

Monday, July 10 – 2:30PM-5:00PM

143-ED-INV OPPORTUNITIES IN NON-AGRICULTURALRURAL ECONOMIC DEVELOPMENTFOR ASABE MEMBERS (INVITED SPEAKERS)

Moderator: Billy J. Barfield, Oklahoma State Univ, Stillwater, OK
Location: C121

ASABE members with extensive experience in rural economic development will discuss their successful programs including working with rural infrastructure, rural manufacturers, and rural community development.

2:30PM
2:35PM

Introduction

Broadbased Development, the Arkansas Story, Otto Loewer, University of Arkansas, Fayetteville, AR

2:50PM

Working with Rural Manufacturers in Kentucky, Larry Turner, University of Kentucky, Lexington, KY

3:05PM

University of Georgia Rural Economic Development Activities, Dale Threadgill, University of Georgia, Athens, GA

3:20PM

Making Impacts with Manufacturing Extension Program forRural Manufacturers, Ron Elliott, Oklahoma State University, Stillwater, OK

3:35PM

Break

3:45PM

Partnering with Small Rural Manufacturers forNew Product Development, Larry Hoberock, Oklahoma State University, Stillwater, OK

4:00PM

Business Planning and Marketing Communication Programs forSmall Rural Manufacturers, Dan Tilley, Oklahoma State University, Stillwater, OK

4:15PM

Innovation Training Programs forSmall Rural Manufacturers, Mary Nemcook, Oklahoma State University, Stillwater, OK

4:30PM

Panel Discussion

Monday, July 10 – 2:30PM-5:00PM

144-ED-O-6B SOILAND WATER PROTECTION IN FOREST OPERATIONS (Sponsored byT-12)

Moderator: Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Auburn, AL

Location: C122

TIME PAPER # P RESENTATION TITLE

2:30PM

Introduction

2:35PM

068025 **Stream Crossings to Protect WaterQuality**, Steven E. Taylor, Auburn Univ, Auburn, AL (S.E. Taylor)

3:05PM

068026 **Soil Property Changes during the Loblolly Pine Production**, Richard Wayne Skaggs, North Carolina State Univ, Raleigh, NC (R.W. Skaggs, D.M. Amaty, C. D. Blanton, G.M. Chescheir)

3:35PM

Break

3:45PM

068027 **Erosion Response of Two Select Soils in Alabama to Clearcut Harvesting**, Emily A. Carter, USDAFS, Auburn, AL(E.A. Carter, J. Fulton, J.M. Grace III)

4:00PM

068028 **Field Performance of Long-Strand Wood Erosion Control Mulch and Agricultural Straw UnderNatural Rainfall Events**, James H. Dooley, Forest Concepts, Federal Way, WA (D.N. Lanning, J.E. Burks, R.B. Foltz)

POWER & MACHINERY

Monday, July 10 – 2:30PM-5:00PM

145-PM INV NEW PRODUCTS - INVITED SPEAKERS (Sponsored by PM)

Moderator: Randy C. Rush, John Deere, Waterloo, IA

Location: A106

2:30PM

Introduction

Each year the AE50 recognition awards honor companies offering the best engineered products for agricultural, food, biological and related systems. These products were new to the marketplace in 2005, and all have the potential for a broad impact in their area or industry. This session is open to everyone and will feature presentations on a sampling of those products receiving 2006 AE50 Awards.

FOOD & PROCESS ENGINEERING INSTITUTE

Monday, July 10 – 2:30PM-5:00PM

146-FPE INVPOST HARVESTTRACKING OFFRUITS AND VEGETABLES USING RFID TECHNOLOGY- INVITED SPEAKERS (Sponsoring Committee: FPE-712)

Moderator: Loren D. Gautz, Agriculture and Agri-Food Canada, Honolulu, HI
Location: B110

Two manufacturers will each give a 30 minute talk on the use of RFID, particularly future implementations of the technology with built-in environmental sensing capability. Following the presentations there will be an open discussion.

2:30PM

Introduction

2:35PM

Infratab, Inc., Terry Myers, Oxnard, CA

3:05PM

Alien Technology, Inc., Mark McDonald, Morgan Hill, CA

3:35PM

Discussion

POWER & MACHINERY

Tuesday, July 11 – 9:30AM-12:00PM

200-PM-7 ADVANCES IN COTTON ENGINEERING - PRODUCTION

(Sponsored by PM-23/7/3)

Moderator: Shay L. Simpson, Texas A&M Univ, College Station, TX

Location: A104

TIME PAPER # P RESENTATION TITLE

9:30AM

Introduction

9:35AM

061076 **Optimization of the Performance of a Precision PlanterMetering Cotton Seed Using Response Surface Methodology**, Adnan Degirmencioglu, EGE Univ, Bornova-Izmir, Turkey (A. Yazgi; A. Degirmencioglu)

9:50AM

061077 **Wireless GPS System forIn-Field Cotton FiberQuality Mapping**, Yu Feng Ge, Texas A & M University, College Station, TX

10:05AM

061078 **Cotton Stickiness Mitigation by Bacteria**, Paul A. Funk, USDAARS, Mesilla Park, NM (P.A. Funk, S.E. Hughs, G.R. Gamble, A. Fleury)

10:20AM

061079 **Spindle Speed Effects on Cotton Quality**, Kevin D. Baker, USDAARS, Mesilla Park, NM (K.D Baker, S.E. Hughs)

10:35AM

Break

10:45AM

061080 **Formation of Neps in Pima Cotton During Mechanical Harvesting**, William B. Faulkner, Texas A&M Univ, College Station, TX (W.B. Faulkner, D.P. Whitlock, D.D. McAlister, B.W. Shaw, C.B. Parnell, J.D. Wanjura)

11:00AM

061081 **Development of an OperatorFeedback System forthe Module Builder**, Robert G. Hardin, IV, Texas A&M Univ, College Station, TX (R.G. Hardin, S.W. Searcy)

11:15AM

061082 **Potential Costs of Not Replacing Worn Module Covers**, Shay L. Simpson, Texas A&M Univ, College Station, TX (S. L. Simpson, S.W. Searcy)

11:30AM

061083 **Features of Work of Horizontal - Spindle Cotton PickerMachines of American Firm "Case"**, T.A. Khaidarov, Tashkent Irrigation and Melioration Institute, Tiim, Tashkent, Uzbekistan (T. A. Khaidarov)

Tuesday, July 11 – 9:30AM-12:00PM

201-PM-11 MANAGEMENT STRATEGIES FOR MACHINERY SYSTEMS (Sponsored by PM-43, IET-318)

Moderator: Robert D. Grisso, Jr, Virginia Tech, Blacksburg, VA

Location: A105

TIME PAPER # P RESENTATION TITLE

9:30AM

Introduction

9:35AM

CANCELLED

9:50AM

061085 **Spreadsheet Application forMatching PowerUnits with Field Implements**, Robert D. Grisso, Jr, Virginia Tech, Blacksburg, VA (R. Grisso, J. Perumpral, F. Zoz)

10:05AM

061086 **Assessment of Economic and Phosphorus-related Environmental Impacts of Precision Feeding and Forage Management at Farm-scale**, Lula T. Ghebremichael, Penn State Univ, University Park, PA (W.J. Gburek, P.E. Cerosaletti, D. Dewing, C.A. Rotz , T. L. Vieth, J. M. Hamlett)

10:20AM

Break

10:30AM

061087 **A Systems Approach to Forage Harvest Operations**, Dennis R. Buckmaster, Penn State Univ, University Park, PA

10:45AM

CANCELLED

11:00AM

061089 **Method forFuel Prediction forSpecific TractorModels**, Robert D. Grisso, Jr, Virginia Tech, Blacksburg, VA (R. Grisso, D. Vaughan, G. Roberson)

11:15AM

061090 **Trafficability Assessment forAgricultural Lands with the Aid of a Soil Compaction Model**, Barend Marx, University of Kwa Zulu-Natal, Scottsville, South Africa – Presenter: Carel Bezuidenhout (B. Marx, C. Bezuidenhout, A. Hansen, T. Wilcox, P. Lyne)

11:30AM

061091 **Effect of Different Planting Density on Cotton Canopy Structure, Canopy Photosynthesis, and Yield Formation**, Jun Zhang, Iowa State Univ, Ames, IA (J. Hou, Q. Dong)

11:45AM

Discussion

Tuesday, July 11 – 9:30AM-12:00PM

202-PM-12 ADVANCES IN SOILDYNAMICS (Sponsored by PM-45)

Moderator: Carol Plouffe, Deere & Co, Moline, IL

Location: A103

TIME PAPER # P RESENTATION TITLE

9:30AM

Introduction

9:35AM

061092 **Dynamic Mechanical Control System forSoil Reconstruction**, Venkata S. Bodapati, Univ of Kentucky, Lexington, KY (V.S. Bodapati, L.G Wells.)

