

WEDNESDAY, JULY 19

7:50AM	1700388	<p>Manganese affect biological pretreatment of wheat straw and poplar with varied but efficient ways for saccharification Xiao Fu, Washington State University, Pullman, Washington United States (Xiao Fu)</p>
8:05AM	1700518	<p>Thermal behavior and kinetics of pyrolysis of the ball-milling pine sawdust Xiaopeng Bai, China Agricultural University, Beijing, China, People's Republic of (Xiaopeng Bai, Guanghui Wang)</p>
8:20AM	1701049	<p>Bio-organosolv Pulping of Pine Chips with <i>Trametes versicolor</i> for Enhanced Enzymatic Hydrolysis and Lignin Extraction Jin-Woo Kim, United States Pulping University, Fayetteville, Arkansas United States (Jin-Woo Kim)</p>
8:35AM	1701432	<p>Butanol production from fungal pretreated lignocellulosic biomass: study of fermentation inhibitors Juliana Vasco-Correa, Ohio State University, Wooster, Ohio United States (Juliana Vasco-Correa, Thaddeus Ezeji, Yebo Li)</p>
8:50AM	1701499	<p>Understanding effects of mineral salts in biomass on biomass pretreatment – a case for switchgrass Fnu Fitria, Washington State University, Richland, Washington United States (Fnu Fitria, Libing Zhang, Zheming Wang, Steven Fransen, Bin Yang)</p>

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 303

HYPERSPECTRAL IMAGING

APPLICATIONS PART 1 – Sponsored by

ITSC-348

Moderator: Kurt Lawrence, USDA ARS

Location:201A

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1701010	<p>Hyperspectral Remote Sensing for Detection of Early Blight (<i>Alternaria solani</i>) Disease in Potato Plants Prior to Visible Disease Symptomology Daniel Atherton, Western Illinois University, Macomb, IL United States (Daniel Atherton, Ruplal Choudhary, Dennis Watson)</p>
8:05AM	1701344	<p>Transfer of calibration between hyperspectral imaging systems and pathogen detection Kurt Lawrence, USDA ARS, Athens, GA United States (Kurt Lawrence, Seung Chul Yoon, Bosoon Park, Gerald Heitschmidt)</p>
8:20AM	1700361	<p>Hyperspectral Microscopic Imaging for Pathogen Detection at Cellular Level Bosoon Park, USDA ARS, Athens, GA United States (Bosoon Park, Matthew Eady, Seung-Chul Yoon, Kurt Lawrence, Gary Gamble)</p>
8:45AM	1701055	<p>Data fusion of two hyperspectral imaging systems for blueberry bruising detection Shuxiang Fan, University of Georgia, Athens, Georgia United States (Shuxiang Fan, Changying Li, Wenqian Huang)</p>
9:00AM	1700844	<p>Characterization of cell wall compositions of biomass sorghum with high throughput phenotyping Piyush Pandey, University of Nebraska-Lincoln, Lincoln, NE United States (Piyush Pandey, Yufeng Ge, Geng Bai, James Schnable, Sibel Irmak, Vincent Stoerger)</p>
9:15AM	1700872	<p>Detection of aphid infestation on pakchoi (<i>Brassica chinensis</i>) based on visible/near-infrared hyperspectral imaging technology Yangyang Fan, Zhejiang University, Hangzhou, Zhejiang China, People's Republic of (Zhengjun Qiu, Wenhua Wu)</p>
9:30AM	1700274	<p>Hyperspectral imaging for visualize the chemical component distribution in food Xiaobo Zou, Jiangsu University, Zhenjiang, China, People's Republic of (Xiaobo Zou, Yanxiao Li, Jiyong Shi)</p>

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 304

APPS IN AGRICULTURAL

APPLICATIONS – Sponsored by ITSC-254

Moderator: Joe Dvorak, Univ of Kentucky

Location: 201B

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700242	<p>Automated solid state canopy delivery (SSCD) system to deliver mist-cooling to increase winter chill for dormancy and bud break Yiannis Ampatzidis, California State University, Bakersfield, Bakersfield, California United States (Daryl Trudeau, Lu Zhang, Louise Ferguson, Yiannis Ampatzidis)</p>
7:50AM	1701116	<p>On-line detection of Chinese rice wine of different ageing time using portable electronic nose based on cloud server Xize Xiao, (Xize Xiao)</p>
8:05AM	1701198	<p>Quantifying Crop Water Requirements using the Water Irrigation Scheduler for Efficient Application (WISE App) in northeast Colorado Allan Andales, Colorado State University, Fort Collins, Colorado United States (Allan Andales, Jose Chavez)</p>
8:20AM	1701478	<p>Handheld, Open-source Potentiostat for High Performance Electrochemical Analysis in the Field Jose Reyes-De-Corcuera, University of Georgia, Athens, Georgia United States (Jose Reyes-De-Corcuera, Daniel Jenkins)</p>
8:35AM	1701479	<p>Open-Source Android App for Facilitating Customized Data Acquisition, Visualization and Control Jose Reyes-De-Corcuera, University of Georgia, Athens, Georgia United States (Jose Reyes-De-Corcuera, Daniel Jenkins)</p>

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 305

MACHINE VISION FOR PRECISION

AGRICULTURE – Sponsored by ITSC-312,

MS-54

Moderator: Daeun Choi, Univ of Florida

Location: 201C

Time	Paper#	Title/Author
7:30AM		Introduction
7:35PM	1700076	<p>A performance comparison of RGB, NIR, and depth images in immature citrus detection using deep learning algorithms for yield prediction Daeun Choi, University of Florida, Gainesville, FL United States (Daeun Choi, Won Suk Lee, John Schueller, Reza Ehsani, Fritz Roka)</p>
7:50AM	1700164	<p>A Prototype of an Immature Citrus Fruit Yield Mapping System Hao Gan, University of Florida, Gainesville, Florida United States (Hao Gan, Wonsuk Lee, Victor Alchanatis)</p>
8:05AM	1700241	<p>Vision-Based Plant Disease Detection System Using Transfer and Deep Learning Yiannis Ampatzidis, California State University, Bakersfield, Bakersfield, California United States (Albert Cruz) (Albert Cruz, Luigi De Bellis, Andrea Luvisi, Yiannis Ampatzidis)</p>
8:20AM	1700349	<p>Early-season Vineyard Shoot and Leaf Estimation Using Computer Vision Techniques Tanvir Parhar, Carnegie Mellon University Robotics, Pittsburgh, Pennsylvania United States (Harjatin Baweja) (Tanvir Parhar, Harjatin Baweja, Stephen Nuske)</p>
8:35AM	1700925	<p>Machine Vision for Strawberry Detection Jeremy Kerfs, California Polytechnic State University San Luis Obispo, San Luis Obispo, Ca United States (Zachary Eagan) (Jeremy Kerfs, Bo Liu, Zachary Eagan, Saber Abdoli)</p>

WEDNESDAY, JULY 19

8:50AM	1701015	Geometric Properties Measurement of Food Grains using Image Thresholding Technique in Matlab Manish Patel, Indian Institute of Technology, Kharagpur, West Bengal India (Manish Patel, Hifjur Rahman)
9:05AM	1701104	Machine Vision Yield Monitor for Vegetable Crops Amanda Boatswain Jacques, McGill University, Dollard des Ormeaux, Quebec Canada (Amanda Boatswain Jacques) (Amanda Boatswain Jacques, Viacheslav Adamchuk, Guillaume Cloutier, Maxime Leclerc)

**Wednesday, July 19 – 7:30AM-10:00AM
SESSION 306**

UAV FOR SENSING, IMAGING, AND CROP MATERIAL APPLICATION - PART 1 – Sponsored by ITSC-318, MS-58, MS-60, ITSC-312
Moderator: Yan-Fu Kuo, National Taiwan Univ
Location: 202A

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700027	Monitoring and Maintenance of Hydric Systems in Mexican Agriculture by Using Unmanned Aerial Systems (UAS) Jorge Flores-Velazquez, Mexican Institute of Water Technology, Morelos, Mexico (Jorge Flores-Velazquez, Waldo Ojeda, Abraham Rojano)
7:50AM	1700050	Spectral response of nitrogen of corn crops in fields using hyperspectral images by Unmanned Aerial Vehicle (UAV) Chuanqi Xie, University of Minnesota, Saint Paul, Minnesota United States (Chuanqi Xie, Ce Yang, Gregg Johnson, Forrest Izuno)
8:05AM	1700051	Using RGB images collected by Unmanned Aerial Vehicle (UAV)-based camera to predict wheat yields in the field Chuanqi Xie, University of Minnesota, Saint Paul, Minnesota United States (Chuanqi Xie, Ce Yang, James Anderson, Todd Colten)
8:20AM	1700272	Application of satellite, unmanned aircraft system, and ground-based sensor data for precision agriculture: a review Joshua Rudd, North Carolina State University, Raleigh, NC United States (Joshua Rudd, Gary Roberson, John Classen)
8:35AM	1700299	Deterring Birds from Wine Grapes Using Unmanned Aerial Systems Santosh Bhusal, Washington State University, Prosser, WA United States (Santosh Bhusal, Shivam Goel, Kapil Khanal, Hongxing Peng, Manoj Karkee, Matthew Taylor, Long He)
8:50AM	1700971	Development of a hyperspectral snapshot imaging sensor for multirotor unmanned aerial vehicle remote sensing Haiyan Cen, Zhejiang University, Hangzhou, China, People's Republic of (Presenters: Haiyan Cen, Jiangpeng Zhu) (Haiyan Cen, Wenxin Yin, Jiangpeng Zhu, Liang Wan, Yong He)
9:05AM	1701070	The Identification of Oilseed Rape and Weeds Based on Multispectral Imaging Techniques and the Simulation Platform of Unmanned Aerial Vehicle Jiangpeng Zhu, Zhejiang University, Hangzhou, China, People's Republic of (Jiangpeng Zhu, Lei Feng, Chang Wang)
9:20AM	1701155	Plant count and canopy coverage determination using unmanned aerial system image processing Dharani Suresh Babu, North Dakota State University, Fargo, North Dakota United States (Dharani Suresh Babu, Igathinathane Cannayen, Joao Paulo Flores)

**Wednesday, July 19 – 7:30AM-10:00AM
SESSION 307**

MACHINERY SYSTEMS POSTER SESSION – Sponsored by MS
Moderator: Stavros Vougioukas, Univ of California Davis
Location: 111ABC

Poster#	Paper#	Title/Author
1	1700030	Development of Performance Evaluation Systems for Vegetable Transplanter Sangdae Lee, Iowa State University, Ames, Iowa United States (Presenter: Yeon-Soo Kim) (Yeon-Soo Kim, Yong-Joo Kim, Jeong-Gil Kim, Young-Joo Kim, Sangdae Lee)
2	1700039	Design and testing of a self-propelled air-blowing greenhouse sprayer Chunhua Gao, China Agricultural University, Beijing, Beijing China, People's Republic of (Presenter: Jinkui Feng) (Chunhua Gao, Lijun Qi, Yalei Wu, Jinkui Feng, Zhilun Yang)
3	1700040	Experimental study on loosening depth stability for self-excited vibrating subsoiler Wang Yunxia, China Agricultural University, Beijing, Tsinghua East Road, No. 17 China, People's Republic of (Presenter: Tao Cui) (Yunxia Wang, Li Yang, Dongxing Zhang, Tao Cui, Dandan Han, Tianliang Zhang)
4	1700190	Analysis of Emissions of a Diesel Cycle Engine using Biodiesel of the Macaw Palm Oil Carlos Eduardo Silva Volpato, Universidade Federal de Lavras, Lavras, Minas Gerais Brazil (Carlos Eduardo Silva Volpato, Ronald Leite Barbosa, Eduardo Lordelo Volpato)
5	1700374	Development of Non-linear Tractor Model for Constructing Tractor Driving Simulator Masahisa Watanabe, Tokyo University of Agriculture and Technology, Tokyo, Japan Japan (Masahisa Watanabe, Kensi Sakai)
6	1700415	Effects of seeds morphology on pressure distribution in the cone hole of air-blowing seed-metering device based on CFD Dandan Han, China Agricultural University, Beijing, China, People's Republic of (Presenter: Tao Cui) (Dandan Han)
7	1700424	Design and Simulation of Hand-pushing Yak Dung Pickup Forklift Zhao Wang, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Guanghui Wang, Decheng Wang, Xiaopeng Bai, Dingding Li, Zhiheng Lu, Yan Yu)
8	1700431	The Flow-field Optimization of Vacuum Precision Seed-metering Device with Synchronous Plate and Chamber Based on CFD Bingxin Yan, China Agricultural University, Peking, Peking China, People's Republic of (Presenter: Tao Cui) (Bingxin Yan, Dongxing Zhang, Li Yang, Tao Cui, Huirong Jin, Xiaohui Bian)
9	1700449	Advances in residue management mechanisms of zero-tillage planters Diogenes Antille, University of Southern Queensland, Toowoomba, QLD Australia (Kojo Aikins, Diogenes Antille, Troy Jensen, John Blackwell)
10	1700458	All terrain adaptive locomotion chassis equipped with ultra-low-pressure tyres (ATALCULPT) to reduce mechanical soil compaction Pingyi Liu, China Agricultural University, Beijing, China, People's Republic of (Presenter: Ran Yi) (Pingyi Liu, Ran Yi)
11	1700467	Experimental Study on the Performance of Rollers with Reverse Pull Stalker in Corn Plate Kehong Li, China Agricultural University, Beijing, China, People's Republic of (Presenter: Tao Cui) (Kehong Li, Zhendong Wang, Youqiang Ding, Dongxing Zhang, Tao Cui, Li Yang)

