+: Free

One-Time Application Fee: \$10

Total Amount: \$ I was referred to ASABE by:

Payment: Check Credit Card (Please circle)	Charge to: Visa MasterCard American Express Discover (Please circle)
Name on Card:	Card Number:
Exp Date:	Security Code:
Signature:	

Please return application and payment to:

ASABE Membership Department
2950 Niles Road
St. Joseph, MI 49085-9659 USA

Questions? 800/371-2723, 269/429-0300; 269/429-3852 Fax; memb@asabe.org; www.asabe.org