9:50AM

061093 **Development of an Instrumented Portable Device that Measures Shear, Shrinkage, and Friction**, Leroy O. Garciano, Univ of California Davis, Davis, CA (L.O. Garciano, S.K. Upadhyaya, R.A. Jones, S.R. Jersey)

10:05AM

061094 **Soil Viscosity and Yield Stress Measurements Using a Motorized Rheometer**, Subrata Karmakar, Univ of Saskatchewan, Saskatoon, SK Canada (S. Karmakar, R.L. Kushwaha)

10:20AM

061095 **The Discrete Element Method as a Tool forAnalyzing and Optimizing Soil-Implement Interaction**, Itzhak Shmulevich, Israel Inst of Tech, Haifa, Israel

10:35AM

Break

10:45AM

061096 **Torque Requirements and Forces Generated by a Deep Tilling Down-cut Rotary Tiller**, Hendrik LM Du Plessis, Univ of Pretoria, Pretoria, South Africa – Presenter: Moses Marenya (M.O Marenya, HLM du Plessis)

11:00AM

061097 **Rolling Resistance of Automobile Discarded Tyres forUse in Camel Carts in Sand**, Keshaw P. Pandey, Indian Institute of Tech, Kharagpur, India (K.P. Pandey, G. Tiwari)

11:15AM

061099 **Measuring Soil Pressure Distribution in Undisturbed Soil Profiles**, Peter W. Lyne, South African Sugarcane Research Institute, Mt Edgecombe, KZN, South Africa (JLEweg, PWL Lyne, CN Bezuidenhout)

11:30AM

061098 **A Decision Support System (DSS) forSoil Compaction Management**, Carel Bezuidenhout, South Agrican Sugar Association Experiment Station, Mount Edgecombe, KwaZulu Natal, South Africa (BJ Marx, CN Bezuidenhout, PWL Lyne)

11:45AM

Discussion

Tuesday, July 11 – 9:30AM-12:00PM

203-PM-20 SENSORS AND CONTROLS FOR PRECISION

AGRICULTURE (Sponsored by PM-54, IET-353)

Moderator: Ahmad Khalilian, Clemson Univ, Blackville, SC

Location: Exhibit Hall A

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061100	Development of a Sensor Array for Manure Nutrient Analysis , Unal Kizil, North Dakota State Univ, Dickinson, ND (U. Kizil)
9:50AM	061101	Implementing the I2C Synchronous Serial Bus for Control and Processing of an Ultrasonic Sensor Array , Arnold W. Schumann, Univ of Florida, Lake Alfred, FL (A.W. Schumann, H.K. Hostler)
10:05AM	061102	Corn Stalk Sensor Optimization using Finite Element Modeling , Haizhou Li, Univ of Tennessee, Knoxville, TN (H. Li, J. Wilkerson, H. Moody, S. Worley)
10:20AM	061103	Detecting Stink Bugs/Damage in Cotton Utilizing a Portable Electronic Nose , Ahmad Khalilian, Clemson Univ, Blackville, SC (W. Henderson, A. Khalilian, Y. Han, R. Dodd)
10:35AM	061104	Dynamic Friction Coefficient Measurement of Granular Fertilizer Particles , Tony E. Grift, Univ of Illinois, Urbana, IL (T.E. Grift, G. Kweon, J.W. Hofstee, R. Oberti, E. Piron, S. Villette)
10:50AM		Break
11:00AM	061105	Instrumentation and Control for Wireless Sensor Network for Automated Irrigation , Yunseop Kim, USDA-ARS, Sidney, MT (Y. Kim, R. Evans, F. Pierce)
11:15AM	061106	Modeling and Simulation of a Four-Wheel-Steered Agricultural Robotic Vehicle , Lav R. Khot, Iowa State Univ, Ames, IA (L.R. Khot, L. Tang)
11:30AM	061107	Roadside Spray Control: On-Board Monitoring and Recording of Environmental Conditions for the Prevention of Application in Adverse Conditions , Duane L. Needham, University of California-Davis, Walnut Creek, CA (D. Needham, D. Slaughter, D. K. Giles)
11:45AM	061108	Real-time Moisture Measurement on a Forage Harvester Using NIRS , Matthew F. Dugman, University of Wisconsin - Madison, Madison, WI (M.F. Dugman, K.J. Shimmers)
12:00PM	061109	Non Destructive Method for Measuring Moss Water Status using Texture Analysis and Artificial Neural Networks Model , Mirwan Ushada, Osaka Prefecture University, Osaka, Japan (M. Ushada, H. Murase, H. Fukuda)

SOIL & WATER

Tuesday, July 11 – 9:30AM-12:00PM

204-SW-4 INNOVATIONS IN HYDROLOGICAL MODELING

(Sponsored by SW-21)

Moderator: Prasanna H. Gowda, USDAARS, Bushland, TX

Location: B113

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	062126	Auto Calibration of Complex Watershed Models using Simulation-Optimization Framework , Kulamulla P. Sudheer, National Institute of Hydrology, Andhra Pradesh, India (G. Lakshmi, K.P. Sudheer, I. Chaubey)
9:50AM	062127	Automatic Calibration of Hydrologic Parameters in HSPF using PEST , Sang Min Kim, Virginia Tech, Blacksburg, VA (S.M. Kim, B.L. Benham, K.M. Brannan, R.W. Zechoski)
10:05AM	062128	Multi-Objective Automatic Calibration of a Semi-Distributed Watershed Model using Pareto Ordering Optimization and Genetic Algorithm , Remegio B. Confesor, Jr, Oregon State Univ, Corvallis, OR (R.B. Confesor, Jr., G. Whittaker)
10:20AM	062129	Multi-Objective Optimization for Water Quality Management in a River System , D.L. Parmar, Indian Institute of Technology, DELHI, New Delhi, India (D.L. Parma, A.K. Keshari)
10:35AM	062130	Calibration of an Integrated Hydrological, Ecological and Economical Modeling System , Xianglian Li, Univ of Connecticut, Storrs Mansfield, CT (X. Li, X. Yang)
10:50AM		Break
11:00AM	062131	Artificial Neural Network Application for Stream Flow Forecasting in Portneuf Watershed of Idaho , S Sudhanshu, Idaho State University GIS Training and Research Center, Pocatello, ID (S.S. Panda)
11:15AM	062132	A Comparison of Artificial Neural Networks and Statistical Regression for Streamflow Prediction , Jonathan P. Resop, Univ of Maryland, College Park, MD (J.P. Resop, H.J. Montas)
11:30AM	062133	Application of Dynamic Agricultural Nonpoint Source Assessment Tool (DANSAT) to an Agriculture Watershed in Virginia , Jae-Pil Cho, Virginia Tech, Blacksburg, VA (J. Cho, S. Mostaghimi)
11:45AM	062134	A Regional Hydrologic Simulation Model with Object-Oriented Local Hydrology Process Modules , Eric G. Flaig, South Florida Water Mgmt Dist, Lehigh Acres, FL (E.G. Flaig, R. Vanzee, W. Lal)

Tuesday, July 11 – 9:30AM-12:00PM

205-SW-05 EMERGING ISSUES IN WATER QUALITY (Sponsored by SW-21)

Moderator: Jason R. Vogel, USGS, Lincoln, NE

Location: B110

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	062135	The Fate and Transport of Veterinary Antimicrobials in the Environment , Sarah M. Sanders, Auburn Univ, Brundidge, AL (S.M. Sanders)
9:50AM	062136	Transport and Numerical Simulation of Cadmium in Saturated Soil Columns with Free Drainage , Shaoyuan Feng, China Agricultural University, Beijing, China (Z. Qi, S. Feng)
10:05AM	062137	Nutrient and Pesticide Transport from a Golf Course Watershed , Kevin W. King, USDAARS, Columbus, OH (K.W. King, J.C. Balogh)
10:20AM	062138	Geomorphological Modeling of Thermal Runoff from Urban Watersheds , Kyunghyun Kim, Univ of Illinois, Madison, WI (K. Kim; A. Thompson)
10:35AM	062139	Innovations in River Modeling – Integration of Hydrological and Water Quality models Balances Municipal Potable Water Needs and Stream Ecology , Thomas Marshall, Delaware, OH (T.H. Marshall)
10:50AM		Break
11:00AM	062140	Microbial Source Tracking in the Plum Creek Watershed in Central Nebraska , Jason R. Vogel, USGS, Lincoln, NE (J.R. Vogel, D.M. Stoeckel, R. Lamendella)

11:15AM	062141	Quantification of Spatial Distribution of Runoff Source Areas in an Agricultural Watershed , Indrajeet Chaubey, Univ of Arkansas, Fayetteville, AR (I. Chaubey, M. LeH, J.V. Brahana)
11:30AM	062142	Effect of Hog Manure Fertilizer on Water Quality and Soil Productivity , Charles P. Maule, Univ of Saskatchewan, Saskatoon, SK Canada (C.P. Maule, J. Elliott)
11:45AM	062143	Effect of Behavior of Pasturing Cattle on Water Quality in Grassland , Eikichi Shima, Kitasato Univ, Towada Aomori, Japan (E. Shima, H.i Yokoyama, S. Tsutsumi, K. Watanabe)

Tuesday, July 11 – 9:30AM-12:00PM

206-SW-06 EROSION MECHANICS AND PREDICTION (Sponsored by SW-22)