WEDNESDAY, JULY 19

- | | | | | | |
|----|---------|---|----|---------|---|
| 12 | 1700514 | <p>Design and analysis on a small fruit collecting device with flank deployable and foldable mechanisms
Xiaoqiang Du, Zhejiang Sci-Tech University, China, People's Republic of Xiaoqiang Du, Dangwei Li, Dan Wang, Jianxiang Du, Chuanyu Wu)</p> | 26 | 1700773 | <p>Minimized Cost Programming Method for Farming Machines' Distribution Based on Reliability Analysis
Pengtao Li, Beijing, China, People's Republic of (Pengtao Li, Zhian Zheng)</p> |
| 13 | 1700551 | <p>Improved grain type corn harvester threshing device
Xu Wang, China Agricultural University, Beijing, China, People's Republic of (Hao Liu, Yuan Su, Xu Wang, Guan Wang, Yang Xu)</p> | 27 | 1700774 | <p>An Approach to Calculate Linear Abrasive Wear Rate of Soil-engaging Implements' Surfaces
Pengtao Li, Beijing, China, People's Republic of (Pengtao Li, Zhian Zheng)</p> |
| 14 | 1700583 | <p>Effect of controlled traffic farming on energy savings in Australian grain cropping systems
Adnan Luhaib, Toowoomba, QLD Australia (Diogenes L. Antille) (Adnan Luhaib, Jeff Tullberg, Guangnan Chen, Mahmood Hussein, Diogenes Antille)</p> | 28 | 1700782 | <p>Coaxial contra-rotating sugarcane base cutter
Xiuheng Wu, Beijing, China, People's Republic of (Xiuheng Wu, Shaochun Ma, Wanhao Zhang, Zhenghe Song)</p> |
| 15 | 1700586 | <p>Agronomic performance of wheat (<i>Triticum aestivum</i> L.) and fertiliser use efficiency as affected by controlled and non-controlled traffic of farm machinery
Adnan Luhaib, Toowoomba, QLD Australia (Presenter: Diogenes L. Antille) (Mahmood A. H. Hussein, Diogenes L. Antille, Guangnan Chen, Adnan A. A. Luhaib, Shreevatsa Kodur, Jeff N. Tullberg)</p> | 29 | 1700803 | <p>Study on the Changing Rule of the Dielectric Properties of the Damaged Red Jujube in the Drying Process
Can Hu, Tarim University, Alar, Xinjiang China, People's Republic of (Presenter: Xiaoguang Dong) (Can Hu, Xiuying Tang, Bing Lu, Chaoji Liu, Xiaotong Zhu, Xiaoguang Dong)</p> |
| 16 | 1700591 | <p>Structure Design of Mixed-flow Dryer Based on EDEM
Hao Lv, Beijing, China China, People's Republic of (Hao Lv)</p> | 30 | 1700811 | <p>Evaluation of the Measured Acceleration Produced by the Conventional Tap Method and a Developed Shaker Machine for Asian Citrus Psyllid
Muna Abbas, University of Florida, Gainesville, Florida United States (Presenter: Arash Toudeshki) (Muna Abbas, Reza Ehsani, Ray Bucklin, Wonsuk 'Daniel' Lee, John Schueller, Kirsten Pelz-Stelinski, Arash Toudeshki)</p> |
| 17 | 1700594 | <p>Material movement analysis of drying tower based on discrete element theory
Hao Lv, Beijing, China China, People's Republic of (Hao Lv)</p> | 31 | 1700885 | <p>Design and Test on the Pneumatic Taking Seedling Claw and Taking Seedling Method of Auto-Transplanter
Qizhi Yang, School of Agricultural Equipment Engineers, zhenjiang, jiangsu Province China, People's Republic of (Qizhi Yang, Mengtao Sun, Jianping Hu, Jing Cai, Li Xu, Xinyi Shi, Ibrar Ahamd, Lingqiang Guo)</p> |
| 18 | 1700601 | <p>A Non-Destructive Assessment of Tomato Stem Diameter Using Natural Light under Greenhouse condition
Teng Hang, Jiangsu University, Zhenjiang, China, People's Republic of (Teng Hang)</p> | 32 | 1700931 | <p>Sieving Rate Influential Factor Analysis of Multi-dimensional Maggots and Substrates Machine
Qizhi Yang, School of Agricultural Equipment Engineers, Zhenjiang, China, People's Republic of (Qizhi Yang, Jing Cai, Mengtao Sun, Xinyi Shi, Li Xu, Ibra Ahamd, Xin Zhou, Zhihuan Wang)</p> |
| 19 | 1700652 | <p>Vibrations Levels Assessment of a Robotic Intra-Row Weeder Using Low-Cost Data Acquisition System
Geice Villibor, Universidade Federal de Viçosa, Iowa State University, Ames, Iowa United States (Presenter: Brian Steward) (Geice Paula Villibor, Brian Steward, Greg Luecke, Daniel Marçal de Queiroz, Lie Tang, Safal Kshetri)</p> | 33 | 1701125 | <p>Movement Simulation of Convey Part of the Plasma Treatment Processor
Jinkui Feng, China Agricultural University, Beijing, China, People's Republic of (Jinkui Feng, Aiping Pang, Decheng Wang)</p> |
| 20 | 1700697 | <p>Research on motion Trajectory and Dynamic in Reciprocating Cutter of maize Stalk
Xu Wang, China Agricultural University, Beijing, China, People's Republic of (Yuan Su, Zheng Bao, Hao Liu, Xu Wang, Guan Wang, Yang Xu)</p> | 34 | 1701126 | <p>Simulation of Seeds Movement in Plasma Treatment Equipment Base on EDEM
Jinkui Feng, China Agricultural University, Beijing, China, People's Republic of (Jinkui Feng, Aiping Pang, Decheng Wang)</p> |
| 21 | 1700725 | <p>Effects of Tree Architecture and Shaking Frequency and Amplitude on Fruit Removal Efficiency and Damage in Mechanical Harvesting of Apples
Shaochun Ma, China Agricultural University, Beijing, China, People's Republic of (Ming Liu, Shaochun Ma, Guangyou Yang, Ruipei Xie, Qi Huang, Wanhao Zhang)</p> | 35 | 1701159 | <p>Techno-economic evaluation of corn and soybean production under different management practices
Asmita Khanal, Ohio State University, Wooster, OH United States (Asmita Khanal, Ajay Shah, Luis Huezo)</p> |
| 22 | 1700727 | <p>Effect of Air Pressure and shaking Frequency on Fruit Damage in Mechanical Harvesting of Apples
Shaochun Ma, China Agricultural University, Beijing, China, People's Republic of (Shaochun Ma, Manoj Karkee, Han Fu, Daozong Sun, Qin Zhang)</p> | 36 | 1701219 | <p>Challenges in Establishing Mechanization Options for Cacao Harvesting in East Luwu, Indonesia
Cininta Pertiwi, University of Florida, Gainesville, FL United States (Cininta Pertiwi, Reza Ehsani, Keith Ingram)</p> |
| 23 | 1700730 | <p>The design and experiment of longitudinal axial-flow maize threshing and separating test bench
Zhe Qu, China Agricultural University, Beijing, China China, People's Republic of (Zhe Qu, Tianliang Zhang, Kehong Li, Li Yang, Tao Cui, Dongxing Zhang)</p> | 37 | 1701319 | <p>UAV Thermal Mapping of Harvested Cropland in Winter
Robert Freeland, University of Tennessee, Knoxville, TN United States (Robert Freeland, Barry Allred, Michael Buschermohle, Neal Eash, Tyson Raper, Shawn Butler, Lori Duncan)</p> |
| 24 | 1700731 | <p>Study in the excitation parameters on the dynamic response of the Ginkgo fruit
Yan Xuan, (Yan Xuan, Linyun Xu, Huan Lin)</p> | 38 | 1701350 | <p>An intelligent crop cultivation system based on computer vision with a multiplex switch approach
Chung-Liang Chang, National Pingtung University of Science and Technology, Pingtung County, Taiwan, R.O.C. China, Republic of (Taiwan) (Chung-Liang Chang, Kuan-Min Lin, Wei-Lun Fu)</p> |
| 25 | 1700772 | <p>Analysis of the hickory tree motion under the excitation of eccentric-type vibratory mechanism
Xiaoqiang Du, Zhejiang Sci-Tech University, Hangzhou, China, People's Republic of (Presenter: Jianxiang Du) (Nannan Xu, Xiaoqiang Du, Enxiao Liu, Dangwei Li, Jianxiang Du, Chuanyu Wu)</p> | 39 | 1701396 | <p>A Low-Cost System for Instrumenting LiDAR on an Unmanned Aircraft System
Michael Sama, University of Kentucky, Lexington, KY United States (Presenter: Christopher Good) (Christopher Good, Michael Sama, Saket Dasika, Ali Hamidisepehr, Ricky Mason)</p> |

WEDNESDAY, JULY 19

- 40 1701413 **Comparisons of Precision Planter Seeding Rate Based on Meter Drive Type**
Joseph Dvorak, University of Kentucky, Lexington, KY United States (Joseph Dvorak, Anderson Gomes, Roberto Silva, Joseph Rounsaville)
- 41 1701464 **Engineering Hybrid Unmanned Aerial Systems and Autonomous Surface Vehicles to Address Aquacultural and Aquatic Challenges**
Steven Hall, North Carolina State University, Raleigh, NC United States (Steven Hall, Randy Price, Daniel Smith, Matthew Campbell)
- 42 1701562 **Thermotherapy with Horticulture Mineral Oil for pear psylla management**
Haitham Bahlol, Washington State University, Prosser, Washington United States (Haitham Bahlol) (Haitham Bahlol, Lav Khot, Gwen-Alyn Hoheisel)
- 43 1701700 **Weed vs. Crop Differentiation Using Crop Marking Systems**
Hannah Joy Pheasant, University of California, Davis, California United States (Hannah Joy Pheasant)

- 53 1701657 **Stress Factors Detection for Avocado Trees by Using Spectroradiometric and 5 Bands Camera ILS (Incident Light Sensors)**
Jaafar Abdulridha, University of Florida, Lake Alfred, Florida United States (Jaafar Abdulridha, Reza Ehsani, Amr Abd-Elrahman)

**Wednesday, July 19 – 7:30AM-10:00AM
SESSION 308 PRECISION AGRICULTURE - POSTERS** – Sponsored by MS-54
Moderator: Chenghai Yang, USDA ARS

- | Poster# | Paper# | Title/Author |
|---------|---------|---|
| 44 | 1700124 | Web-based Real-Time Temperature Inversion Determination for Recommending Timing of Aerial Applications in the Mississippi Delta
Yanbo Huang, USDA ARS CPSRU, Stoneville, MS United States (Yanbo Huang, Daniel Fisher, Steven Thomson, Mark Silva, Larry Heatherly) |
| 45 | 1700432 | The development and suggestion of King grass in China
Bingnan Ye, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Bingnan Ye, Decheng Wang, Guanghui Wang, Yong You, Qingyun Sun) |
| 46 | 1700570 | Satellite imagery explains spatiotemporal variation in maize response to fertilizer nitrogen
Vijaya Joshi, University of Minnesota, St Paul, MN United States (Vijaya Raj Joshi, Jeffrey A. Coulter, Axel Garcia y Garcia) |
| 47 | 1700712 | Research of Crop Disease Detection Based on Image Processing Technology
Xunsheng Ji, Jiangnan University, Wuxi, Jiangsu China, People's Republic of (Xunsheng Ji) |
| 48 | 1700892 | Determination of Soil Moisture Content, Electrical Conductivity and Nitrogen Level Relationship
Dr. Ali Mirzakhani Nafchi, Clemson University, Blackville, SC United States (Presenter: Hasan Mirzakhani Nafchi, Indra Mani, Ali Mirzakhani Nafchi) |
| 49 | 1701269 | Utilizing Precision Ag Tools to Facilitate On-Farm Research
Elizabeth Hawkins, The Ohio State University, Wilmington, Ohio United States (Elizabeth Hawkins, John Fulton) |
| 50 | 1701294 | Evaluating Precision Planting of Coated Extra-large Confection Sunflower Kernels
Harjot Sidhu, North Dakota State University, Fargo, ND United States (Presenter: Ewumbua Monono) (Harjot Sidju, Burton Johnson, Ewumbua Monono, Ganesh Bora, Dennis Wiesenborn) |
| 51 | 1701389 | Non-destructive quick detection based on Vis-NIR spectra for content of soil available nitrogen
Xiaoguang Dong, China Agricultural University, Beijing, China, People's Republic of (Yangmuyu Su, Xiuying Tang, Xiaoguang Dong, Yankun Peng) |
| 52 | 1701428 | Development of an accurate and low-cost positioning system for overhead irrigation machines
A Mirzakhani Nafchi (A. Mirzakhani Nafchi, Jose Payero, Rebecca Davis) |

**Wednesday, July 19 – 7:30AM-10:00AM
SESSION 310 ADVANCES IN EVAPOTRANSPIRATION RESEARCH** – Sponsored by NRES-21
Moderator: Devendra Amatya, US Forest Service
Location: 202B

- | Time | Paper# | Title/Author |
|--------|---------|---|
| 7:30AM | | Introduction |
| 7:35AM | 1700926 | Dynamics of Leaf and Canopy Stomatal Resistance and Transpiration of Irrigated Maize under Continuous No-Till and Disk-Till
Vivek Sharma, University of Wyoming, Powell, Wyoming United States (Vivek Sharma, Suat Irmak) |
| 7:50AM | 1700025 | Evaluation of Evapotranspiration Models for Water-leaf crop using Data from Lysimeter
Precious Egbuikwem, Imo State Polytechnic, Umuagwo, Owerri, Imo Nigeria (Precious Egbuikwem, Gregory Obiechefu) |
| 8:05AM | 1700830 | Satellite-informed modeling of almond and walnut evapotranspiration in California
Lee Johnson, University Corporation at Monterey Bay, Mountain View, CA United States (Lee Johnson, Allan Fulton, Richard Rosecrance, Michael Cahn) |
| 8:20AM | 1700912 | Use of eddy-covariance methods to “calibrate” simple estimators of evapotranspiration
David Sumner, USGS USGS.GOV, Lutz, FL United States (David Sumner, Jeffrey Geurink, Amy Swancar) |
| 8:35AM | 1700533 | Evaluation of Temperature Based Evapotranspiration Models in Subtropical Humid Climate of India
Ashish Pandey, Indian Institute of Technology, Roorkee, Uttarakhand India (Ashish Pandey) (Ashish Pandey) |
| 8:50AM | 1701500 | Impact of Accurate Evapotranspiration Estimates on DRAINMOD Simulation in North Dakota
Ali Rashid Niaghi, North Dakota State University, Fargo, ND United States (Ali Rashid Niaghi, Xinhua Jia, Thomoas Schere) |
| 9:05AM | 1700304 | Evaluation of Three Potential Evapotranspiration (PET) Methods using Water Budget for Two South-eastern Atlantic Coastal Plain Forests
Devendra Amatya, USDA Forest Svc, Cordesville, SC United States (Devendra Amatya) |
| 9:20AM | 1700992 | Software Development for Remote Sensing Based Forest Evapotranspiration Mapping of Chatahoochee National Forest
Sudhanshu Panda, University of North Georgia, Oakwood, Georgia United States (Sudhanshu Panda, Devendra Amatya, Ian Flitcroft, Thomas Graham) |
| 9:35AM | 1700406 | Remote sensing estimation of actual evapotranspiration from dryland cropping systems
M. Azeem Khan, Washington State University, Pullman, WA United States (M. Azeem Khan, Claudio Stöckle, Richard G. Allen, Chi Jinshu) |

WEDNESDAY, JULY 19

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 311

AGRICULTURAL BMPS: EFFECTIVENESS, VERIFICATION AND MODELING – Sponsored by NRES-26

Moderator: Nathaniel Bailey, Florida A&M Univ

Location: 202C

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1701345	Using edge-of-field monitoring data and field scale SWAT models to assess the impact of best management practices in the Great Lakes Priority Watersheds Katherine Merriman, USGS, Urbana, IL United States (Presenters: Katherine Merriman, Amy Russell) Guoxue Li, Ajay Shah)
7:50AM	1701488	Updated Soil Conservation Practice Simulation with the WEPP Model Dennis Flanagan, USDA-Agricultural Research Service, West Lafayette, IN United States (Dennis Flanagan, Anurag, Srivastava, James Frankenberger, Joel Poore, Norman Widman)
8:05AM	1701253	Simulated effects of winter wheat cover crop on soil water balances, soil quality and yield of subsequent cotton crop Srinivasulu Ale, Texas A&M AgriLife, Vernon, TX United States (Srinivasulu Ale, Pradip Adhikari, Nina Omani, Paul DeLaune, Kelly Thorp, Edward Barnes)
8:20AM	1701502	Impact of On-farm Water Storage System Implementation on Agricultural Watersheds Using Assessments from AnnAGNPS Simulations Juan D. Perez-Gutierrez, Auburn University, Auburn, AL United States (Juan D. Perez-Gutierrez, Joel Paz, Mary Love Tagert, Lindsey Yasarer, Ronald Binger)
8:35AM	1700271	Chronosequence of Soil Aggregate Size and Organic Matter Content Following Conversion from Rowcrop to Prairie Bethany Brittenham, Iowa State University, Ames, IA United States (Bethany Brittenham, Randy Kolka, Matthew Helmers)
8:50AM	1700789	Life cycle assessment of value-addition to on-farm organic residues through anaerobic digestion and composting Yangyang Li, Ohio State University, Wooster, Ohio United States (Yangyang Li, Ashish Manandhara,
9:05AM	1701308	Evaluation of water stress of Huanglongbing (HLB) infected citrus trees under different heat treatments Azadeh Alizadeh, University of Florida, Gainesville, FL United States (Azadeh Alizadeh, Katie Migliaccio, Reza Ehsani)

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 312

APPLICATIONS OF ECOLOGICAL ENGINEERING – Sponsored by NRES-28

Moderator: Trisha Moore, Kansas State Univ

Location: 203

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700606	Effect of Partially Stabilized Organic Amendments on Volatile Acids Production and Pest Inactivation using Soil Biosolarization Jesus Fernandez Bayo, Department of Biological and Agricultural Engineering, UC Davis, Department of Food Science and Technology, UC Davis, Davis, CA United States (Jesus Fernandez Bayo, Tara Randall, Yigal Achmon, Kelley Hestmark, Duff Harrold, Joey Su, Ruth Dahlquist-Willard, Thomas Gordon, Jean VaderGheynst, Christopher Simmons)

7:50AM	1701427	Optimization of a Granular Activated Carbon- Membrane Integrated- Multigrade Effluent System for Greywater Treatment and Reuse Fouad Jaber, Texas A&M University, Dallas, TX United States (Fouad Jaber, Shashi Kant)
8:05AM	1700714	Numerical Simulation and Analysis of Artificial Aeration Ecological Purification System Based on CFD (Computational Fluid Dynamics) Yang Yang, Zhejiang University, Hangzhou, China (Presenter: Fanfei Deng) (Yang Yang, Zonglou Guo, Fanfei Deng)
8:20AM	1700393	The biological responses and metal phytoaccumulation of duckweed Spirodela to manganese and chromium Ying Liu, North Carolina State University, Raleigh, NC United States (Ying Liu, Tanatcha Sanguanphun, Wenqiao Yuan, Jay J. Cheng, Metha Meetam)
8:35AM	1700822	Modeling animal movement in landscape: an object-oriented programming and Bayesian network Tanh Nguyen, Stephen F. Austin State University, Nacogdoches, Texas United States (Tanh Nguyen, Daniel Scognamiglio, Christopher Comer, Caitlin Glymph, Dave Holdermann)
8:50AM	1700333	Effects of using pumps for water management in coastal waterfowl impoundments on nutrient dynamics and export Randall Etheridge, East Carolina University, Greenville, NC United States (Randall Etheridge, Brian Hinckley, Michelle Moorman)
9:05AM	1700351	Plant selections for vegetated channels: Evaluation of seven aquatic plant species for susceptibility to five species of Phytophthora Natasha Bell, Clemson University, Ithaca, NY United States (Natasha Bell, Sarah White, Daniel Hitchcock, Steven Jeffers)
9:20AM	1701100	Synthesis-based Watershed Delineation in Flat Landscapes Shifts Nutrient Sources and Restoration Burden Max Wallace, Univ of Florida, Gainesville, FL (Presenter Sanjay Shukla) (Max Wallace)

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 314

MODELING DRAINAGE SYSTEMS –

Sponsored by NRES-23

Moderator: Zhiming Qi

Location: 205

Time	Paper#	Title/Author
7:30AM		Introduction
8:20AM	1701223	Simulating agronomic management effects on greenhouse gas emissions in a subsurface drainage field in Southern Quebec using RZWQM2 Qianjing Jiang, McGill University, Ste-Anne-De-Bellevue, QC Canada (Zhiming Qi) (Qianjing Jiang, Zhiming Qi, Chandra A. Madramootoo)
8:50AM	1700278	Developing a phosphorus (P) module in RZWQM2 for phosphorus management in subsurface drained agricultural fields Debasis Sadhukhan, McGill University, Sainte Anne De Bellevue, Quebec Canada (Debasis Sadhukhan) (Debasis Sadhukhan, Zhiming Qi, Tiequan Zhang, Chin Tan)

WEDNESDAY, JULY 19

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 314

LEVERAGING BIG DATA AND COMPUTATIONAL TOOLS FOR TACKLING WATER RESOURCES PROBLEMS – Sponsored by NRES-21, NRES-24

Moderator: Natalie Nelson, Univ of Florida

Location: 206A

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700071	Inverse Modeling to Estimate Wilting Points from Remotely-Sensed Soil Moisture Maoya Bassiouni, Oregon State University, Corvallis, OR United States (Maoya Bassiouni, Stephen Good)
7:50AM	1700694	Neural Networks and Low Cost Sensors to Estimate Site-Specific Evapotranspiration Jason Kelley, Oregon State University, Corvallis, OR United States (Jason Kelley, Chad Higgins, Taylor Vagher, Willow Walke)
8:05AM	1701321	Does one of the most premier mechanistic water quality models effectively simulate cyanobacteria dynamics? Natalie Nelson, University of Florida, Gainesville, Florida United States (Natalie Nelson, Rafael Muñoz-Carpena)
8:20AM	1701361	CISTA model - A novel tool to develop adaptation strategies in a changing environment Aavudai Anandhi, Florida A&M University, Tallahassee, FL United States (Aavudai Anandhi)
8:35AM	1701008	Automated Updated RUSLE Model Development in ArcGIS ModelBuilder in Climate Change Condition Sudhanshu Panda, University of North Georgia, Oakwood, Georgia United States (Sudhanshu Panda, Rebecca Peoples, Justin Ellis)
8:50AM	1701401	Functional Soil Parameter Geographic Databases for Water Quality Modeling in the United States Mauro Di Luzio, Texas A&M AgriLife Research, Temple, TX United States (Mauro Di Luzio, Mike White, Jeff Arnold)
9:05AM	1701702	Beyond Chemical Water Quality: What Controls the Ecological Quality of Freshwater Ecosystems at the Continental Scale in Europe? Ismael Martin Rodea Palomares, University of Florida, Gainesville, Florida United States (Ismael Martin, Rodea Palomares)

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 315

NUTRIENT TRANSPORT AND CYCLING – Sponsored by NRES-22, NRES-28

Moderator: Sanjay Shukla, Univ of Florida

Location: 206B

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1701211	A Metabolomics-Based Approach for Molecular-Scale Tracking of Organic Nutrients in Aquatic Systems Ludmilla Aristilde, Cornell University, Ithaca, NY United States (Ludmilla Aristilde)
7:50AM	1701017	Effects of detachment capacity on soil erodibility to concentrated flow with flume experiments Yuequn Dong, Chinese Academy of Agricultural Sciences, Beijing, China, People's Republic of (Presenter: Zhang Qingwen) (Qingwen Zhang, Yuequn Dong, Hui Zhang, Zengli Yang, Xingren Liu, Aiping Zhang, Tingwu Lei)
8:05AM	1700057	Growth Rates of Duckweed on Anaerobically Digested Dairy Manure for Nutrient Uptake and Macroalgal Biomass Production Bingjun He, University of Idaho, Moscow, ID United States (Kevin Kruger) (Kevin Kruger, Lide Chen, Bingjun He)

8:20AM	1700637	Steven Sibray) Design of wood chip denitrification bioreactors treating nitrate-N from agricultural drainage David McKenzie, St. John's Research and Development Centre, St. John's, NL Canada (Presenter: Lordwin Jeyakumar) (David McKenzie, Lordwin Jeyakumar, Peter Murphy, Shabtai Bittman, Kerry Hobrecker, Evan Derdall)
8:35AM	1701037	Comparing the soil nitrogen losses for fall applied manure and inorganic fertilizer in the Northern Great Plains Mukesh Mehata, South Dakota State University, Brookings, South Dakota United States (Mukesh Mehata, Erin Cortus, Joseph Darrington)
8:50AM	1700336	Returning Degraded Soils to Productivity: Nutrient Losses from Directed Fertilization of Woodchip Amended Soils Erin Menzies, Cornell University, Ithaca, NY United States (Erin Menzies, Rebecca Scheider, Todd Walter)
9:05AM	1700545	Examining impacts evolving irrigation practices have on groundwater via age-dating tracers and nitrogen isotopes. Martin Wells, University of Nebraska Lincoln, Lincoln, Nebraska United States (Martin Wells, Troy Gilmore,

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 316

SENSORS FOR IRRIGATION MANAGEMENT

– Sponsored by NRES-24, NRES-244

Moderator: Ken Stone, USDA ARS

Location: 206C

Time	Paper#	Title/Author
7:35AM	1700230	Number of soil water monitoring locations required for irrigation management: A geostatistical analysis Derek Heeren, University of Nebraska, Lincoln, NE United States (John Burdette Barker, Trenton Franz, Derek Heeren Christopher Neale, Joe Luck)
7:50AM	1700860	Variable Baseline Crop Water Stress Index Temperatures for Sugar Beets in an Arid Region Bradley King, USDA Agricultural Research Service, Kimberly, Idaho United States (Bradley King, David Tarkalson)
8:05AM	1701192	Crop Monitoring System based on Internet of Things for Performance Evaluation of MESA and LESA Irrigation Methods Yasin Osroosh, Washington State University, Pullman, WA United States (Yasin Osroosh, Lav R. Khot, R. Troy Peters)
8:20AM	1700784	The Potential to Use Cosmic Ray Neutron Probe for Center Pivot Irrigation Management Jacob LaRue, Valmont Irrigation, Valley, Nebraska United States (Jacob LaRue, Trenton Franz, Kelly Downing)
8:35AM	1701094	Continuous, Proximal Leaf Monitoring System to Assist with Precision Irrigation Implementation using a Wireless Mesh Network of Sensors and Controllers in Almonds Erin Kizer, University of California, Davis, Davis, California United States (Erin Kizer, Kelley Drechsler, Channing Ko-Madden, Shrinivasa Upadhyaya, Julie Meyers, Francisco Rojo, Alex Schramm, Qingsong Zhang)
8:50AM	1700705	Precision Irrigation in Wine Grape Using a Proximal Leaf Monitor System for Measuring Plant Water Status Channing Ko-Madden, University of California, Davis, Davis, CA United States (Channing Ko-Madden, Erin Kizer, Kelley Drechsler, Julie Meyers, Francisco Rojo, Alexander Schramm, Qingsong Zhang, Shrinivasa Upadhyaya)

WEDNESDAY, JULY 19

9:05AM 1701557 **Performance Analysis of Electromagnetic Soil Water Sensors in a Loam Soil**
 Jasreman Singh, University of Nebraska Lincoln, North Platte, Nebraska United States (Jasreman Singh, D.R. Rudnick, T. Lo, Turner J. Dorr, Chuck A Burr, Rodrigo Werle, Tim M. Shaver, Francisco Muñoz-Arriola)