Moderator: Joan Q. Wu, Washington State Univ, Pullman, WA

Location: B111

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	062144	Changes in Stream Bank Erodibility and Critical Shear Stress Due to Surface Weathering , Marc B. Henderson, Virginia Tech, Blacksburg, VA (M.B. Henderson, T.M. Wynn)
9:50AM	062145	Evaluation of Temporal and Spatial Sediment Dynamics in Agricultural Fields using Lanthanide Tracers , K.G. Karthikeyan, Univ of Wisconsin, Madison, WI – Presenter: Perry Cabot (K.G. Karthikeyan, J.D. Grande, P.S. Miller, P.D. Gaebler, S.B. McClure, P.E. Cabot, A.P. Stubblefield, P.J. Whiting, G. Matisoff)
10:05AM	062146	Evaluation of Temporal & Spatial Sediment Dynamics in Agricultural Fields using Naturally-Occurring & Fallout Radionuclides , K.G. Karthikeyan, Univ of Wisconsin, Madison, WI – Presenter: Perry Cabot (A. Stubblefield; P. Whiting; G. Matisoff; K. Karthikeyan; J. Grande; P. Miller; P. Gaebler; S. McClure; P. Cabot)
10:20AM	062147	Modeling Event-Based Soil Erosion on Hillslopes: Evaluating USLE-M and MUSLE Models under Simulated Rainfall Conditions , Chun Mei Yao, Washington State University, Pullman, WA (S.M. Yao, T. Lei, S. Chen, C. Okeren)
10:35AM		Break
10:45AM	062148	WEPP with Energy-Based Winter Routine for Simulating Winter Hydrologic Processes in the Pacific Northwest, USA , Ronald Cory Greer, USDA-NRCS, Ontario, OR (P. Singh, C.-H. Lin, R.C. Greer, S. Dun, J.Q. Wu, D.K. McCool)
11:00AM	062149	Watershed Prioritization using USLE, GIS, and Remote Sensing , Bimal C. Mal, Indian Institute of Tech, Kharagpur, India
11:15AM	062150	Adapting the Water Erosion Prediction Project (WEPP) Model to Forest Conditions , Shuhui Dun, Washington State Univ, Pullman, WA (S. Dun, J. Q. Wu, W.J. Elliot, P.R. Robichaud, D.C. Flanagan)
11:30AM	062151	Soil Properties and Its Impact on the Mobility of Contaminants Leached Down Gradient of Ordof Landfill in Central Guam , Mohammad Golabi, University of Guam, Mangilao, Guam (M.H. Golabi, G.R.W. Denton, H.R. Wood, Y. Wen, C. Iyekar)
206-SW-06	Tuesday, July 11	

Tuesday, July 11 – 9:30AM-12:00PM

207-SW-07 NON-POINT SOURCE POLLUTION CONTROL

STRUCTURES (Sponsored by SW-22)

Moderator: Steven K. Mickelson, Iowa State Univ, Ames, IA

Location: B112

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	062152	Effect of Buffer Strip Processes on Pesticide Transport from Agricultural Fields: a Review , Kapil Arora, Iowa State Univ Extension, Nevada, IA (K. Arora, S.K. Mickelson, J. L. Baker, M.J. Helmers)
9:50AM	062153	Effect of Pasture Management on Soil Solution Nitrate-N Content and Water Quality , Gueorgui Angelov, Florida A & M University, Tallahassee, FL (G. Angelov, I. Angelova)
11:45 AM	062160	Vegetated Filter Strip System Design - Overview and Case Study , Jan Allen, CH2M Hill, Bellevue, WA – Presenter Jose Bicudo (J. Bicudo; R. Stone; E. Pastrik; J. Patterson; P. Hazlewood; D. Mlynarz)
10:05AM	062154	Military Maneuver Effects on Water Quality and Non-Point Source Pollution: Implications for Training and Land Use , Niels G. Svendsen, US Army Corps of Engineers, Champaign, IL (N.G. Svendsen, P.K. Kalita, D. L. Gebhart)
10:20AM	062155	Performance Evaluation of Batch-Reactor Constructed Wetlands for Dairy Wastewater Treatment , Peter A. Clark, Kansas State Univ, Manhattan, KS (P. Clark, K. Mankin)
10:35AM	062156	CANCELLED
10:50AM		Break
11:00AM	062157	Real-Time Monitoring of Wastewater Characteristics in Septic Tanks: An Innovative Bmp , Clement Solomon, West Virginia Univ, Morgantown, WV (C. Solomon, J. Kamalesh, Lianshin Lin)
11:15AM	062158	Strategies for Minimizing Afo Waste Impacts on Drinking Water Sources , Peter E. Wright, NRCS, Syracuse, NY (R.W. Gullick, R.A. Brown, P. Wright, C. Gooch, B.W. Auvermann, L. Marsh, T. Harter, V. Johnson)
11:30AM	062159	Treatment of Milking Center Wastewater in a Sequencing Batch Reactor (Sbr) , Xiao Wu, University of Minnesota, Waseca, MN (X. Wu, J. Zhu, C. Miller)
11:45AM	062160	Vegetated Filter Strip System Design - Overview and Case Study , Jose R. Bicudo, CH2M Hill Canada, Waterloo, ON Canada – Presenter: José R. Bicudo (R.B. Stone, E. Pastrik, J. Patterson, P. Hazlewood, D. Mlynarz)

Tuesday, July 11 – 9:30AM-12:00PM

208-SW-08 PRECISION IRRIGATION TECHNOLOGIES

(Sponsored by SW-24)

Moderator: Troy Peters, Washington State University, Prosser, WA

Location: B114

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	062161	Advances in Center Pivots for Site Specific Management , Jacob L. LaRue, Valmont Irrigation, Omaha, NE (J. LaRue, C. Malsam)
9:50AM	062162	A Remote-Real-Time Continuous Move Irrigation Control and Monitoring System , Francis J. Pierce, Washington State University, Prosser, WA (F.J. Pierce, J.L. Chavez, T. Elliott, G. Matthews, R. Evans, J. Kim)
10:05AM	062163	Performance of a Continuous Move Irrigation Control and Monitoring System , Jose Luis Chavez, Washington State Univ, Prosser, WA (J. L. Chavez, F.J. Pierce, G. Matthews, T.V. Elliott, R. Evans, J. Kim)

10:20AM	062164	Evaluation of Wireless Control for Variable Rate Irrigation , Yunseop Kim, USDA-ARS, Sidney, MT(Y. Kim, R. Evans, W. Iversen, F. Pierce)
10:35AM	062165	Solar-Powered, Wirelessly-Networked Valves for Site-Specific Irrigation , Robert W. Coates, University of California, Davis, Davis, CA(R.W. Coates, M.J. Delwiche)
10:50AM		Break
11:00AM	062166	Controlling Variable Rate Irrigation with a Wireless Smart Sensor Array , Michael A. Tucker, Ocilla, GA(M. Tucker, S. Utley, S. Pocknee, C. Perry, G. Vellidis)
11:15AM	062167	Case Study: Start-Up of a Secondary Water Supply Company and First Phase Design of a Regional System , Amy L. Johnson, Aqua Engineering, Johnstown, CO (A.L. Johnson, St. W. Smith)
11:30AM	062168	Performance and Water Conservation Potential of Multi-Stream, Multi-Trajectory Rotating Sprinklers for Landscape Irrigation , Kenneth H. Solomon, Morro Bay, CA (K.H. Solomon, J.A. Kissinger, F.P. Farrens, J. Borneman)
11:45AM	062169	CANCELLED

209-SW-09 DECOMMISSIONING OR REHABILITATION OF SMALL DAMS (Sponsored by SW-25)

Moderator: Scott Mueller, Natural Resources Conservation Service, Madison, WI
Location: B115

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	062170	Breach Analysis of PL566 Dams in NY , Peter E. Wright, NRCs, Syracuse, NY(C. Henry, C. Giaquinto, P. Wright)
9:55AM	062171	Physical Model Study of a Proposed Converging Rec Stepped Spillway , Kem C. Kadavy, USDAARS, Stillwater, OK (K. Kadavy, S. Hunt)
10:05AM	062172	The Evaluation and Repair of an NRCs Assisted Dam Constructed on a Collapsible Foundation , Dean W. Santistevan, US DANRCS, Edinburg, TX (B. Wenberg, D. Santistevan)
10:30AM	062173	Dam Rehabilitation Program Wisconsin Experience , Scott Mueller, Natural Resources Conservation Service, Madison, WI (S. Mueller)
10:35AM		Break
10:45AM	062174	Model and monitored estimates of Fort Hood sediment loadings in Cowhouse Creek , Wesley Rosenthal, Texas Agr Exp Station, Temple, TX (W. D. Rosenthal, D. Hoffman, W. Fox)
11:00AM	062175	Vegetative Filter Education and Assessment in the State of Iowa , Manveen Bansal, Iowa State Univ, Ames, IA (M. Bansal, S. Mickelson, Helmers, K. Arora)

9:20AM	064089	Imperial Straw Bale House , Vickie Doyle, Imperial Irrigation District, Imperial, CA(V. Doyle)
10:05AM	064090	Shear Strength of Diaphragms Predicted from Test Results , Gary A. Anderson, South Dakota State Univ, Brookings, SD (G.A. Anderson)
10:20AM	064091	Post-Frame Buildings in the Pacific Northwest , Daniel L. Wambeke, Scafco Corp, Spokane, WA (D. Wambeke)

Tuesday, July 11 – 9:30AM-12:00PM

212-SE-19 CONTROLLING THE ENVIRONMENT IN THE GREENHOUSE (Sponsored by SE-406, SE-303)