**Wednesday, July 19 – 7:30AM-10:00AM
 SESSION 317 MANURE MANAGEMENT PART 2**

– Sponsored by NRES-27
 Moderator: Dan Anderson, Iowa State Univ

Location: 206D

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700205	Case study of historical swine finishing manure characteristics and applications Benjamin Smith, Iowa State University, Ames, IA United States (Benjamin Smith, Dan Andersen, Jay Harmon)
7:50AM	1700573	Settling Characteristics of Swine and Dairy Manure Caleb Polson, Iowa State University, Ames, IA United States (Caleb Polson, Daniel Andersen, Laura Pepple)
8:05AM	1701504	Investigation of sulfide distribution of swine manure in deep-pit storage Hongjian Lin, University of Minnesota, St Paul, MN United States (Hongjian Lin, Weiwei Liu, Jing Gan, Yuchuan Wang, Bo Hu)
8:20AM	1700267	A microbial lens into the causes of manure pit foaming Adina Howe, Iowa State University, Ames, IA United States (Adina Howe, Fan Yang, Daniel Andersen, Steven Trabue, Angela Kent, Laura Pepple, Richard Gates)
8:35AM	1700256	Estrogen Transport in Surface Runoff from Agricultural Fields Treated with Two Application Methods of Dairy Manure Heather Gall, The Pennsylvania State University, University Park, PA (Odette Mina, Heather Gall, Louis Saporito, Peter Kleinman)
8:50AM	1700269	Antibiotics and antibiotic resistant bacteria and genes in northeastern dairy manure management systems – Project overview and preliminary findings from an 11 farm case study Jason Oliver, Cornell University, Ithaca, New York United States (Jason Oliver, Curt Gooch, Mitch Mayville, Lauren Sassoubre, Stephanie Lansing, Jenna Schueler, Gary Felton, Krista Wigginton, Emily Crossette, Lutgarde Raskin, Diana Aga, Kathryn Langenfeld)
9:05AM	1701423	Survey of Small Michigan Livestock Winter Manure Handling and Economic Assessment of Policy Change Steven Miller, Michigan State University, East Lansing, MI United States (Steven Miller, John Mann, Dale Rozeboom, Steven Safferman, Andrea Leschewski, Jason Smith)
9:20AM	1700342	Techno-economic optimization of community-based manure processing Mahmoud Sharara, University of Wisconsin, Madison, Wisconsin United States (Mahmoud Sharara, Troy Runge, Rebecca Larson, John G Primm)
9:35AM	1700485	Supplying Water Warmed by Exhaust Heat from a Closed Vertical Composting Facility for Dairy Cows Yoichiro Kojima, National Agriculture and Food Research Organization, Institute of Livestock and Grassland Science (NILGS), Nasushiobara, Tochigi Japan (Yoichiro Kojima, Ryoh Nakakubo, Koichi Amaha, Mitsuyoshi Ishida)

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 318 BIOSECURITY FOR ANIMAL FACILITIES

– Sponsored by PAFS-40, PAFS-50, MS-49, MS-54
 Moderator: Joseph Darrington, South Dakota State Univ

Location: 207

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700558	Modeling airborne virus concentrations in filtered swine barns with negative-pressure ventilating systems Kevin Janni, University of Minnesota, St. Paul, MN United States (Kevin Janni, Montse Torremorell, Larry Jacobson, Carmen Alonso, Brian Hetchler)
7:50AM	1700443	Field Evaluation of an Electrostatic Air Filtration System for Reducing Incoming Particulate Matter of a Hen House Yang Zhao, Department of Agricultural and Biological Engineering, Mississippi State University, Starkville, MS United States (Yang, Zhao, Lilong Chai, Brad Richardson, Hongwei Xin)
8:05AM	1701091	Composting as a Biosecure Disposal Method for PEDv-infected Pig Carcasses Amy Schmidt, University of Nebraska - Lincoln, Lincoln, NE United States (Amy Schmidt, J. Dustin Loy, Daniel Miller)
8:20AM	1700098	Response surface modelling for cleaning and bacteria removing in milking systems with alkaline electrolyzed oxidizing (EO) water Chaoyuan Wang, China Agricultural University, Beijing, China, People's Republic of (Presenter: Yu Liu) (Yu Liu, Chaoyuan Wang, Baoming Li, Zhengxiang Shi)
8:35AM	1701151	Optimization of Ammonia and Airborne Culturable Bacteria Removal by Slightly Acidic Electrolyzed Water Spray Scrubbers Zonggang Li, China Agricultural University, Beijing, China, People's Republic of (Zonggang Li, Weichao Zheng, Baoming Li)
8:50AM	1700607	Feasibility study for the use of surface-temperature discriminant poultry health XiuLin Liu, North University of China, Taiyuan, China, People's Republic of (Ye-Hong Liu, Xiang-Lin Liu, Chun-Hong Cao, Luhuishan Lu, Fu-Jie Wang, Yao Ge, Yu-Chao Lu)
9:05AM	1701639	Development, Validation and Application of a Mobile Air Filter Testing Unit Benjamin Smith, Iowa State University, Ames, IA United States (Benjamin Smith)

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 319 DRYING, HANDLING AND STORAGE OF CROPS - PART 1

– Sponsored by PRS-702
 Moderator: Carol Jones, Oklahoma State Univ

Location: 300C

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700663	Apparatus for Rapid Material Moisture Conditioning Using Saturated Salt Solutions David Bohnhoff, University of Wisconsin, Madison, WI United States (David Bohnhoff)
7:50AM	1701175	Studies on Corn Flour Flowability as Affected by Roller Milling and Moisture Content Harishchandra Jadhav, Iowa State University, Ames, IA United States (Harishchandra Jadhav, Sai Teja Marripudi, Chinwendu Ozoh, Xiong Cao, Kurt Rosentrater)

WEDNESDAY, JULY 19

8:05AM	1700855	<p>Development of an inexpensive sensor for the detection of mold in stored canola seed Kevin Moore, Oklahoma State University, Stillwater, OK United States (Kevin Moore, Carol Jones, Robert Frazier, Ning Wang, Niels Maness, Stephen Marek)</p>
8:20AM	1700677	<p>Prediction of official FGIS odor classifications using headspace analysis of volatile organic compounds Patrick Murphy, Iowa State University, Ames, IA United States (Patrick Murphy, Steven Trabue, Kenwood Scroggin, Stephen Vardeman)</p>
8:35AM	1700987	<p>Turbulence intensity and distribution in rough rice bin drying and storage system with new "cabling" technology Gbenga Olatunde, University of Arkansas, Fayetteville, Arkansas United States (Gbenga Olatunde, Griffiths Atungulu)</p>
8:50AM	1701072	<p>Evaluating the Moisture Content Level for Safe Storage of Rough Rice Bhagwati Prakash, University of Arkansas, Fayetteville, AR United States (Bhagwati Prakash, Shweta Kumari, Terry Siebenmorgen)</p>
9:05AM	1700988	<p>Impact of Natural Air Drying and Storage Condition on Soybean Seed Germination and Quality Gbenga Olatunde, University of Arkansas, Fayetteville, Arkansas United States (Gbenga Olatunde, Shantae Wilson, Griffiths Atungulu)</p>
9:20AM	1701482	<p>Development and Evaluation of an On-Farm Fluidized Bed Drying System Sammy Sadaka, University of Arkansas, Little Rock, AR United States (Sammy Sadaka, Griffiths Atungulu)</p>

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 320

MODELING AND OPTIMIZATION IN FOOD PROCESSING AND STORAGE

– Sponsored by PRS-703

Moderator: Litha Sivanandan, West Virginia Univ

Location: 300D

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1701404	<p>Poultry System Simulation Model (PRYSSM) to Evaluate Water Consumption and Wastewater Contamination Levels Olga Kemenova, Georgia Institute of Technology, Atlanta, GA United States (Olga Kemenova, Alexander Samoylov)</p>
7:50AM	1701071	<p>Mathematical Modeling of a Cross-Flow Rice Dryer with Turnflows Bhagwati Prakash, University of Arkansas, Fayetteville, AR United States (Bhagwati Prakash, Terry Siebenmorgen)</p>
8:05AM	1700391	<p>Modeling Oil Quality Parameters of Crambe Seeds Stored at Various Conditions Ewumbua Monono, North Dakota State University, Fargo, North Dakota United States (Ewumbua Monono, Magnun Penariol da Silva, Dennis Wiesenborn)</p>
8:20AM	1700985	<p>Simulation and validation of In-bin stored rice temperature and moisture characteristics using Computational Fluid Dynamics Gbenga Olatunde, University of Arkansas, Fayetteville, Arkansas United States (Gbenga Olatunde, Griffiths Atungulu)</p>
8:35AM	1701580	<p>Investigation of In-Bin Grain Aeration Potential in Australia Chandra Singh, University of South Australia, Mawson Lakes, South Australia Australia (Chandra Singh, John Fielke)</p>
8:50AM	1700384	<p>The Potential of Using Organic Acid Produced in-situ to Preserve Sugar Beet Juice Ewumbua Monono, North Dakota State University, Fargo, North Dakota United States (Ewumbua Monono, Juan Vargas-Ramierz, Dennis Wiesenborn)</p>

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 321

SPECTRAL SCATTERING, FLUORESCENCE, AND RAMAN TECHNOLOGY FOR FOOD QUALITY AND SAFETY

– Sponsored by PRS-701

Moderator: Jiawei Qin, USDA ARS

Location: 302A

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1701376	<p>Emerging green analytical tools for food quality and safety Quansheng Chen, Jiangsu University, Zhenjiang, China, People's Republic of (Quansheng Chen, Qin Ouyang, Zhiming Guo, Hao Lin)</p>
7:50AM	1700717	<p>Optimization of spatial frequency domain imaging technique for estimating optical properties of food and biological materials Dong Hu, Michigan State University, East Lansing, MI United States (Presenter: Ye Sun) (Dong Hu, Renfu Lu, Yibin Ying)</p>
8:05AM	1700726	<p>Flexible and Attachable Surface-Enhanced Raman Scattering (SERS) Sensors for in-situ Detection of Chemical Residue on Agro-products Jingjing Wang, Zhejiang University, Hangzhou, China, People's Republic of (Jingjing Wang, Xiangjiang Liu)</p>
8:20AM	1701330	<p>Instrumental evaluation of Chinese rice wine sensory attributes using near infrared spectroscopy combined with multivariate calibration Qin Ouyang, Jiangsu University, Zhenjiang, Jiangsu Province China, People's Republic of (Qin Ouyang)</p>
8:35AM	1700975	<p>Volatile Detection from Plant Headspace with Modified Surface-Enhanced Raman Spectroscopy Jinhyuk Park, Texas A&M University, College station, Texas United States (Jinhyuk Park, J. Alex Thomasson, Kyung-Min Lee)</p>
8:50AM	1701306	<p>Development of on-line detection system for simultaneous assessment of edible quality and internal defect in apple by NIR transmittance spectroscopy Zhiming Guo, Jiangsu University, Zhenjiang, Jiangsu China, People's Republic of (Quansheng Chen, Jingzhu Wu, Qin Ouyang, Hua Chen, Jiawen Zhao)</p>
9:05AM	1700398	<p>Detecting maleic anhydride in starch using line-scan hyperspectral Raman chemical imaging Jianwei Qin, USDA ARS, Baltimore, Maryland United States (Jianwei Qin, Moon Kim, Kuanglin Chao, Lisa Bellato)</p>
9:20AM	1700584	<p>A Study on Phase Analysis Techniques in Structured-Illumination Reflectance Imaging for Fruit Three-Dimensional Surface Reconstruction Yuzhen Lu, Michigan State University, East Lansing, Michigan United States (Yuzhen Lu, Renfu Lu)</p>
9:35AM	1701529	<p>Comparison of NIR and Raman Hyperspectral Imaging to Detect Adulteration of Food Powders Colm O'Donnell, University of Dublin, Belfield, Ireland (Colm O'Donnell) (E.M. Achata, C. Esquerre, A.A. Gowen, C.P. O'Donnell)</p>

Wednesday, July 19 – 7:30AM-10:00AM

SESSION 322

MICROWAVE AND RADIO FREQUENCY PROCESSING

– Sponsored by PRS-703

Moderator: Shaojin Wang, Northwest A&F Univ

Location: 302B

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700082	<p>Improvement of radio frequency (RF) heating uniformity for peanuts with a new strategy using computational modeling Shuang Zhang, Northwest A&F University, Yangling,, Shaanxi, China, People's Republic of (Shuang Zhang, Zhi Huang, Shaojin Wang)</p>

WEDNESDAY, JULY 19

7:50AM	1700113	<p>Physiochemical Properties of Rice Dried Using Microwave Set at 915 MHz Frequency Deandrae Smith, University of Arkansas, Fayetteville, AR United States (Deandrae Smith, Griffiths Atungulu)</p>
8:05AM	1700148	<p>Dynamic simulation for radio frequency heating of particle foods: Theoretical development and empirical validation Zhi Huang, Northwest A&F University, Yangling, Shaanxi China, People's Republic of (Zhi Huang, Shuang Zhang, Shaojin Wang)</p>
8:20AM	1700970	<p>Effect of 915 MHz microwave intensity on milling and sensory characteristics of rough rice of different cultivars Griffiths Atungulu, University of Arkansas, Fayetteville, AR United States (Griffiths Atungulu, Gbenga Olatunde)</p>
8:35AM	1701450	<p>Development of Microwave Sterilization Process for Packaged Food Zhongwei Tang, Washington State University, Pullman, WA United States (Zhongwei Tang, Frank Liu, Juming Tang, Peter Gray, Frank Younce, Huimin Lin, Stewart Bohnet, Xin Wang, Graham Barnett)</p>
8:50AM	1701596	<p>Hydrothermal microwave-assisted treatments for blackberries as postharvest control against Botrytis cinerea Roberto Rojas-Laguna, Universidad de Guanajuato, Salamanca, Gto Mexico (D. Ezahu Miranda-Estrada, Abel Ceron-Garcia, Maria E. Sosa-Morales, Roberto Rojas-Laguna)</p>
9:05AM	1700372	<p>Dielectric properties of pistachio kernels as influenced by frequency, temperature, moisture and salt content Bo Ling, , Yangling, China, People's Republic of (Bo Ling) (Bo Ling, Shaojin Wang)</p>

Wednesday, July 19 – 7:30AM-10:00AM
SESSION 323 POST-HARVEST TECHNOLOGY OF SPECIALTY CROPS – Sponsored by PRS-702
 Moderator: Mark Casada, Kansas State Univ
Location: 303A

Time	Paper#	Title/Author
7:30AM		Introduction
7:35AM	1700049	<p>Digital image processing algorithms for a litchi harvesting robot Xiangjun Zou, South China Agricultural University, Guangzhou, China, People's Republic of (Presenter: Chenglin Wang) (Xiangjun Zou, Chenglin Wang, Hongjun Wang)</p>
7:50AM	1700245	<p>Design and Evaluation of Commercial Scale Infrared Walnut Dryer Chandrasekar Venkatasamy, University of California Davis, Davis, CA United States (Chandrasekar Venkatasamy, Chang Chen, Yi Shen, Weipeng Zhang, Ragab Khir, Hamed El-Mashad, Ruihong Zhang, Zhongli Pan)</p>
8:05AM	1700757	<p>Machine vision and thermographic imaging for determining of grading of tomato on postharvest Jinshi Cui, , Seoul, Korea, South (Jinshi Cui, Seong-In Cho, MyongKyoon Yang, Daesik Son, Sungmin Park)</p>
8:20AM	1700929	<p>Automated Raspberry Promicane Tying Mechanism Kapil Khanal, Washington State University, Prosser, Washington United States (Kapil Khanal, Santosh Bhusal, Manoj Karkee)</p>
8:35AM	1700946	<p>Physical Characteristics Of Soursop Seeds As Affected By Moisture Content Akindele Alonge, University of Uyo, Uyo, Akwa Ibom State Nigeria (Akindele Folarin Alonge, Juliet Udoh, Tajudeen Olayanju, Olawale Dairo)</p>
8:50AM	1701390	<p>Georgia Peach Harvest Dates Predictions Alex Samoylov, Georgia Tech Research Institute, Atlanta, GA United States (Alex Samoylov, Olga Kementova)</p>