Moderator: Joey H. Norikane, Univ of Kentucky, Lexington, KY
Location: C121

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	064092	Numerical Considerations and Benchmark Problems for CFD Modeling of Greenhouse Ventilation Rates , Pedro Romero-Gomez, The University of Arizona, Tucson, AZ (P. Romero-Gomez, C. Choi, I. Lopez-Cruz, G. Giacomelli)
9:50AM	064093	Determining Pressure Coefficients for Natural Ventilation Purposes by Computational Fluid Dynamics Modeling , Michael F. Brugger, Ohio State Univ, Wooster, OH (T. LaFrance, M. Brugger)
10:05AM	064094	Using CFD to Model Greenhouse Floor Heating Systems , Eugene E. Reiss, Rutgers Univ., NJ (E. Reiss, D.R. Mears, A.J. Both)
10:20AM	064095	Air Exchange Rates in a Naturally Ventilated Greenhouse Using Different Vent Configurations , Daniel H. Willits, North Carolina State Univ, Raleigh, NC (D.H. Willits, C.A. Yunker and S. Li)
10:35AM		Break
10:45AM	064096	Study of Efficient Lighting Periods Based on Plant Stoma Reaction , Kazuhiko Namba, Okayama Univ Library, Okayama, Japan (K. Namba, N. Kondo, M. Monta, A. Sasao)
11:00AM	064097	Target Irradiance Criteria for Supplementary Lighting Systems in Greenhouses , Daniel E. Ciolkosz, University of Kwazulu-Natal School of BEEH, Scottsville, South Africa (D.E. Ciolkosz)
11:15AM	064098	Internet Connected Digital Control and Data Acquisition System for Greenhouse Applications , Wendell A. Porter, Univ of Florida, Gainesville, FL (W.A. Porter, S.M. Hansen)
11:30AM	064099	Ambient Ozone Concentrations Measured in Floricultural Greenhouses , S Edward Law, Univ of Georgia, Athens, GA (S.E. Law, H.Y. Wezstein)
11:45AM	064203	Study of Crossbow Wireless Data Acquisition and Control for Greenhouse Operations , John Suh, Crossbow Technology, Inc., San Jose, CA

INFORMATION & ELECTRICAL TECHNOLOGIES

Tuesday, July 11 – 9:30AM-12:00PM

210-IET ELECTROMAGNETICS AND SPECTROSCOPY

(Sponsored by IET-21)

Moderator: Chi Ngoc Thai, Univ of Georgia, Athens, GA
Location: Exhibit Hall A

POSTER #	PAPER #	PRESENTATION TITLE
1	063043	Ultraviolet Absorption Spectra for Biodiesel Quality Sensing , Artur K. Zawadzki, Univ of Idaho, Moscow, ID (A. Zawadzki, D. Shrestha)
2	063044	Effect of Test Cell Loading Method for Unified Grain Moisture Algorithm , David B. Funk, US D A GIP SATSD, Kansas City, MO (Z. Gillay, P. Hartyani, D. Funk, J. Kennedy)3 063045 Dielectric Spectroscopy of Hard Red Winter Wheat , Stuart O. Nelson, US DAARS, Athens, GA (S.O. Nelson, S. Trabelsi)
4	063046	Microwave Treatment Accelerates Solar Timber Drying , Graham Brodie, Univ of Melbourne, PO Dookie, Australia (G. Brodie)
5	063047	Ethanol Yield of Corn Hybrids in Dry-Grind Corn Processing using Fourier-Transform Near Infrared Spectroscopy , Marvin R. Paulsen, Univ of Illinois, Urbana, IL (S. Rathore, M. Paulsen, V. Singh, and J. Graeber)
6	063048	The Effect of Particle Size on Sensing Phosphorus by Raman Spectroscopy , Won Suk (Daniel) Lee, Univ of Florida, Gainesville, FL (I. Bogrekc, W.S. Lee)
7	063049	Near-infrared Spectroscopy for On-line Real-time Monitoring of Milk Quality: Spectrum Analysis by Principal Component Analysis , Masataka Kawasaki, Hokkaido Univ, Sapporo, Hokkaido Japan (M. Kawasaki, S. Kawamura, H. Nakatsuji, M. Natsuga)
8	063050	Feasibility on the Quality Evaluation of Agricultural Products with Terahertz Electromagnetic Wave , On Yuichi Ogawa, Tohoku Univ. Terahertz Bioengineering Laboratory, Sendai, Miyagi, Japan (Yuichi Ogawa, Shin'ichiro Hayashi, Naoshi Kondo, Kazunori Ninomiya, Chiko Otani and Kodo Kawase)
9	063051	Detection of Feces / Ingesta Contaminants for Sanitation Verification at Slaughter Plants , Kuanglin Chao, US DAARS ISL, Beltsville, MD (K. Chao, Y. Liu, Y.R. Chen, M.S. Kim)
10	063052	Exploratory Spectral Analysis Using Genetic Algorithms , Chi Ngoc Thai, Univ of Georgia, Athens, GA (S. T. Jones, C. N. Thai, B. Park, K. C. Lawrence, W. R. Windham)
11	063091	Monitoring Sediment Concentration at a Low-Water Stream Crossing Using an Optical Sediment Sensor , Yali Zhang, Kansas State University, Manhattan, KS (Y. Zhang; N. Zhang; D. Oard; J. Steichen; P. Woodford; P. Barnes; S. Hutchinson)
12	063100	Automatic Individual Precision Feeding Systems for Dairy Cows: Observations and Simulation of Facility Usage , Hanneke Pompe, Wageningen University, Wageningen, Netherlands
13	063016	Development of System for Distinction of Disease Plant , Kentaro Matsuo, Nat Ag Res Ctr for Tohoku, Morioka, Iwate, Japan (K. Matsuo, K. Nisiwaki, S. Zhang)

STRUCTURES & ENVIRONMENT

Tuesday, July 11 – 9:30AM-12:00PM

211-SE-3 SUSTAINABLE BUILDING TECHNOLOGY (Sponsored by SE-20)

Moderator: Gary A. Anderson, South Dakota State Univ, Brookings, SD
Location: C120

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	064088	Appropriate Elevated Flooring Systems for Hot-Humid Climate Regions , Wendell A. Porter, Univ of Florida, Gainesville, FL (W.A. Porter, S.M. Hansen)

Tuesday, July 11 – 9:30AM-12:00PM

213-SE-9A AIR QUALITY MODELING - PART 1 (Sponsored by SE-305)

Moderator: Bryan W. Shaw, Texas A&M Univ, College Station, TX
Location: C122

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	064100	Evaluation of the Box Model for Emission Factor Development , Lee Barry Goodrich, Texas A&M University, College Station, TX (B. Shaw, C. Parnell, S. Capareda, S. Mukhtar)
9:50AM	064101	A Review of Emission Models of Ammonia Released from Animal Feeding Operations , Zifei Liu, North Carolina State University, Raleigh, NC (Z. Liu, L. Wang, D. Beasley)
10:05AM	064102	Comparison of Odour Dispersion Predictions between CFD Model and CALPUFF Model , Yongxin Li, University of Saskatchewan, Saskatoon, Canada (Y. Li, H. Guo)
10:20AM	064103	Estimating Seasonal Ammonia Downwind Concentrations from Open-lot Dairy in Central Texas , Atilla Mutlu, Texas A&M Univ, College Station, TX (A. Mutlu, S. Mukhtar, B.W. Shaw, S. Capareda, R. E. Lacey, C.B. Parnell)
10:35AM		Break
10:45AM	064105	Statistical Modeling of Ammonia Emissions from Poultry Layer Facilities , Xinying Wang, Ohio State University, Columbus, OH (X. Wang, L.Y. Zhao, C. Wang, A.J. Heber, J.-Q. Ni, T.T. Lim, and P.C. Tao.)
11:00AM	064106	Process Based Model for Ammonia Emissions from Manure Storage Structures and Anaerobic Treatment Lagoons , Jactone Arogo, Virginia Polytechnic Inst & State Univ, Blacksburg, VA (J. Arogo-Ogejo, R.H. Zhang, T. Rumsey, H. Xin)
11:15AM	064107	Modeling Ammonia Emissions from Urine Puddles , Erin L. Cortus, Univ of Saskatchewan, Saskatoon, SK Canada (Erin L. Cortus, Stephane P. Lemay, Ernie M. Barber, Stephane Godbout)

Tuesday, July 11 – 9:30AM-12:00PM

214-SE-21A AGRICULTURAL WASTE MANAGEMENT- MINI SYMPOSIUM - PART 1 (Sponsored by SE-412, SW-263, FPE-707)

Moderator: John J. Classen, North Carolina State Univ, Raleigh, NC
Location: C123

TIME	PAPER #	PRESENTATION TITLE
7:55AM		Introduction
8:00AM	064108	Evaluation of a Phosphorus Crystallizer to Treat Potato Processing Wastewater , Ronald E. Sheffield, Univ of Idaho, Twin Falls, ID
8:30AM	064109	Automated Magnesium Injection System for Optimized Struvite Precipitation in Swine Manure Slurries , Timothy A. Shepherd, Iowa State Univ, Ames, IA
9:00AM	064110	Ammonia Recovery from Swine Belt Separated Liquid , Sarah K. Liehr, North Carolina State Univ, Raleigh, NC
9:30AM	064111	Reducing Emissions from Liquid Manure Storage Facilities with Saccharose – individually and combined with Cover Materials , Werner Berg, Institute of Agricultural Engineering Bornim (ATB), Potsdam Brandenburg, Germany
10:00AM		Break
10:30AM	064112	Recommendation for Anaerobic Lagoon Design Based on Surface Organic Matter Loading Rate and a Complex Sludge Accumulation Model , Douglas W. Hamilton, Oklahoma State Univ, Stillwater, OK
11:00AM	064113	The Leakage Rate of Liquid Animal Waste , John S. Tyner, Univ of Tennessee, Knoxville, TN
11:30AM	064114	Estimation of Sludge Accumulation in Lagoons , John P. Chastain, Clemson Univ, Clemson, SC

Tuesday, July 11 – 9:30AM-12:00PM

215-SE-INV CASE STUDIES IN VENTILATION SYSTEMS

(Sponsored by SE-302)

Moderator: Angela Green, Iowa State Univ, Ames, IA
Location: C125

9:30AM

Introduction
SKOV, Kark Krogshede, Hedelund, Denmark
ChoreTime, Tim Taylor
Big Dutchman, Dennis Kamstra

ERGONOMICS, SAFETY & HEALTH

Tuesday, July 11 – 9:30AM-12:00PM

216-ESH-1 ADVANCES IN SAFETY TECHNOLOGY (Sponsored by ESH-04)

Moderator: James L. Glancey, Univ of Delaware, Newark, DE
Location: B119

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	065011	An Approach to Evaluate Potential Mismatches between Children Anthropometric Characteristics and Tractor Operational Requirements , Ji Hong Chang, Univ of California, Davis, CA (J.H. Chang, F.A. Fathallah, B. Marlena, W. Pickett, J.L. Plasse, B.J. Miller, J.M. Meyers, J.A. Miles)
9:50AM	065012	A Reinforced Polymer Hammer Cap for Eliminating Metal-to-Metal Contact and Reducing Hand-Transmitted Vibration , James L. Glancey, Univ of Delaware, Newark, DE (M. Griffith, J. Nasr, P. Popper, J. Glancey)
10:05AM	065013	Development of an Approach for Assessing the Effects of Stooped Agricultural Work on the Lower Back Spinal Issues , Brandon J. Miller, Univ of California, Davis, CA (B.J. Miller, F.A. Fathallah, J.A. Miles)
10:20AM		Break
10:30AM	065014	Development of an Ergonomic Solution for Agricultural Weeding Practice , Amjad A. Ramahi, Univ of California Davis, Sacramento, CA (A.A. Ramahi, F.A. Fathallah, J.A. Miles)
10:45AM	065015	Ergonomic Evaluation of Tractor Cabs , Bryan J. Smith, Univ of Nebraska, Lincoln, NE (B. Smith, B. Campbell, D. Cochran)

FOOD & PROCESS ENGINEERING INSTITUTE

Tuesday, July 11 – 9:30AM-12:00PM

217-FPE-4 PHYSICAL PROPERTIES OF BIOBASED PRODUCTS

(Sponsored by FPE-701, FPE-703, FPE-709, BE-28)

Moderator: Kasiviswanathan Muthukumarappan, South Dakota State Univ, Sioux Falls, SD
Location: A109

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	066074	Chicken Egg Texture Index of Combinatorial Impact Parameters , Ming-Hsien Yen, National Chung-Hsing Univ, Taichung, Taiwan (M. Yen, Y. Wan, S. Chen, Y. Lee)
9:50AM	066075	Effect of Die Dimensions on Extruder Performance and Extrudate Properties for Distillers Grains-Based Feeds , Nehru Chevanan, South Dakota State Univ, Brookings, SD (N. Chevanan, K. Muthukumarappan, K.A. Rosentrater, J.L. Julson)
10:05AM	066076	Effect of Flow Agent Addition on the Physical Properties of DDGS with Varying Solubles Percentages , Vy kundeshwari Ganesan, South Dakota State Univ, Brookings, SD (G. Vy kundeshwari, K. Muthukumarappan, K. Rosentrater)
10:20AM	066077	Factors Affecting Strength and Durability of Densified Products , Nalladurai Kaliyan, Univ of Minnesota, St Paul, MN (N. Kaliyan, R.V. Morey)
10:35AM		Break
10:45AM	066078	Leaf Area Meter Development using Photovoltaic Panel and Testing , Igathinathane Cannayen, Univ of Tennessee, Knoxville, TN (C. Igathinathane, K. Manohar, B. Chennakesavulu, A.R. Womac, L.O. Poradesimo)
11:00AM	066079	Watersorption Isotherms and Thermodynamic Properties of Hydrogels Dried at Different Drying Methods , Timothy D. Durance, University of British Columbia, Vancouver, BC Canada (S. Jaya, T.D. Durance)
11:15AM	066080	Effect of Cutter Speed on the Quality Characteristics of Legume Extrudates , Ramabhau Tumadu Patil, ICAR-India, Bhopal, India (R.T. Patil, J. De J. Berrios, J. Tang, B.G. Swanson, J. Pan)
11:30AM	066081	Effect of Screw Speed and Feed Moisture on the Residence Time Distribution of Legume Formulation in a Twin Screw Extruder , Ramabhau Tumadu Patil, ICAR-India, Bhopal, India (R.T. Patil, J. De J. Berrios, J. Tang, B.G. Swanson, J. Pan)

Tuesday, July 11 – 9:30AM-12:00PM

218-FPE-7 POSTHARVEST ORGANIC OR NON-CHEMICAL QUALITY CONTROL OF CROPS AND FEEDS (Sponsored by FPE-702)

Moderator: Michael D. Montross, Univ of Kentucky, Lexington, KY
Location: A108

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	066082	Grain Residuals and Time Requirements for Combine Cleaning , H Mark Hanna, Iowa State Univ, Ames, IA (H.M. Hanna, D. H. Jarboe, G.R. Quick)
9:50AM	066083	Non Destructive Quality Control of Rice by Image Analysis , Satish Bal, Indian Institute of Tech, West Bengal, India (P.A. Kumar, S. Bal)
10:05AM	066084	Ozonation: A Non-chemical Alternative for Control of Stored Product Pests and Molds in Organic Food Grains , Rajshekhar B. Hulasare, Purdue Univ, West Lafayette, IN (R. Hulasare, B. Qian, D.E. Maier, C.P. Woloshuk, L. Mason)
10:20AM	066085	Modeling Airflow in Outdoor Grain Pile Aeration Systems Using Computational Fluid Dynamics Software , Dirk E. Maier, Purdue Univ, West Lafayette, IN (D.E. Maier, S. Khandelwal, J. Lawrence)
10:35AM	066086	Physical Exclusion Tactics for Control of Pests in Stored Organic Food and Feed Grains , Rajshekhar B. Hulasare, Purdue Univ, West Lafayette, IN (R. Hulasare, D.E. Maier)
10:50AM		Break

11:00AM	066087	Simultaneous Rough Rice Drying and Disinfections with Infrared Radiation , Kagab K. Abd El-Kader, Univ of California, Davis, CA (Z. Pan, R. Khir, R. Lewis, L. Godfrey, A. Salim, J. Thompson)
11:15AM	066088	New methods for UV Treatment of Milk for Improved Food Safety and Product Quality , Douglas J. Reinemann, Univ of Wisconsin, Madison, WI (T. Cilliers, K. Houck, R. Bishop)
11:30AM	066089	Modeling the Cooling of Potatoes in Cold Storage under Variable Storage Air Temperature using the CFD , Tridib Kumar Goswami, I.I.T. Kharagpur, Kharagpur, India (M. K. Chourasia, T.K. Goswami)
11:45AM	066090	Isolation of Starch and Protein from Chickpea Flour Using a Hydrocyclone and Isoelectric Precipitation Method , Lope G. Tabil, Jr, Univ of Saskatchewan, Saskatoon, SK Canada (S. Emami, L.G. Tabil, R.T. Tyler)

Tuesday, July 11 – 9:30AM-12:00PM

219-FPE-9 EMERGING TECHNOLOGIES IN FOOD PROCESSING

(Sponsored by FPE-703)

Moderator: Michael O. Ngadi, McGill Univ, Ste-Anne-de-Bellevue, QC Canada and Wade W. Yang, Alabama A&M Univ, Normal AL
Location: A107