Wednesday, July 19 – 9:00AM-12:15PM
SESSION 324 ABET CRITERION PROGRAMMING

Time	Paper#	Title/Author
9:00AM		<p>ABET Program Evaluator Information Session Panelists: Ann Kenimer, Texas A&N Univ Donald Slack, Univ of Arizona Mike Hirschi, Univ of Illinois Sonia Maassel Jacobsen, Univ of Minnesota David Jones, Univ of Nebraska Peter Livingston, Cal Poly Univ Richard Cavaletto, Cal Poly Univ</p>
10:00AM		<p>ABET Criteria 4 Assessment and Continuous Improvement Chairs: Mark Riley, Evan Curtis, Univ of Nebraska</p>
10:00AM	1700289	<p>Non-Onerous and Sometimes Effective Approaches to Continuous Improvement Processes for a mid-sized Engineering Degree Program D. Raj Raman, Iowa State University, Ames, IA United States (D. Raj Raman, Amy L. Kaleita)</p>
10:20AM	1701271	<p>Criterion 4 Lessons Learned at the University of Kentucky after a Recent ABET Review Czarena Crofcheck, University of Kentucky, Lexington, KY United States (Czarena Crofcheck)</p>
10:35AM		<p>Discussion on Assessment Methods among Programs in Ag/Bio Disciplines</p>
10:45AM-12:15PM		<p>Roundtable Discussion on Assessment Moderators: Mark Riley, Evan Curtis, Univ of Nebraska Panelists: TBA</p>

Wednesday, July 19 – 10:15AM-12:15PM
SESSION 325 APPLIED SCIENCE AND ENGINEERING POSTER SESSION

– Sponsored by ASE
 Moderator: Mark Wilkins, Univ of Nebraska
Location: 111ABC

Poster#	Paper#	Title/Author
1	1700026	<p>Temperature variability during frost event on different terrain of tea fields Yongzong Lu, Jiangsu University, Zhenjiang, China, People's Republic of (Yongguang Hu, Menglong Zhao, Ying Sun)</p>
2	1700033	<p>Erodibility Parameters Derived from Jet and Flume Erosion Tests on Root Permeated Soils Kayla Kassa, Gonzaga University, Sandpoint, ID United States (Kayla Kassa, Bailey McNichol, Lucie Guertault, Ron Miller, Garey Fox)</p>
3	1700066	<p>Simulation of different energy transfer stages of household biomass cooking stove by heating water using various stoves Yixiang Zhang, China Agricultural University, Beijing, China, People's Republic of (Yixiang Zhang, Zongxi Zhang, Yuguang Zhou, Li Chen, Crispin Pemberton-Pigott, Renjie Dong)</p>
4	1700078	<p>Influence of Steam or Hydrothermal Treatment on Physical and Mechanical Properties and Drying Behavior Yellow-poplar Kaushlendra Singh, West Virginia University, Morgantown, WV United States (Kaushlendra Singh, Sohrab Rahimi, David DeVallance)</p>
5	1700127	<p>Comparison and Optimization of Solvent Extraction and Microwave Assisted Extraction of Phenolic Compounds from Spent Coffee Grounds Sravanthi Budaraju, Virginia Tech, Falcon Heights, Minnesota United States (Sravanthi Budaraju, Kumar Mallikarjunan, Rebecca Petit)</p>

- | | | | | | |
|----|---------|--|----|---------|---|
| 6 | 1700161 | <p>Sequential process of citric acid production in sugarcane bagasse by microbial consortium and ethanol fermentation from fungal extract
Reinaldo Bastos, UFSCAR, Araras, São Paulo Brazil (Reinaldo Bastos, Hiléia França, Gabriela Chaves da Silveira, Beatriz Silva Campanhol, Mariana Costa Castro)</p> | 19 | 1700505 | <p>Time measurement on different balls rolling down a slop
Dingding Li, (Presenter: Xiaopeng Bai) (Liangdong Liu, Decheng Wang, Xiaopeng Bai, Dingding Li, Xingwei Gu, Chenchen Kang)</p> |
| 7 | 1700162 | <p>Lipid productivity in the fed-batch growth of <i>Desmodesmus green</i> microalgae from sugarcane vinasse
Reinaldo Bastos, UFSCAR, Araras, São Paulo Brazil (Reinaldo Bastos, Mariana Altenhofen da Silva, Carolina Brito Codato, Gabriel Henrique Barbosa, Luiz Felipe Arjonilla de Mattos)</p> | 20 | 1700520 | <p>The Design of Controlling System of the Cleaning Machine
Hongjian Wu, (Presenter: Xiaopeng Bai) (Yan Yu, Xiaolin Zhang, Zhiqin Wang, Decheng Wang, Guanghui Wang, Xiaopeng Bai, Qingyun Sun)</p> |
| 8 | 1700163 | <p>Influence of C/N ratio in growth of cyanobacteria <i>Geitlerinema sp.</i> from sugarcane vinasse
Reinaldo Bastos, UFSCAR, Araras, São Paulo Brazil (Reinaldo Bastos, Jéssica Cristina Fonte, Isabely Fernanda Pizarro)</p> | 21 | 1700522 | <p>Visual Slam and Obstacle Avoidance Based on RGB-D Camera
Hongjian Wu, (Presenter: Xiaopeng Bai) (Yan Yu, Xiaolin Zhang, Zhiqin Wang, Decheng Wang, Guanghui Wang, Xiaopeng Bai, Qingyun Sun)</p> |
| 9 | 1700252 | <p>Analysis and Improvement of Equipment Efficiency in Feed Processing Enterprises Based on the Overall Equipment Effectiveness (OEE)
Nan Jin, China Agricultural University, BeiJing, China, People's Republic of (Presenter: Xiao Chen) (Nan Jin, Hongying Wang, Dandan Kong, Xiao Chen, Peng Fang, Enze Duan, Zhongxian Qi)</p> | 22 | 1700528 | <p>The Design of Plateau Yak Milking Machine Based on DELMIA Ergonomics
Lu Zhiheng, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Lu Zhiheng)</p> |
| 10 | 1700253 | <p>A Review on Identifying and Monitoring Technology for Individual Hen Information
Peng Fang, China Agricultural University, Beijing, Beijing China, People's Republic of (Presenter: Xiao Chen) (Peng Fang, Hongying Wang, Xiao Chen, Dandan Kong, Nan Jin, Enze Duan, Zhongxian Qi)</p> | 23 | 1700529 | <p>Design, prototyping, calibration, testing and evaluation of an electronic measurement system
Xingwei Gu, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Xiaolin Zhang, Xingwei Gu, Decheng Wang, Guanghui Wang, Qingyun Sun, Xiaopeng Bai, Zhiheng Lu, Zhao Wang)</p> |
| 11 | 1700296 | <p>Laboratory evaluation of high-frequency vibrations on soil cutting force
Bulent Koc, Clemson University, Clemson, SC United States (Cengiz Koparan, Bulent Koc, Altamash Baig)</p> | 24 | 1700531 | <p>Optimized Design of Spiral Compression Test Stand for The Fresh Broken Forage Material
Xingwei Gu, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Decheng Wang, Guanghui Wang, Zhiheng Lu, Chenchen Kang, Xiaopeng Bai, Dingding Li)</p> |
| 12 | 1700326 | <p>Study on vacuum pulsation drying characteristics of Huangqi(<i>A. mongholicus</i> Bunge)
Qingyun Sun, China Agricultural University, Beijing, Beijing China, People's Republic of (Presenter: Jinkui Feng) (Qingyun Sun, Guanghui Wang, Decheng Wang, Peichuan Liu, Yan Yu, Jinkui Feng)</p> | 25 | 1700534 | <p>Reliability Analysis of The Rotor in The Forage Grinder Based on ANSYS
Xingwei Gu, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Decheng Wang, Guanghui Wang, Zhiheng Lu, Chenchen Kang, Xiaopeng Bai, Dingding Li)</p> |
| 13 | 1700331 | <p>Study on vacuum pulsation drying characteristics of loofah
Qingyun Sun, China Agricultural University, Beijing, Beijing China, People's Republic of (Presenter: Xiaopeng Bai) (Qingyun Sun, Guanghui Wang, Zhiqing Wang, Shuai Li, Yan Yu, Li Teng, Xiaopeng Bai)</p> | 26 | 1700553 | <p>Research on Phase Composition and Hardness of Laser Cladding Ni-based SiC Composite Coatings
Xu Wang, China Agricultural University, Beijing, China, People's Republic of (Yang Xu, Yue Zheng, Xu Wang, Guan Wang, Hao Liu, Yuan Su)</p> |
| 14 | 1700408 | <p>CropSyst-Microbasin: a distributed hydrologic model to study opportunities for precision agriculture and climatic change adaptations within small agricultural watersheds
Hossein Sadeghi, Washington State University, Pullman, WA United States (Sayed Hossein Sadeghi) (Hossein Sadeghi, Claudio Stockle, Liu Mingliang, Steward Higgins)</p> | 27 | 1700602 | <p>Study on Optimal Design of Canal-pipe Conjunctive System in Canal Irrigation District
Zhigang Shi, China Institute of Water Resources and Hydropower Research, Beijing, Beijing China, People's Republic of (Zhigang Shi)</p> |
| 15 | 1700430 | <p>Design and experimental study on small maize planters for Southwest China
Bingxin Yan, China Agricultural University, Peking, Peking China, People's Republic of (Presenter: Tao Cui) (Dongxing Zhang, Li Yang, Tao Cui, Yiming Yu, Congcong Tian, Youqiang Ding, Zhendong Wang)</p> | 28 | 1700608 | <p>Effects of Cold Plasma on Old Seed Germination Characteristics of <i>Codonopsis pilosula</i>
Zusongying Zhao, China Agricultural University, Beijing, China, People's Republic of (Presenter: Pengtao Li) (Zhi'an Zheng, Zusongying Zhao, Jiao Wang, Ping Zhang, Bo Lin, Zimei Zhang, Pengtao Li)</p> |
| 16 | 1700477 | <p>Evaluation of Preservation Methods for Nitrate and Orthophosphate in Water Samples
Lucia Dunderman, University of Illinois at Urbana-Champaign, Long Island City, New York United States (Lucia Dunderman)</p> | 29 | 1700618 | <p>Summary of the present situation and regional policy of Mass breeding hens in China
Enze Duan, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiao Chen) (Enze Duan, Hongying Wang, Dandan Kong, Xiao Chen, Peng Fang, Nan Jin, Zhongxian Qi)</p> |
| 17 | 1700501 | <p>Abstract title: Parsimonious Stochastic Storm Generator and Applications
Josept Revuelta, Purdue University, West Lafayette, Indiana United States (Josept Revuelta, Bernard A. Engel, Dennis C. Flanagan)</p> | 30 | 1700721 | <p>A Design of Chlorophyll Fluorescence Measurement Setup
Ya Guo, University of Missouri, Columbia, MO United States (Siheng Chen, Yiyang Qi, Qian Xia, Ya Guo)</p> |
| 18 | 1700502 | <p>Control System Design of Cotton Round Baling Equipment Based on PLC
Dimngding Li, (Presenter: Xiaopeng Bai) (Liangdong Liu, Decheng Wang, Xiaopeng Bai, Laiquan Luo, Zhao Wang, Zhiheng Lu, Xingwei Gu, Chenchen Kang)</p> | 31 | 1700737 | <p>Eggshell membrane: review and impact on engineering
Jangho Kim, Chonnam National University, Gwangju, Korea, South (Sunho Park, Ki-Taek Lim, Jong Hoon Chung, Jangho Kim)</p> |
| | | | 32 | 1700753 | <p>The soil information management system based on RFID
Miao Zhang, China Agricultural University, Beijing, China, People's Republic of (Presenter: Jie Zheng) (Jie Zheng, Miao Zhang)</p> |

WEDNESDAY, JULY 19

33	1700763	Simulation of the Frame of Self-propelled Silage Combined Bagging Machine Based on ANSYS Binbin Zhang, (Presenter: Xiaopeng Bai) (Binbin Zhang, Xianfa Fang, Decheng Wang, Teng Li, Xiaopeng Bai)	47	1701224	Study on Nonlinear Phenomenon of Traveling Wave Ultrasonic Motor Based on the Mechaism of Forced Vibration and Friction Damping Niu Zijie, (Zijie Niu, Yougang Yang, Yinggang Shi) (Niu Zijie, Yougang Yang, Yinggang Shi)
34	1700801	Evaluating Potential Evapotranspiration from Three Methods and Pan Evaporation for the State of South Carolina Devendra Amatya, USDA Forest Svc, Cordesville, SC United States (Devendra Amatya, Augustine Muwamba, Charles Harrison, Timothy Callahan, Scott Harder, Alex Pellett)	48	1701236	Runoff Prediction in Eastern South Dakota: A comparison between Runoff Programs/ Curve Method and Empirical Data Bryce Siverling, South Dakota State University, Brookings, SD United States (Bryce Siverling)
35	1700874	Hydrothermal liquefaction of lignin for production of biofuels and chemicals Vivek Patil, Auburn University, Auburn, AL United States (Vivek Patil, Sushil Adhikari)	49	1701289	The effect of canola protein extraction conditions on the kinetic parameters of a two-site extraction model Gayatri Yadavalli, Washington State University, Richland, Washington United States (Presenter: Hanwu Lei) (Gayatri Yadavalli, Hanwu Lei, Zixu Yang, Yayun Zhang, Elmar Villota, Moriko Qian, Lei Zhu)
36	1700895	Optimized design of conditioner equipment and cooling device on rice bran extruder Yang Xu, China Agricultural University, Beijing, China, People's Republic of (Presenter: Guan Wang) (Xu Wang, Yangzhi Sun, Dong Liang, Yang Xu)	50	1701327	Evaluation of a single-stage carbon oxidation-nitrification process for treating high TAN effluent from anaerobic digestion of poultry rendering wastewater Nanh Lovanh, USDA ARS, Bowling Green, KY United States (Nanh Lovanh, John Loughrin, Kimberly Cook, Phil Silva, Karamat Sistani)
37	1700944	Design and Simulation Research of Ultra High Pressure Water-jets Pre-opener for no-till planter Hongnan Hu, Beijing, Beijing China, People's Republic of (Presenter: Caiyun Lu) (Hongnan Hu)	51	1701391	Effects of Low-temperature Plasma on Seed Germination Characteristics of Quinoa Binbin Zhang, (Presenter: Jinkui Feng) (Xianfa Fang, Decheng Wang, Teng Li, Jinkui Feng)
38	1700958	Proof of Concept: Tracing Septic Pollution Sources using DNA Nanobiotechnology Christine Georgakakos, Cornell University, Ithaca, NY United States (Christine Georgakakos)	52	1701395	Design and test of a new type header of corn harvester for reaping both corn stalk and spike Binbin Zhang, (Presenter: Xiaopeng Bai) (Zongling Zhang, Shujun Li, Zengde Han, Xiaopeng Bai, Teng Li, Binbin Zhang)
39	1700959	Testing Research and Comparison on the Mechanics Properties of the Stalks of Four Rice Varieties Guozhong Zhang, Huazhong Agricultural University, Wuhan City, Hubei China, People's Republic of (Guozhong Zhang, Jianwei Fu, Xiantao Zha, Shijie Zhang, Shenghua Zhao, Qin Ye)	53	1701476	Maize stubble row recognition and guidance line detection based on machine vision in natural illumination Wanzhi Chen, China Agricultural University, Beijing, China, People's Republic of (Qingjie Wang, Hongwen Li, Xianliang Wang)
40	1701061	Monitoring system for working performance of belt-type corn seed-metering device Niu Qi, China Agricultural University, Beijing, Beijing China, People's Republic of (Presenter: Wanzhi Chen) (Niu, Qi, Hongwen Li, Hongnan Hu)	54	1701541	Characterization and Analysis of Cow Creek's Constructed Riparian Wetland Ashley Kinsey, Auburn University, Fairhope, Alabama United States (Ashley Kinsey, Jason Vogel, Alex McLemore)
41	1701066	Research on the Standard of Automatic Driving Performance of Paddy Transplanter and the Automatic Driving Product's development Jundong Jin, South China Agricultural University, Guangzhou, Guangdong China, People's Republic of (Jundong Jin, Zuoxi Zhao)	55	1701592	Production of protein hydrolysates from the microalgae Chlorella Vulgaris Laura Soto, Texas A&M University, College Station, Texas United States (Laura Soto, Sayali Kulkarni, Zivko Nikolov)
42	1701067	Experiemntal study on friction character of peanut shell powder with different particle size and moisture content Teng Li, China Agricultural University, Beijing, China, People's Republic of (Xiaopeng Bai) (Teng Li, Xianfa Fang, Xiaopeng Bai, Decheng Wang, Binbin Zhang)	56	1701647	Optimum Design of Steel-Roll Round Bale Based on EDEM Chenchen Kang, Beijing, China, People's Republic of (Presenter: Jinkui Feng) (Decheng Wang, Guanghui Wang, Jinkui Feng, Zhiheng Lu, Zhao Wang, Xingwei Gu, Laiquan Luo, Dingding Li)
43	1701096	Physico-chemical properties of chitosan/vinasse biodegradable beads as biofertilizer Mariana Altenhofen da Silva, Federal University of São Carlos, Araras, São Paulo Brazil (Silvia Raquel Bettani, Gabriel de Oliveira Ragazzo, Nathalia Lea Santosg, Reinaldo Gaspar Bastos, Mariana Altenhofen da Silva, Marcio Roberto Soares)	57	1701648	The Design and Test of the Artemisia Argyi Leaf-removing Machine Lu Zhiheng, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Lu Zhiheng)
44	1701099	Mitigating Phosphorus loss with Drainage Control Structure Sorption Filters Bianca Bailey, University of Illinois, Champaign, IL United States (Bianca Bailey)	58	1701649	Intelligent Control of an Autonomous Lawn Mowing Vehicle Lu Zhiheng, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Lu Zhiheng)
45	1701123	The comparison and analysis of agricultural mechanization decision mechanism between the traditional farmers and the new professional farmers Huang Huang, Huazhong Agricultural University, Wuhan, China, People's Republic of (Huang Huang, Lina Zhang, Wentao Yu, Chun Ye)			
46	1701149	Effect of Treflan injection on root characteristics of Festuca and Brmuda grass to prevent emitters clogging by root in subsurface drip irrigation Mahdi Gheysari, AC CC.IUT, Isfahan, Isfahan Iran (Mahdi Gheysari, Behnaz Molaei, Ali Akbar Shahidani, Sayed-Hossein Sadeghi)			

WEDNESDAY, JULY 19

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 326

BIOCHAR TECHNOLOGY FOR SUSTAINABLE AGRICULTURE

– Sponsored by ES-220
Moderator: Bin Gao, Univ of Florida

Location: 201B

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700421	Heavy Metal Presence in the Edible Parts of Potatoes Irrigated with Untreated Wastewater in the Presence of Plantain Peel Biochar Christopher Nzediegwu, McGill University, Montreal, Quebec Canada (Christopher Nzediegwu, Shiv Prasher, Eman Elsayed, Jaskaran Dhiman, Ali Mawof)
10:35AM	1700640	Removing swine odor using biochar Kyoung Ro, USDA ARS, Florence, South Carolina United States (Sung Back Ro, Okhwa Hwang, Deug Woo Han, Kyoung Ro, Mindy Spiehs, Brayn Woodbury, Phil Silva)
10:50AM	1700823	Impact of Plantain Peel Biochar Addition in Soil on Soil CEC and pH under Untreated Wastewater Irrigation Christopher Nzediegwu, McGill University, Montreal, Quebec Canada (Christopher Nzediegwu, Shiv Prasher, Eman Elsayed, Jaskaran Dhiman, Ali Mawof)
11:05AM	1701038	Effects of Pyrolysis Conditions of Leaching of Salts from Halophyte Biochars Catherine Brewer, New Mexico State University, Las Cruces, NM United States (Catherine Brewer, Kwabena Sarpong, Ali Amiri, Michael Smith, Omololu John Idowu)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 327

HYPERSPECTRAL IMAGING APPLICATIONS PART 2 – Sponsored by

ITSC-348
Moderator: Haiyan Cen, Zhejiang Univ

Location: 202A

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700436	Hyperspectral Imaging based grapevine leaf-roll disease detection in red and white vine cultivars Zongmei Gao, Washington State University, Pullman, WA United States (Zongmei Gao, Yanru Zhao, Rayapati A. Naidu, Lav Ramchandra Khot, Qin Zhang)
10:35AM	1700713	Detecting the damage degree of blueberry buds during cold hardiness evaluations using hyperspectral imaging technique Yanru Zhao, Washington State University, Pullman, WA United States (Presenter: Zongmei Gao) (Yanru Zhao, Zongmei Gao, Lav R. Khot, Gwen-Alyn Hoheisel, Lisa Wasko DeVetter, Qin Zhang)
10:50AM	1700741	Detecting bitter pit development in apples using hyperspectral imaging Sanaz Jarolmasjed, Washington State University, Pullman, WA United States (Sanaz Jarolmasjed, Lav Khot, Sindhuja Sankaran)
11:05AM	1700465	Non-destructive detection of local radishes' hollow hearts by hyperspectral imaging combined with support vector machine Xiao-Lan Yu, Zhejiang University, Hangzhou, Zhejiang China, People's Republic of (Xiao-Lan Yu, Yong He, Xuping Feng, Shuijuan Feng)
11:20AM	1700273	Nondestructive diagnostic of nutrient deficiency using hyperspectral imaging technology Jiyong Shi, Jiangsu University, Zhenjiang, China, People's Republic of (Jiyong Shi, Fang Li, Xiaobo Zou)
11:35AM	1701618	Hyperspectral Imaging for Detection of Wooden Breast Condition in Broiler Breast Fillets Seung-Chul Yoon, USDA ARS, Athens, Georgia United States (Seung-Chul Yoon)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 328

DIELECTRIC PROPERTIES AND SENSING APPLICATIONS

– Sponsored by ITSC-348
Moderator: Samir trabelsi, USDA ARS

Location: 201C

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700220	Advancing fringe-field-FD-Sensor for monitoring of plant and soil water content Peter Schulze Lammers, University of Bonn, Bonn, Germany Germany (Peter Schulze Lammers, Yurui Sun, Qiang Cheng, Haiyang Zhou)
10:35AM	1700880	Design and modeling of grain impact sensor utilizing two crossed polyvinylidene fluoride films Ying Sun, Zhejiang University, Hangzhou, Zhejiang China, People's Republic of (Yonghua Yu, Hongping Tian, Xiangqun Qian, Jianping Wang)
10:50AM	1701033	Using a Peanut Drying Monitoring System to Estimate Costs of Nonbeneficial Dryer Operation Micah Lewis, USDA ARS, Athens, Georgia United States (Micah Lewis, Samir Trabelsi, Stuart Nelson)
11:05AM	1701410	Sensing Almonds Moisture Absorption with Microwave Dielectric Spectroscopy Samir Trabelsi, USDA ARS, Athens, Georgia United States (Samir Trabelsi)
11:20AM	1701422	Principles of grain and seed moisture sensing through radio-frequency and microwave dielectric properties Stuart Nelson, USDA ARS, Athens, GA United States (Presenter: Samir Trabelsi) (Stuart Nelson, Samir Trabelsi)
11:35AM	1701594	Dielectric properties of raspberry and blackberry from 0.5 to 25 GHz at 20°C and 48°C Roberto Rojas-Laguna, Universidad de Guanajuato, Salamanca, Gto Mexico (Teresa Flores-Lopez, D. Ezahu Miranda-Estrada, Tejinder Kaur, Jose Luis Olvera-Cervantes, Alonso Corona-Chavez, Maria E. Sosa-Morales, Roberto Rojas-Laguna)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 329

DISCRETE ELEMENT MODELLING (DEM) APPLICATIONS IN AGRICULTURE – Sponsored by ITSC-217,

MS-45
Moderator: Johnselvakumar Fielke, Univ of South Australia

Location: 202B

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1701337	Effect of calibration experiments on the micro-parameters of wheat required in discrete element simulations Fanyi Liu, Northwest A&F University, Yangling, Shaanxi China, People's Republic of (Fanyi Liu, Jun Chen)
10:35AM	1701372	Particle and geometry scaling of the hysteretic spring/linear cohesion contact model for discrete element modelling of soil-tool simulation Mustafa Ucgul, Adelaide, South Australia Australia (Presenter: John Milton Fielke) (Mustafa Ucgul, Chris Saunders, John Milton Fielke)
10:50AM	1701589	A New Method of Quantifying Discrete Element Method Predicted Furrow Profiles of Narrow Point Openers James Barr, University of South Australia, Mawson Lakes, Australia (James Barr, John Fielke, Jacky Desbilles)

WEDNESDAY, JULY 19

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 330

UAV FOR SENSING, IMAGING, AND CROP MATERIAL APPLICATION - PART 2

– Sponsored by ITSC-318, MS-58, MS-60, ITSC-312
Moderator: Yan-Fu Kuo, National Taiwan Univ

Location: 202C

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1701157	A review on application of Unmanned Aerial Vehicles in agriculture Dharani Suresh Babu, North Dakota State University, Fargo, North Dakota United States (Joao Paulo Flores, Ighathinathane Cannayen, Dharani Suresh Babu)
10:35AM	1701251	Identify and Develop Glyphosate Resistant Weed Maps in Corn Fields Based on UAV imagery Alimohammad Shirzadifar, North Dakota State University, Fargo, ND United States (Alimohammad Shirzadifar, Sreekala Bajwa, Mohammadmehdi Maharlooie, Oveis Hassanijalilian, Kirk Howatt, Michael Ostlie, John Nowatzki, Brock Zenzen, Kathryn Hooge)
10:50AM	1701302	Validation Testing of UAV-based Vegetable Growth Estimation Models Donguk Kim, Seoul National University, Seoul, Seoul South Korea (Dong-wook Kim, Sang-Jin Jeong, Heesup Yun, Young-Seok Kwon, Hak-Jin Kim)
11:05AM	1701353	Phenotyping Morphological Traits of Blueberry Bushes using UAS Aaron Patrick, University of Georgia, Athens, GA United States (Aaron Patrick) (Aaron Patrick, Charlie Li)
11:20AM	1701487	Monitoring for Sorghum Growth from Unmanned Aircraft Systems with Thermal and Multispectral Sensing Technologies. Yan Zhu, Purdue University, Lafayette, IN United States (Yan Zhu, Keith Cherkauer)
11:35AM	1701593	Better Almond Water Stress Monitoring Using Fractional-order Normalized Difference Vegetation Index (NDVI) Tiebiao Zhao, University of California, Atwater, CA United States (Tiebiao Zhao, YangQuan Chen, Andrew Ray, David Doll)
11:50AM	1701146	Development Prospect of UAV for Plant Protection in China Sizhe Zhang, (Presenter: Jie Ma) (Sizhe Zhang, Jie Ma, Wenshen Jia, Hengzhi Zhang)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 331

AUTOMATION AND ROBOTICS FOR FRUIT, VEGETABLES AND OTHER SPECIALTY CROPS - PART 2

– Sponsored by MS-48
Moderator: Manoj Karkee, Washington State Univ

Location: 203

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700662	Development of a new dry bin filler for apple harvesting and infield sorting with a review of past and existing technologies Zhao Zhang, Michigan State University, East Lansing, MI United States (Presenter: Renfu Lu) (Zhao Zhang, Anand Pothula, Renfu Lu)
10:35AM	1700160	Designing and evaluating the use of crop signaling markers for fully automated and robust weed control technology Thuy Nguyen, University of California Davis, Davis, CA United States (Presenter: Vivian Vuong) (Thuy Nguyen, David Slaughter, Steven Fennimore, Vivian L. Vuong)

10:50AM 1700587

Evaluation of a new apple in-field sorting system for fruit singulating and imaging

Anand Pothula, USDA Sugarbeet and Bean Research Unit, East Lansing, MI United States (Anand Pothula, Renfu Lu, Zhao Zhang)