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	066091	Application of Computer Vision and Chemical Marker M-2 Yield for Evaluating the Sterilization Process in Food Industry , Ram B. Pandit, Washington State Univ, Pullman, WA (R.B. Pandit, J. Tang, L. Frank, G. Mikhlyenko)
9:50AM	066092	Study of Strawberry Dehydration using Sequential Infrared Radiation and Freeze-Drying , Connie Shih, Univ of California, Davis, CA (C. Shih, Z. Pan, T. McHugh, E. Hirschberg)
10:05AM	066093	Modeling of Textural Changes in Beef Loins Subjected to Hydrodynamic Pressure Treatment , Anand Lakshminanth, Virginia Tech, Blacksburg, VA (A. Lakshminanth, G. Moxley, P. Mallikarjunan, J. Patel, M.B. Solomon)
10:20AM	066094	Smart Active Labels as a Tool for Improved Shelf Life Prediction Along the Postharvest Chain of Fresh Produce , Oliver K. Schuter, Leibniz-Inst for Agric Engineering Potsdam, Potsdam, Brandenburg, Germany – Martin Geyer (O. Schlüter, M. Linke, K. Butenuth, W.B. Herppich, M. Geyer)
10:35AM	066095	In situ Food Microstructure Evaluation Using Confocal Microscopy , Sundaram Gunasekaran, Univ of Wisconsin, Madison, WI (S. Ko, S. Gunasekaran)
10:50AM		Break
11:00AM	066096	Thermal Responses of Pulsed UV Flashes in Transparent, Translucent and Opaque Materials , Wade W. Yang, Alabama A&M Univ, Normal, AL (J.C. Anderson, W. Yang, N. Gunasekaran)
11:15AM	066097	Walk-through Weighing of Pigs by Machine Vision and Neural Networks , Wade W. Yang, Alabama A&M Univ, Normal, AL (Y. Wang, W. Yang, P. Winter, . Walker)
11:30AM	066098	Temperature Assured Refrigeration of Food Products , Amit Arora, Indian Institute of Technology, Kharagpur, India (A. Arora, S. Bal)
11:45AM	066099	Drying of Edamames by Hot Air and Vacuum Microwave Combination , Min Zhang, Southern Yangtze Univ, Jiangsu Province, Peoples Republic of China (M. Zhang, Q.-G. Hu, L.-P. Fan, L. Shan)

Tuesday, July 11 – 9:30AM-12:00PM

220-FPE-INV BIOREFINERIES BARRIERS TO DEVELOPMENT

(Sponsored by FPE-709, BE-28)

Moderator: Alvin Ray Womac, Univ of Tennessee, Louisville, TN
Location: A106

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	066235	Engineering Requirements Leading to Investment Grade EPC Contract Selection , Mark Dassel, Harris Group, Inc., Seattle, WA (M. Dassel)
10:05AM		Feeding the biorefinery: Feedstock Specifications at the Interface of the Dirty End and the White Coat Process , James H. Dooley, Forest Concepts, Federal Way, WA (J. Dooley)
10:35AM		DOE Perspective of Biorefinery Barriers , Todd Werpy, National Corn Growers Assn, St Louis, MO (T. Werpy)
11:05AM		Engineering Opportunities for Biorefineries , Michael Landisch, Purdue University Dept. of Biomedical Engineering, West Lafayette, IN (M. Landisch)
11:35AM		Discussion

BIOLOGICAL ENGINEERING

Tuesday, July 11 – 9:30AM-12:00PM

221-BE-4 ECOSYSTEM SERVICES: TMDL'S, HABITATS AND BEYOND (Sponsored by BE-22, SW-265)

Moderator: Kyle R. Mankin, Kansas State Univ, Manhattan, KS

TIME	PAPER #	PRESENTATION TITLE	Location
9:30AM		Introduction	
9:35AM	067033	Can We Use TMDLs to Clean Water and Restore Environmental Services in Managed Agricultural Ecosystems? , Kyle R. Mankin, Kansas State Univ, Manhattan, KS (K.R. Mankin, W.L. Hargrove)	
9:50AM	067034	Fish Passage Through Road Culverts , Angela N. Gardner, North Carolina State Univ, Raleigh, NC (A. Gardner)	
10:05AM	067035	North River: Case Study of a Category 4 TMDL - "Impaired, but TMDL Not Needed" , Eugene R. Yagow, Virginia Tech, Roanoke, VA (G. Yagow, R. Brent)	
10:20AM		Break	
10:30AM	067036	Robeson Creek: Implementing BMPs in a TMDL Watershed through Stakeholder Involvement , Karen R. Hall, North Carolina State Univ, Raleigh, NC (K.R. Hall, L. Szpir, D. Line, B. Doll)	
10:45AM	067038	Modified Field Techniques for Geomorphic Stream Assessment in TMDL Research , Princesa V. Vanburen, Univ of Minnesota, St Paul, MN – Presenter: Bruce N. Wilson (P.V. Vanburen, B.J. Hansen, B.N. Wilson, T.L. Zearley, J. Magner, U.B. Singh)	

Tuesday, July 11 – 9:30AM-12:00PM

222-BE-7 BIOLOGICAL AND ECOLOGICAL MODELING

(Sponsored by BE-26, IET-210)

Moderator: Gregory A. Kiker, Univ of Florida, Gainesville, FL

Location: B118

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	067039	Ecological Systems Analysis: The Modeling Problem , David K. Gattie, Univ of Georgia, Athens, GA(D.K. Gattie)
9:50AM	067040	Modeling Complex Agro-Ecosystems of South Florida , Vibhuti Pandey, Univ of Florida, Gainesville, FL(V. Pandey, G.A. Kiker)
10:05AM	067041	Using a Range-Livestock Model to Estimate Maximum Cow-Calf Stocking Rates on a Mixed-Grass Prairie , Allan A. Andales, USDAARS, Fort Collins, CO (A.A. Andales, L.R. Ahuja)
10:20AM	067042	Modeling Growth and Wave Attenuation for Coastal Restoration , Steven G. Hall, P.E., Louisiana State Univ, Baton Rouge, LA(S. Hall, M. Campbell, G. Stone, J. Supan)
10:35AM	067043	A Scenario-Based, Decision Support System for Integrating Food Security and Ecosystem Management in Jamaica , Lauren Justice, University of Florida Agricultural and Biological Engineering, Gainesville, FL – Presenter: Gregory Kiker (L. Justice, G Kiker, M. Kiker, A. Mosier, J.W. Jones)
10:50AM	067044	Development and Validation of Models Describing Compost Decomposition Upon Amendment to Soil and Associated Phytotoxicity , Danielle N. McEachin, Univ of California, Davis, CA(D. N McEachin, J.S VanderGheynst)
11:05AM		Break
11:15AM	067045	Physical Stability and Survival of Microorganisms Stored in Water-in-Oil Emulsion , Jean S. VanderGheynst, Univ of California Davis, Davis, CA(J. VanderGheynst, H. Scher)
11:30AM	067046	Biomechanics of Manual Sugar Cane Harvesting , Clairmont L. Clementson, , Champaign, IL(C. Clementson, A. Hansen)
11:45AM	067048	Plant Electromagnetic Energy Growth Theory , Arthur D. Ramthun, USDA/ NRCS, Torrington, CT
12:00PM	067049	The Effect of Light Quality on the Growing Characteristics of in Vitro Cultures of Phalaenopsis , Chia Chung G Chen, Wu-teng Taichung, Taiwan (C. Chen)
12:15PM	067050	Detection of Environmental Stress of Plant by Three Temperatures Model , Guo Y. Qiu, Beijing Normal University College of Resources Science and Tech., Beijing, Peoples Republic of China (G.Y. Qiu, P.Shi)

Tuesday, July 11 – 9:30AM-12:00PM

223-BE-3 STANDARDS ROUNDTABLE DISCUSSION

Moderator: R Heather Jaffan, Systems Sciences Inc, Fairfax, VA

Location: B116

9:30AM		Introduction
		The BE Roundtable Discussion is an open forum to solicit inputs from the Division BE Members as well as invited guests who are vital to biotechnology engineering. The roundtable discussion will define past, present and future direction for the BE Division. In addition, the Roundtable Discussion is aimed at generating BE standards ideas and providing a pragmatic paradigm and step by step instructions to formulate BE Standards. It is a must-attend Session and an opportunity to work with ASABE Leaders and Staff.

EDUCATION

Tuesday, July 11 – 9:30AM-12:00PM

224-ED-1C INNOVATIONS IN EDUCATION PART 3 (Sponsored by EDUC)

Moderator: Thomas J. Brumm, Iowa State Univ, Ames, IA

Location: C125

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	068029	Basic Topics Education Applied to AgroForestry Area (2005) , Jesus Garcia Garcia, Universidad Politecnica de Madrid, Madrid, Spain (E.A. Téllez; J. García García; C. González García, R. Argüelles Bustillo; S. Martín Fernández, T.L. Fernández)
9:50AM	068030	Design of Electrohydraulic Experimentation Systems for Undergraduate Education , Scott A. Dixon, Univ of Illinois, Tiskilwa, IL(S. Dixon, Q. Zhang)
10:05AM		Break
10:15AM	068031	Developing Active Learning Activities for Introductory Java Programming Course , Chi Ngoc Thai, Univ of Georgia, Athens, GA(C. N. Thai)
10:30AM	068032	Development and Testing of a Variable Rate Sprayer for Use in University and Extension Education Programs , Donald M. Johnson, Univ of Arkansas, Fayetteville, AR (A.R. Dickinson, D.M. Johnson, G.W. Wardlow)
10:45AM	068033	Introducing Undergraduate Students to Finite Element Analysis , Natalie J. Carroll, Purdue Univ, West Lafayette, IN

Tuesday, July 11 – 9:30AM-12:00PM

226-ED-O-1 EXTENSION METHODS FOR ENVIRONMENTAL QUALITY (Sponsored by P-208)