11:05AM 1700871

An Automated System for Crop Signaling and Robotic Weed Control in Processing Tomato

Vivian Vuong, University of California Davis, Davis, CA United States (Vivian Vuong, David Slaughter, Thuy Nguyen, Steve Fennimore, D Ken Giles)

11:20AM 1701288

Stereo Vision for Computational Bird Detection and Deterrence

Shivam Goel, Washington State University, Pullman, Washington United States (Shivam Goel, Santosh Bhusal, Matthew Taylor, Manoj Karkee)

11:35AM 1701420

Automated high-throughput machine vision-guided waterjet knife strawberry calyx removal system

Yang Tao, University of Maryland, College Park, MD United States (Yang Tao, John Lin, Robert Vinson, Maxwell Holmes, Xuemei Cheng, Gary Seibel)

11:50AM 1701120

Performance Improvement of a Vineyard Robot through its Mechanical Design

Veronica Saiz-Rubio, Universitat Politècnica De Valencia, Valencia, Spain (Veronica Saiz-Rubio) (Veronica Saiz-Rubio, Francisco Rovira-Mas, Christophe Millot)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 332

ANAEROBIC DIGESTION PART 2

– Sponsored by NRES-27, PRS-707

Moderator: Rhonda Miller, Utah State Univ

Location: 205

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700310	Lessons learned from a Waste-to-Energy Project at a Dairy Facility in Texas. Anish Jantrania, Texas A&M University, Temple, TX United States (Anish Jantrania) (Anish Jantrania, Rajani Srinivasan, June Wolfe)
10:35AM	1700626	Estimating the Economic Value of the Greenhouse Gas Emission Reductions Associated with on-farm Dairy Manure Anaerobic Digestion Systems in New York State Curt Gooch, Cornell University, Ithaca, NY United States (Curt Gooch) (Curt Gooch, Peter Wright, Jason Oliver) Chun Chen, Chu-Yang Chou, An-Chi Liu)
10:50AM	1701552	Software to Encourage Dairy Manure-Based Anaerobic Digester and Greenhouse Synergies Timothy Shelford, Cornell University, Ithaca, NY United States (Timothy Shelford, Curt Gooch)
11:05AM	1700932	Anaerobic Co-digestion of Bamboo Biomass and Swine Manure Yi-Chun Chen, National Taiwan University, Taipei city, Taiwan China, Republic of (Taiwan) (Yi-Chun Chen, Chu-Yang Chou, An-Chi Liu)
11:20AM	1700366	Feasibility of Co-digesting Swine Manure with Corn Stover Haipeng Wang, University of Missouri, Columbia, Missouri United States (Haipeng Wang)
11:35AM	1700167	Biogas Production by Thermophilic Anaerobic Co-digestion and its Dry Reforming Bo Zhang, North Carolina A&T State University, Sumnerfield, NC United States (Bo Zhang) (Bo Zhang, Lijun Wang, Dominic Bekoe, Rui Li)

WEDNESDAY, JULY 19

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 333

ADVANCES IN NRCS CURVE NUMBER AND HYDROLOGIC APPROACHES – Sponsored by NRES-21
Moderator: Bill Tollner, Univ of Georgia

Location: 206A

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700756	Improvement and evaluation of SCS model based on a modified antecedent runoff condition Pingjin Jiao, IWHR IWHR.COM, Beijing, China, People's Republic of (Yingduo Yu, Zhanqing Xing, Haorui Chen)
10:35AM	1700189	Calibration and comparison of forest canopy interception models Anna Linhoss, Mississippi State University, Starkville, Mississippi United States (Anna Linhoss, Courtney Seigert, Delphis Levia)
10:50AM	1700376	Influence of Land Use of Soil Bulk Density, Infiltration, and NRCS Runoff Curve Number Carmen Agouridis, University of Kentucky, Lexington, KY United States (Samuel Austen, Dwayne Edwards, Carmen Agouridis, Lindell Ormsbee)
11:05AM	1700315	Comparing the Automated Dual-Head Analysis from a Single-ring Infiltrometer with a double-ring Infiltrometer Leonardo Rivera, METER Group Inc., Pullman, WA United States (Leonardo Rivera, Emily Campbell)
11:20AM	1700151	Using Agricultural Mulches to Reduce Post-wildfire Wind Erosion Peter Robichaud, USDA Forest Service, Moscow, ID United States (Peter Robichaud, Jyoti Jennewein, Brenton Sharratt, Sarah Lewis, Robert Brown)
11:35AM	1701651	New Developments with the NRCS Curve Number Method Ernest Tollner, University of Georgia, Athens, Georgia United States (Ernest Tollner)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 334

DROUGHT PREDICTIONS, IRRIGATION AND DRAINAGE – Sponsored by NRES-21
Moderator: Joel Paz, Mississippi State Univ

Location: 206B

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1701299	Probability Analysis of Carryover Storage to Evaluate Drought Response Capacity of Agricultural Reservoirs in Paddy Irrigation Jehong Bang, Seoul National University, Gwanak-gu, Seoul South Korea (Jehong Bang, Jin-Yong Choi)
10:35AM	1700736	Development of Streamflow Forecasts for Multiple River Basins in South Texas Tushar Sinha, Texas A&M University, Kingsville, Texas United States (Mohamed Elansary, Tushar Sinha)
10:50AM	1700664	Assessment of Seasonal Drought Forecasts in Dynamic Climate Models over Sub-Saharan Africa Di Tian, Auburn University, Auburn, Alabama United States (Di Tian, Eric F Wood)
11:05AM	1700839	Maize Yield Response to Different Irrigation Methods, Regimes and Various Timing Nitrogen Applications at South-central Nebraska Ali Mohammed, University of Nebraska-Lincoln, Lincoln, NE United States (Ali Mohammed, Suat Irmak, William Kranz)
11:20AM	1700846	Determination of Crop Coefficients for Guayule Irrigation Scheduling in the US Desert Southwest Douglas Hunsaker, USDA ARS, Maricopa, Arizona United States (Douglas Hunsaker)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 335

ENGINEERING FOR URBAN AGRICULTURE – Sponsored by NRES-28
Moderator: Carmen Agouridis, Univ of Kentucky

Location: 206C

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1701456	Pretreatment of straw bale growth substrates for plant production. Sherry Blunk, University of California Davis, Davis, CA United States (Sherry Blunk, Bryan Jenkins)
10:35AM	1700159	Developing air-propelled abrasive grit applicators for organic vegetable production Sam Wortman, University of Nebraska - Lincoln, Lincoln, NE United States (Sam Wortman, Emily Braun, Daniel Humburg, Frank Forcella, Sharon Clay)
10:50AM	1701516	Overview of Production of Several Vegetable Crops Reared under Different Light Technologies in an Indoor Aquaponic System Janelle Hager, Kentucky State University, Frankfort, Kentucky United States (Janelle Hager, George Pate, Luke Oliver, Charles Shultz, Shawn Cayle, Leigh Anne Bright, Zachary Kupchinsky, James Tidwell)
11:05AM	1701569	Co-Cultivation of Microalgae in Aquaponics Systems Min Addy, University of Minnesota, St Paul, MN United States (Min M. Addy) (Faryal Kabir, Dean Current, Renchuan Zhang, Qian Lu, Xiangyuan Deng, Richard Griffith, Hongyan Ren, Yiwei Ma, Wenguang Zhou, Paul Chen, Roger Ruan)
11:20AM	1700657	Urban and Agricultural Watershed Hydraulic Characteristics David Bosch, USDA ARS, Tifton, GA United States (David Bosch, Alisa Coffin, Randy Williams)
11:35AM	1700826	Management of Construction Waste in Farm Buildings – The Nigerian Situation Kevin Nwaigwe, University of South Africa, Johannesburg, South Africa (Sabbas Asoegwu) (Kevin Nwaigwe, Sabbas Asoegwu)
11:50AM	1700641	Fingerprinting and Modeling to identify sources of in-stream sediments in an urban watershed Kritika Malhotra, Auburn University, Auburn, Alabama United States (Kritika Malhotra) (Kritika Malhotra, Jasmeet Lamba, Puneet Srivastava)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 336

BMPS FOR AGRICULTURAL DRAINAGE – Sponsored by NRES-23
Moderator: Ehsan Ghane, Univ of Minnesota

Location: 206D

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1701509	Assessing the Large-Scale Feasibility of Wetlands as Agricultural BMPs: A Literature Review Chelsie Boles, LimnoTech, Ann Arbor, Michigan United States (Chelsie Boles, Scott Bell, Greg Peterson, Michael Voorhees, Anthony Friona)
10:35AM	1700861	Assessing the Large-Scale Feasibility of Wetlands as Agricultural BMPs: An Engineering Evaluation Derek Schlea, Limno Tech, Britton, Michigan United States (Derek Schlea, Scott Bell, Chelsie Boles, Michael Voorhees)
10:50AM	1701194	Drainage Water Recycling: Estimating Nutrient Loss Reduction for Various Pond Volumes Jane Frankenberger, Purdue University, West Lafayette, IN United States (Jane Frankenberger, Ben Reinhart)
11:05AM	1700400	On-farm evaluation of an edge-of-field tile drainage treatment wetland Heidi Peterson, Minnesota Department of Agriculture, St Paul, Minnesota United States (Christian Lenhart, Brad Gordon, Joshua Gamble, Dean Current, Heidi Peterson)

WEDNESDAY, JULY 19

11:20AM	1700268	<p>Challenges and opportunities to use electrical stimulation in nitrate-removal woodchip bioreactors Michelle Soupir, Iowa State University, Ames, IA United States (Ji Yeow Law, Michelle Soupir, D. Raj Raman, Thomas Moorman)</p>
11:35AM	1700176	<p>Mitigating of N and P losses using drainage control/sub-irrigation with water recycling systems Chin Tan, Agriculture & Agri-Food Canada, Harrow, Ontario Canada (Chin Tan, Tiejuan Zhang)</p>
11:50AM	1701282	<p>Modeling effects of drainage water management in fields with rolling topography Vinayak Shedekar, The Ohio State University, Piketon, Ohio United States (Vinayak Shedekar, Kevin King, Norman Fausey, Rafiq Islam, Alfred B.O. Soboyejo, Larry Brown)</p>

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 337

STREAM PROCESSES AND RESTORATION

– Sponsored by NRES-28, NRES-25

Moderator: David Bliersch, Auburn, Univ

Location: 207

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700133	<p>A Framework for Evaluating the Effectiveness of Streambank Stabilization Practices for Reach-Scale Sediment Load Reduction Garey Fox, North Carolina State University, Raleigh, NC United States (Holly Enlow, Garey Fox, Abigail Parnell, Dan Storm, Tracy Boyer, Art Stoecker, Daniel Moriasi, Patrick Starks)</p>
10:35AM	1700287	<p>Quantifying Cost-Efficiency of Streambank Stabilization Practices on Cedar River, Nebraska Aaron Mittelstet, University of Nebraska-Lincoln, Lincoln, NE United States (Presenter: Naisargi Dave) (Naisargi Dave, Aaron Mittelstet)</p>
10:50AM	1701228	<p>Using 137Cs and 210Pbxs to Identify Suspended Sediment Sources in an Agricultural Watershed Jasmeet Lamba, Auburn University, Auburn, AL United States (Jasmeet Lamba, KG Karthikeyan, Anita Thompson)</p>
11:05AM	1701268	<p>Improved physical representation of in-stream processes for water quality models using tracer studies Femeena Pandara Valappil, Purdue University, West Lafayette, IN United States (Femeena Pandara Valappil, Indrajeet Chaubey, Nicola Fohrer, Paul Wagner)</p>
11:20AM	1701176	<p>Measuring Water Quality Impact of a Coastal Plain Stream Restoration during Construction Danielle Winter, North Carolina State University, Raleigh, NC United States (Danielle Winter)</p>
11:35AM	1701438	<p>Do the bugs even care?: assessing connections between agricultural nutrient losses and riparian zone ecology Tamie Veith, USDA ARS, University Park, PA United States (Tamie Veith Sarah Goslee)</p>

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 339

PLANT, ANIMAL AND FACILITY SYSTEMS POSTER SESSION

– Sponsored by PAFS

Moderator: Tim Shepherd, Iowa State Univ

Location: 111ABC

Poster#	Paper#	Title/Author
60	1700081	<p>A Dairy Long Day Lighting Success Story: MI Dairy Increases Production and Cuts Costs Aryn Thomas, Michigan State University, White Lake, MI United States Aryn Thomas, Jacqueline Thelen, Aluel Go, Truman Surbrook, Mark Vanee, Jon Althouse)</p>