Moderator: William F. Hunt, III, North Carolina State Univ, Raleigh, NC

Location: C126

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	068034	Regional Watershed Academies in the Southeastern USA , Gregory D. Jennings, North Carolina State Univ, Raleigh, NC (G. Jennings, B. Hunt, E. Brantley, C. Sawyer, D. Borden, D. Hitchcock, J. Calabria, R. English, D. Penrose)
9:50AM	068035	Certification Training for Erosion and Sediment Control on DOT Projects , Gregory D. Jennings, North Carolina State Univ, Raleigh, NC (G. Jennings, D. Clinton, R. McLaughlin, J. Patterson, T. Sherrod)
10:05AM	068036	Strengthening Watershed Management in Indiana , Jane Frankenberger, Purdue Univ, West Lafayette, IN (J. Frankenberger, B. Ladd, S. Broussard)
10:20AM		Break
10:30AM	068037	Watershed Management Research, Education, and Outreach Program: the Center for TMDL and Watershed Studies at Virginia Tech , Brian L. Benham, Virginia Tech, Blacksburg, VA (B. Benham)
10:45AM	068038	Extension Stormwater Programs for Urban & Suburban Audiences , William F. Hunt, III, North Carolina State Univ, Raleigh, NC (W.F. Hunt)

11:00AM 068059 **Sensors and Samplers for Irrigation Water Quality and Quantity**, Rachel A. Lipsey, Univ of Arkansas, Little Rock, AR – Presenter: Phil Tacker (R. Lipsey, W. Smith, P. Tacker)

POWER & MACHINERY

Tuesday, July 11 – 2:30PM-5:00PM

227-PM POWER & MACHINERY DIVISION POSTER SESSION

(Sponsored by PM)

Moderator: Heping Zhu, USDAARS-Application Tech Res Unit, Wooster, OH

Location: Exhibit Hall A

Recent Advances in Pesticide Application Technology (PM)

POSTER #	PAPER #	PRESENTATION TITLE
1	061110	Use of LIDAR to Confirm Spray Drift Sampling Techniques , Wesley Clint Hoffmann, USDAARS, College Station, TX (W.C. Hoffmann, D.R. Miller, B.K. Fritz, A.L. Hiscoc)
2	061111	Spray Characteristics and Wind Tunnel Evaluation of Drift Reduction Potential with Air Induction and Conventional Flat Fan Nozzle , Huseyin Guler, Ohio State Univ, Wooster, OH (H. Guler; H. Zhu; E. Ozkan; R. Derksen, C. Krause)
3	061112	Comparison of Drift Potential and Coverage of Traditional vs Modified and New Technology Orchard Sprayers , Nagarajan Ramalingam, Mid-Columbia Agr Res & Experiment Cntr, Hood River, OR (N. Ramalingam, P.I.C. Jepson)
4	061113	Optical Cues in Forest Insect Host Homing: An Overview , Harold W. Thistle, USDA FS, Morgantown, WV (H.W. Thistle, B. Strom)
5	061114	Evaluation of Tracer (spinosa) for Control of Thrips in Cotton Using Various Aerial Nozzle Technologies , Daniel E. Martin, USDAARS, College Station, TX (D. E. Martin, J. D. Lopez)
6	061115	Field Evaluation Of Application Variables For Bell Pepper Pest Management , Richard C. Derksen, USDAARS, Wooster, OH (R. Derksen, C. Welty, S. Vitanza, S. Miller, M. Bennett, H. Zhu)
7	061116	Increased Abaxial Deposition and Biological Efficacy of Electrostatically Charged Sprays , Devanand Maski, Kansas State University, Manhattan, KS (D. Maski)
8	061117	Meteorological Effects on Transport and Fate of Agricultural Sprays , Bradley K. Fritz, USDAARS, College Station, TX (B. K Fritz)
9	061118	Real-time Application of Herbicides in Seed Lines by Computer-Vision and Micro-Spray System , Ivar Lund, Daniel Institute of Agricultural Engineering, Horsens, Denmark – Presenter: Heping Zhu (I. Lund, H.T. Søgaard)
11	061120	Spray Application Volume Test in Apple and Pear Orchards in Catalonia (Spain) and Variable Rate Technology for Close Adjustment , Alexandre Escola, Generalitat de Catalunya, Llieda, Spain (A. Escola, F. Camp, F. Solanelles, F. Gracia, S. Planas, J.R. Rosell, E. Gil, L. Val)
12	061121	Adjustment of the Dose Distributed to the Size of the Tree in Different Citrus Varieties , Luis Val, Universidad Politecnica de Valencia, Valencia, Spain (E. Orti, L. Val)
13	061205	Agricultural Tractor Classification According to their Energy Efficiency , Victor Gil-Quiros, Universidad Politecnica de Madrid Departamento de Ingenieria Rural, Madrid, Spain (J. Gil-Sierra, J. Ortiz-Canavate, J. Casanova, V. Gil-Quiros)
14	061054	Repeatability of Soil Apparent Electrical Conductivity Measured by the Veris 3100 Sensor , Jay D. Jabro, USDAARS, Sidney, MT (J.D. Jabro, R.G. Evans, W.B. Stevens, W.N. Iversen)
15	061206	An Automatic Seeding System Using Machine Vision for Seed Line-up of Cucurbitaceous Vegetables , Dong-Eok Kim, Nat'l Institute of Agricultural Engineering, Suwon, Gyeonggi-do, South Korea (D-E Kim)

SOIL & WATER

Tuesday, July 11 – 2:30PM-5:00PM

228-SW-10 FOREST AND WETLAND HYDROLOGY AND ECOSYSTEMS (Sponsored by SW-21)

Moderator: Michael R. Burchell, II, North Carolina State Univ, Raleigh, NC

Location: A103

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062176	Analysis and Modeling of Groundwater Hydrology of a Drained Carolina Bay Wetland Restoration , Swamy Pati, North Carolina State Univ, Raleigh, NC – Presenter: Rodney Huffman (S. Pati, R.L. Huffman, M.J. Vepraskas, Late J.E. Parsons, R.W. Skaggs)
2:50PM	062177	If You Build It, Will They Come? Restored Streams and Benthic Insects , Dave Penrose, North Carolina State University, Raleigh, NC (D. Penrose, D.n Clinton, D. Tullos)
3:05PM	062178	Process Transfer Functions to Relate Stream Ecological Condition Metrics to Nitrate Retention , Barton R. Faulkner, U.S. Environmental Protection Agency, Ada, OK (B.R. Faulkner)
3:20PM	062179	Effects of DEM Resolution on WEPP Hydrologic and Erosion Prediction: a Case Study of Two Forest Watersheds in Northern Idaho , Jane X. Zhang, Washington State University, Pullman, WA (J.X. Zhang, J.Q. Wu, W.J. Elliot, S. Dun, K.-T. Chang)
3:35PM	062180	Evaluating the Effects of Thinning on Hydraulic Properties of an Organic Soil , Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Auburn, AL (J. McFero Grace III, R. W. Skaggs)
3:50PM		Break
4:00PM	062181	Forest Harvesting Effect on Hydrology and Water Quality of Small Headwater Streams in Southwestern Georgia , Masato Miwa, International Paper, Bainbridge, GA (M. Miwa, W.B. Summer, S.B. Terrell, D.G. Jones, R.T. and M.K. Bell)
4:15 PM	062182	Hydrology & Water Quality of Two First Order Forested Watersheds in Coastal South Carolina , Devendra Man Amata, USDA Forest Service, Charleston, SC (D. Amata; M. Miwa; A. Harrison; C. Trettin; G. Sun)
4:30PM	062183	The Effect of Harvesting on Hydrology and Water Quality of a Forested Organic Soil Watershed , Johnny M. Grace, III, U.S. Forest Service, Southern Research Station, Auburn, AL (J. McFero Grace II, R. W. Skaggs)
4:45PM	062184	Spatial Analysis of Compliance, Application, and Effectiveness of Forestry Best Management Practices in West Virginia , Jingxin Wang, West Virginia University Division of Forestry, Morgantown, WV – Presenter: Tony Goff (J. Wang, T. Goff)

5:00PM 062350 **Nitrate removal of Riparian Buffers Established through the NC Conservation Reserve Enhancement Program**, Michael R. Burchell, II, North Carolina State Univ, Raleigh, NC (M.R. Burchell, D. Hyatt, D. Line, R. Evans, G. Grabow, W. Gilliam, D. Osmond)

Tuesday, July 11 – 2:30PM-5:00PM

229-SW-11 SOILEROSION RESEARCH (Sponsored by SW-22)

Moderator: Niels G. Svendsen, US Army Corps of Engineers, Champaign, IL
Location: A104