61	1700100	<p>Evaluation of Seasonal Air Quality and Emission from a Dairy Barn in Northeastern China Using the Developed Environmental Monitoring Units Chaoyuan Wang, China Agricultural University, Beijing, China, People's Republic of (Presenter: Yu Liu) (Guanghui Rao, Chaoyuan Wang, Zhengxiang Shi, Zongyang Li, Yujian Lu, Baoming Li)</p>
62	1700243	<p>Effect of varying manifold gas pressure on the output of round radiant heaters John Linhoss, Mississippi State University, Mississippi State, Mississippi United States (John Linhoss)</p>
63	1700244	<p>Using fuzzy system to evaluate welfare of piglets reared in environment with solar heating systems Flávio Damasceno, Universidade Federal de Vicosa, Lavras, Minas Gerais Brazil (Presenter: Jofran Oliveira) (Flávio Damasceno, Carlos Oliveira, Lucas Abreu, Leonardo Schiassi, Jofran Oliveira)</p>
64	1700246	<p>Piglets behavior evaluation using digital image processing Flávio Damasceno, Universidade Federal de Vicosa, Lavras, Minas Gerais Brazil (Presenter: Jofran Oliveira) (Flávio Damasceno, Claudio Soares, Carlos Oliveira, Jofran Oliveira, Maria Oliveira)</p>
65	1700257	<p>Effects of a Commercial LED Light vs. a Typical CFL Light on Laying Performance, Egg Quality, and Welfare Conditions of W-36 Laying Hens Kai Liu, Iowa State University, Ames, Iowa United States (Kai Liu, Hongwei Xin, Sekhon Jasreen, Tong Wang, Suzanne Millman)</p>
66	1700288	<p>Deep-Bed-Pack Livestock Facility Planning Tool Sally Bredeweg, USDA-NRCS West National Technology Support Center, Portland, OR United States ((Sally Bredeweg, Matthew Robert)</p>
67	1700343	<p>A Comparison of Wood Pellet and Natural Gas Heating Systems for Broiler Houses Doug Overhults, University of Kentucky, Princeton, KY United States (Doug Overhults)</p>
68	1700373	<p>Research on Distribution of Environmental parameters in Plastic mulch type greenhouse cattle barn during winter based on CFD Juan Ma, China Agricultural University, Beijing, Haidian China, People's Republic of (Presenter: Xiao Chen) (Hao Li, Lingzhuo Kong, Bin Feng, Hongying Wang, Jie Zhang, Jian Su, Xiao Chen)</p>
69	1700378	<p>Thermal Environment Assessment and Controller Performance Comparison for a Wean-Finish Swine Barn Brett Ramirez, Iowa State University, Ames, IA (Brett Ramirez, Steven Hoff, Jay Harmon)</p>
70	1700425	<p>An Integrated Purifier for Livestock and Poultry Based on Safe Air and Drinking Water Zhao Wang, China Agricultural University, Beijing, China, People's Republic of (Presenter: Jinkui Feng) (Guanghui Wang, Decheng Wang, Jinkui Feng, Dingding Li, Zhiheng Lu, Yan Yu)</p>
71	1700426	<p>New Structure Design of the Diagonal of the Container Zhao Wang, China Agricultural University, Beijing, China, People's Republic of (Presenter: Xiaopeng Bai) (Qingyun Sun, Xiaolin Zhang, Yan Yu, Zhiqing Wang, Decheng Wang, Guanghui Wang, Zhao Wang, Xiaopeng Bai)</p>
72	1700466	<p>A rod platform weighing system for the average weight and uniformity of broilers in group house Kailao Wang, Zhejiang University, Hangzhou, Zhejiang China, People's Republic of (Kailao Wang, Jinming Pan, Xiuqin Rao, Yibin Ying)</p>
73	1700524	<p>Facilities tomato growth environment temperature range based on least squares support vector machines Lina Wang, Northwest A&F University, Yangling, China, People's Republic of (Lina Wang)</p>

74	1700532	<p>Effects of a simulated power cut in milking robots on dairy cows' lying behaviour Anja Graeff, Technical University of Munich, Chair of Agricultural Systems Engineering, Freising, Bavaria Germany (Presenter: Prof. Dr. Heinz Bernhardt) (Anja Graeff, Manuel Hermann, Hannes Petermeierpican, Heinz Bernhardt, Gundula Hoffmann)</p>	88	1701206	<p>Balancing C/N ratio for mitigating ammonia emissions from dairy manure with <i>A. faecalis</i> strain No. 4 Xiaoyun Xue, Washington State University, Pullman, WA United States (Xiaoyun Xue, Gopi Kafle, Pius Ndegwa)</p>
75	1700571	<p>Understanding the Gait Dynamics of Broiler Chicken Irenilza Naas, FEAGRI, Campinas, Sao Paulo Brazil (Irenilza Naas, Saman Mehdizadeh, Diego Neves, Luiz Lozano, Rodrigo Garcia)</p>	89	1701221	<p>Manipulating methanethiol production and utilization rates for odor control Dian Zhang, Virginia Tech, Blacksburg, VA United States (Presenter: Yewei Sun) (Dian Zhang, Zhi-wu Wang)</p>
76	1700580	<p>Counting Trunk Number of Frozen Shark at Harbor by Image Processing and Projective Transformation Ching-Lu Hsieh, National Pingtung University of Science & Technology, Taiwan, China, People's Republic of (Ching-Lu Hsieh, Shin-Chen Lee, Jun-Ching Huang)</p>	90	1701260	<p>Analysis of turkey sound as a non-invasive technique for turkey wellbeing assessment Zhimin Tong, Purdue University, West Lafayette, Indiana United States (Zhimin Tong, Jiqin Ni, Marisa Erasmus)</p>
77	1700627	<p>Greenbox Farming: A New System for Urban Agriculture Xiusheng Yang, University of Connecticut, Storrs, CT United States (Presenter: Cong Liu) (Xiusheng Yang, Daniel Theobald, Richard McAvoy, Junya Wu, Cong Liu)</p>	91	1701323	<p>Area Integrated Measurements of N₂O Emissions from a Texas Beef Cattle Feedlot Using an Open-Path FTIR Ken Casey, Texas A&M AgriLife Research, Amarillo, TX United States (Ken Casey, Richard Todd, David Parker, Heidi Waldrip)</p>
78	1700671	<p>Developing nanocelluloses from prairie cordgrass by combination of homogenizing and chemical pre-treatments Lin Wei, South Dakota State University, Brookings, South Dakota United States (Presenter: Shouyun Cheng) (Lin Wei, Sarmila Katuwal, Gary Anderson)</p>	92	1701358	<p>Development of a multi-layered interactive 'virtual farm' website for dairy sustainability information Eileen Fabian, Pennsylvania State University, University Park, PA United States (Eileen Fabian, Daniel Hofstetter, Mathew Ruark, Rebecca Larson, Horacio Aguirre-Villegas, Carolyn Betz)</p>
79	1700749	<p>Light optimization for A LED-based candling system and detection of egg fertility Gai Zhu, Zhejiang University, Hangzhou, Zhejiang China, People's Republic of (Gai Zhu, Jinming Pan, Yibin Ying)</p>	93	1701377	<p>Fabricating rare earth-doped upconversion fluorescent nanoparticles for multiplex control of food-borne pathogens Huanhuan Li, (Huanhuan Li)</p>
80	1700792	<p>Gas Emissions from Dairy Compost Bedded Pack Barns Katharine Wolf, University of Kentucky, Lexington, KY United States (Katharine Wolf, Michael Sama, Joseph Taraba, Mark Coyne, Jeffrey Bewley)</p>	94	1701392	<p>A Portable Sensor for Gas Emissions from Dairy Compost Bedded Pack Barns Michael Sama, University of Kentucky, Lexington, KY United States (Presenter: Katie Wolf) (Katharine Wolf, Michael Sama, Joseph Taraba, Mark Coyne, Jeffrey Bewley)</p>
81	1700817	<p>A Method on Sow Tracking with Adhesion Handling and Behavior Detection Based on Thermal Infrared Video Li Ma, China Agricultural University, Beijing, China, People's Republic of (Li Ma, Gang Liu, Ze Zong, Yixin Cai, Xi Meng)</p>	95	1701433	<p>Compartmental process-based model for estimating ammonia emission from liquid dairy manure storage tank Sampath A. Karunaratne, Virginia Tech, Blacksburg, Virginia United States (Presenter: Jactone A. Ogejo) (Sampath A. Karunaratne, Jactone Ogejo, Mattias Chung)</p>
82	1701016	<p>CFD Modeling of an Innovative Displacement Ventilation System for Manure-Belt Egg Layer Houses Xinjie Tong, The Ohio State University, Columbus, OH United States (Presenter: Sewoon Hong) (Xinjie Tong, Sewoon Hong, Lingying Zhao)</p>	96	1701439	<p>Manure production rates by finishing cattle in deep-pit cattle barns for the Northern Great Plains Erin Cortus, South Dakota State University, Brookings, SD United States (Erin Cortus, Warren Rusche, Joseph Darrington)</p>
83	1701034	<p>Characterizing water utilization in modern US dairies to identify opportunities for reutilization Richard Gates, University of Illinois at Urbana-Champaign, Urbana, IL United States (Yijie Xiong, Richard Gates)</p>	97	1701655	<p>Renewable biocatalyst for swine manure treatment and mitigation of odorous VOCs, ammonia and hydrogen sulfide emissions: Review Jacek Koziel, Iowa State University, Ames, Iowa United States (Devin Maurer, Jacek Koziel, Kelsey Bruning, David Parker)</p>
84	1701102	<p>Determination of the thermotherapy kinetics for citrus leaves Daoyuan Yang, University of Georgia, Athens, GA United States (Daoyuan Yang, Jose Reyes)</p>	98	1701656	<p>Pilot-scale concept of real-time wind speed-matching wind tunnel for measurements of gaseous emissions Jacek Koziel, Iowa State University, Ames, Iowa United States (Devin Maurer, Jacek Koziel, Kelsey Bruning, David Parker)</p>
85	1701162	<p>Manure Total Nitrogen Flux from Condensed Tannin Fed Beef Cattle Terra Campbell, West Texas A&M University, Canyon, Texas United States (Terra Campbell)</p>			
86	1701167	<p>Analysis of Rapidly Cooling Eastern Oysters in a Static and Dynamic Ice Bath Melody Thomas, North Carolina State University, Apex, North Carolina United States (Melody Thomas Steve Hall)</p>			
87	1701195	<p>Development of a Rainwater Harvesting Model for Broiler Farms to Estimate On-farm Storage Needs Carson Edge, Auburn University, Auburn, AL United States (Carson Edge, Eugene Simpson, Jeremiah Davis, Joseph Purswell, William Batchelor)</p>			

WEDNESDAY, JULY 19

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 340

DRYING, HANDLING AND STORAGE OF CROPS - PART 2 – Sponsored by

PRS-702

Moderator: Sam McNeill, Univ of Kentucky

Location: 302A

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1701266	Strategic Grain Reserve Programme in Nigeria: Critical Issues for Consideration Babatunde Adewumi, Federal University of Technology, Akure, Akure Nigeria (Babatunde Adewumi, Modupe Iyabo Olonila, Opeyemi Michael Kolade)
10:35AM	1700651	Post-Harvest Loss Reduction of Paddy in Bangladesh: A Novel Approach Md. Monjurul Alam, Bangladesh Agricultural University, Mymensingh, Bangladesh (Md. Monjurul Alam, Chayan Kumer Saha, Md. Abdul Awal, Md. Ayub Ali, Md. Rostom Ali, Shahana Begum, Prasanta K. Kalita, Jagger Harvey)
10:50AM	1700329	Hermetic bag an effective and economic rice storage technology in Bangladesh Abdul Awal, Bangladesh Agricultural University, Mymensingh, Bangladesh (Md Abdul Awal, Md Rostom Ali, Mohammad Afzal Hossain, Md Monjurul Alam, Prasanta Kumar Kalita, Jagger Harvey)
11:05AM	1700644	Field Performance of BAU-STR Paddy Dryer in Bangladesh Chayan Saha, Bangladesh Agricultural University, Mymensingh, Bangladesh (Chayan Kumer Saha, Md. Ashraful Alam, Md. Monjurul Alam, Prasanta K. Kalita, Jagger Harvey)
11:20AM	1700297	Mathematical Modeling of Phosphine Distribution in Grain Storage Bunkers Kaliramesh Siliveru, Kansas State University, Manhattan, Kansas United States (Kaliramesh Siliveru, Mark Casada)
11:35AM	1700991	Variability of respiration rates of high moisture soybeans at elevated storage temperatures Mary-Grace Danao, University of Nebraska - Lincoln, Lincoln, NE United States (Presenter: Lucas Trevisan) (Lucas R. Trevisan, Mary-Grace C. Danao, Richard S. Gates, Kent D. Rausch)
11:50AM	1701170	Natural air drying of corn under four different climatic zones Johnselvakumar Lawrence, Kansas State University, Hesston, KS United States (Johnselvakumar Lawrence)

Wednesday, July 19 – 10:15AM-12:15PM

SESSION 342


TECHNO-ECONOMIC MODELING OF FOOD, CO-PRODUCT, BYPRODUCT, AND WASTE STREAMS – Sponsored by

PRS-707

Moderator: Christopher Callahan, Univ of Minnesota

Location: 303A

Time	Paper#	Title/Author
10:15AM		Introduction
10:20AM	1700678	LCA and TEA of small, medium and large scale of bio-fuel derived from food waste Noor Intan Shafinas Muhammad, Iowa State University, Ames, IA United States (Presenter: Kurt A. Rosentrater) (Noor Intan Shafinas Muhammad, Kurt A. Rosentrater)
10:35AM	1700689	Techno-Economic Analysis of structural biobased adhesives made from glycerol Minliang Yang, Iowa State University, Ames, IA United States (Minliang Yang, Kurt Rosentrater)
10:50AM	1700690	Cradle to gate life cycle assessment of structural biobased adhesives made from glycerol Minliang Yang, Iowa State University, Ames, IA United States (Minliang Yang, Kurt Rosentrater)
11:05AM	1700796	Life Cycle Analysis and Techno-economic Analysis of Production, Transport and Storage of Distiller's Wet Grains Varsha Gaonkar, Iowa State University, Ames, Iowa United States (Varsha Gaonkar, Kurt Rosentrater)
11:20AM	1700819	Technical and Economic Analysis of a Solar-Bio-Powered Organic Waste Utilization and Treatment System in Central America Wei Liao, Michigan State University, East Lansing, Michigan United States (Wei Liao, Ronald Esteban Aguilar Alvarez, Mauricio Bustamante, Dana Kirk, Jose Alberto Miranda Chavarria, Jose Francisco Aguilar Pereira, Werner Rodriguez Montero, Dawn Reinhold)
11:35AM	1700834	Environmental Assessment and Economic Analysis of the Manufacturing, Transport, and Use of Actellic Super and Neemazal Insecticides for the Treatment of Maize Grains Bernard Darfour, Iowa State University, Ames, Iowa United States (Presenter: Kurt A. Rosentrater) (Bernard Darfour, Kurt A. Rosentrater)
11:50AM	1701408	Techno-economic analysis of fungal pretreatment of miscanthus for butanol production Juliana Vasco-Correa, Ohio State University, Wooster, Ohio United States (Juliana Vasco-Correa, Ajay Shah)
12:05PM	1701582	Sustainability Assessment of Single and Multi-Stream Waste Recycling Systems Hao Zhang, James Madison University, Harrisonburg, Virginia United States (Presenter: Thomas Putzu) (Thomas Putzu, Hannah Delawter-Reuter, Costantino Berardocco, Hao Zhang)



ASABE Foundation *Dinner*

Join us as we gather for an evening filled with great food, wine, conversation, and beautiful scenery *Arbor Crest Wine Cellars* while learning about the impact viticulture has on the region. Tuesday, July 18th
6-10 pm

Enjoy a presentation on the *Viticulture and a Little Enology: Science and Business of Wine* given by Gwen Hoheisel from Washington State University.

Tickets available at the AIM registration.

Get yours before they sell out!

2018 ASABE ANNUAL INTERNATIONAL MEETING

CALL FOR PAPERS

Accepting abstracts on or before October 1, 2017