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062185	Application of Gypsum and Polyacrylamide to Combat Soil Erosion , Tahei Yamamoto, Tottori Univ, Tottori, Japan (T. Yamamoto, Y. Shimura, T. Nishimura, S. Moritani, R. Andry, V. Rasiah)
2:50PM	062186	Impact of Watershed Development for the Fall River Watershed , Philip L. Barnes, Kansas State Univ, Manhattan, KS (P.L. Barnes)
3:05PM	062187	Impact of Sugarcane Mulch Management Strategies on Soil Erosion and Crop Yield , Richard L. Bengtson, Louisiana State Univ, Baton Rouge, LA (R.L. Bengtson, H.M. Selim)
3:20PM	062188	Large-Scale Impacts of Frozen Soil on Soil Erosion: Coupling the WEPP Model to a Macro-Scale Hydrologic Model , Dazhi Mao, Purdue University, West Lafayette, IN (D. Mao, K.A. Cherkaer, D.C. Flanagan)
3:35PM	062189	Sensitivity and Uncertainty Analysis for Wind Erosion Prediction System (WEPS) , Guanglong Feng, Washington State Univ, Pullman, WA (G. Feng, B. Sharratt)
3:50PM		Break
4:00PM	062190	Winter Runoff and Erosion from Pacific Northwest Cropland , Donald K. McCool, USDAARS PWA, Pullman, WA (D. K. McCool, K. E. Saxton, P. K. Kalita)
4:15PM	062191	Zero Tillage and Surface Layer Liming Promising Technique to Reduce Clay Soil Erosion and Phosphorus Loading , Laura E. Alakukku, MTT Agrifood Research Finland, Jokioinen, Finland (L. Alakukku, E. Aura)
4:30PM	062192	Control of Runoff and Soil Erosion with Land Application of Polyacrylamide , Majed Abu-Zreig, Jordan Univ of Science & Tech, Irbid, Jordan (M. Abu-Zreig)
4:45PM	062193	Enhancement of Phosphorus Removal in Bioretenation Cell Through Soil Amendment , Wei Zhang, Oklahoma State Univ, Stillwater, OK (W. Zhang, G.O. Brown)

Tuesday, July 11 – 2:30PM-5:00PM

230-SW-12 FATE AND TRANSPORT OF PATHOGENS (Sponsored by SW-22)

Moderator: Michelle L. Soupir, Virginia Tech, Christiansburg, VA
Location: A105

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062194	E. Coli Persistence Associated with Liquid Swine Manure and Liquid Municipal Biosolids in Packed Sand Columns with Artificial Macropores , Shafiqur Rahman, Iowa State University, Ames, IA (S. Rahman, E. Topp, M. Edwards, D. Lapen)
2:50PM	062195	Is Escherichia Coli a Good Indicator of the Transport Behavior of Campylobacter Jejuni in Groundwater Environments? , Carl Bolster, USDA-ARS, Bowling Green, KY (C.H. Bolster, K.L. Cook)
3:05PM	062196	Calibration and Validation of SWAT/Microbial Sub-Model 2005 for Fecal Bacteria Prediction on a Grazed Watershed , Prem B. Parajuli, Kansas State Univ, Manhattan, KS (P.B. Parajuli, K. R. Mankin, P. L. Barnes)
3:20PM	062197	Partitioning of E. Coli and Enterococcus Between Planktonic and Sorbed Phases in Runoff from Pasturelands , Michelle L. Soupir, Virginia Tech, Christiansburg, VA (M. L. Soupir, S. Mostaghimi)
3:35PM	062198	Fate and Transport of Colloid in Porous Media Using a Geocentrifuge , Prabhakar Sharma, Washington State Univ, Pullman, WA (P. Sharma, M. Flury, S. Czizany, E. Mattson)
3:50PM		Break
4:00PM	062199	Evaluating Material Properties to Optimize Wood-Strands for Wind Erosion Control , Natalie S. Copeland, Washington State University, Pullman, WA (N. Copeland, B. Sharratt, J.Q. Wu, R.B. Foltz, J.H. Dooley)
4:15PM	062200	Evolution of a Low Gradient, Sand Bed Channel Following Construction , Nicholas L. Lindow, North Carolina State Univ, Raleigh, NC (N.L. Lindow, R.O. Evans, M.R. Burchell, G.D. Jennings)
4:30PM	062201	Long-Term Nitrogen Load from the Little River Experimental Watershed on the Coastal Plain of Southwest Georgia , Gary W. Feyereisen, USDAARS, Tifton, GA (G.W. Feyereisen, T.C. Strickland, R. Lowrance, D.D. Bosch, J.M. Sheridan, D.G. Sullivan)
4:45PM	062202	Characterizing Hydrologically Active Areas for Effective Management of Phosphorus Loss in Surface Runoff , Sumit Sen, Auburn Univ, Auburn University, AL (S. Sen, P. Srivastava, K. Yoo, P.T. Clement)

Tuesday, July 11 – 2:30PM-5:00PM

231-SW-13 ESTIMATING CROP WATER USE (Sponsored by SW-24)

Moderator: Thomas L. Spofford, Soap Lake, WA
Location: A107

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062203	CANCELLED
2:50PM	062204	Canopy Temperature View Angle Affects on the Water Deficit Index , Walter C. Bausch, USDAARS, Fort Collins, CO (W.C. Bausch)
3:05PM	062205	Effect of ET Calculation Method on Irrigation Scheduling in Midsouth , Earl Vories, USDAARS, Portageville, MO (E.D. Vories, P.L. Tackler)
3:20PM	062206	Estimating Seasonal Crop ET Using Calendar and Heat Unit Based Crop Coefficients in the Texas High Plains Evapotranspiration Network , Thomas Henry Marek, Texas A&M Univ, Amarillo, TX (T. Marek, P. Colaizzi, T. Howell, D. Dusek)
3:35PM		Break
3:45PM	062207	Assessment of SEBAL Model for Estimating Evapotranspiration in Devils Lake Basin , Ramesh Kumar Gautam, North Dakota State Univ, Fargo, ND (R.K. Gautam, D. Steele, D. Hopkins, M. Sharp)
4:00PM	062208	Crop Production in Western Kansas as Related to Irrigation Capacity , Freddie Lamm, Kansas State Univ, Colby, KS (F.R. Lamm, L.R. Stone, D.M. O'Brien)
4:15PM	062209	Estimation of Paddy Rice Crop Coefficients for Penman-Monteith and FAO Modified Penman Method , Seung H. Yoo, Seoul National University Department of Rural Systems Engineering, Seoul, South Korea (S.-H. Yoo, J.-Y. Choi, M.-W. Jang)

4:30PM 062210 **Estimation of Agricultural Water Use Through the Rational Calculation of Paddy Rice Irrigation Water**, Phil Shik Kim, Konkuk Univ, Gwangjin-gu, South Korea (P.-S. Kim, S.J. Kim, Y.-J. Lee)

4:45PM 062211 **Security of Upland Irrigation Water Through the Periodical Management of Dam Storage and Rational Calculation of Paddy Irrigation Water**, Sun Joo Kim, Konkuk Univ, Seoul, South Korea (S.J. Kim, J.Y. Lee, P.-S. Kim)

Tuesday, July 11 – 2:30PM-5:00PM

232-SW-14 STREAM CORRIDOR RESTORATION (Sponsored by SW-25)

Moderator: Stephen P. Perschke, USDANRCS, Pavilion, NY
Location: A108

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062212	An Application of SVAP in Northwestern Minnesota , Sonia M. M. Jacobsen, USDA NRCS, Roseville, MN (S.M. Jacobsen)
2:50PM	062214	Case Study-Soil Bioengineering for Streambank Restoration and Rationale for Success , Molly Smith, USDA-NRCS, Chehalis, WA (L. Saele, D. Renner, M. Smith)
3:05PM	062215	Design Methods for Coastal Stream Restoration in NC , Kris Bass, North Carolina State University Dept. of Biological and Agricultural Eng., Raleigh, NC (K. Bass, M. Burchell, R. Evans, J. Shelby, N. Lindow)
3:20PM	062216	Rock Cross Vane Hydraulics and Durability , Paige R. Puckett, North Carolina State University, Cary, NC (P.R. Puckett)
3:35PM		Break
3:45PM	062217	Trout Stream Improvement in South Carolina , Thomas E. Dobbins, Dobbins Engineering Inc, Seneca, SC (T.E. Dobbins)
4:00PM	062218	Riparian Forest Influences on Channel Morphology and Aquatic Ecology: Implications for Restoration and Management , William Cully Hession, University of Vermont, Blacksburg, VA (W.C. Hession, T.E. Johnson)
4:15PM	062219	An Evaluation of Monitoring Results for Multiple Stream Restoration Projects in the Hiwassee River Watershed of North Carolina , Jason M. Zink, North Carolina University Biological and Agricultural Engineering, Mars Hill, NC – Presenter: Lara Rozzell (J.M. Zink, L. Rozzell, D. Penrose)
4:30PM	062220	Monitoring Evaluation of North Carolina Stream Restoration Projects , Gregory D. Jennings, North Carolina State Univ, Raleigh, NC (G. Jennings, D. Clinton, D. Bidelspach, D. Penrose, B. Doll, L. Rozzell, K. Hall)

Tuesday, July 11 – 2:30PM-5:00PM

233-SW-15 VADOZE ZONE CHARACTERIZATION AND MODELING

(Sponsored by SW-21)

Moderator: Rabi H. Mohtar, Purdue Univ, West Lafayette, IN
Location: A109

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	062221	Delineating Functional Soil Mapping Units , Mohammed A. Salahat, Purdue Univ, West Lafayette, IN (M.A. Salahat, R. H. Mohtar, E. Braudeau)
2:50PM	062222	Subsurface Mapping of Agricultural Landforms Impacted by the New Madrid Earthquakes of 1811-12 , Robert S. Freeland, Univ of Tennessee, Knoxville, TN (R.S. Freeland, J. T. Ammons, C. L. Wirwa)
3:05PM	062223	Estimating Soil Hydraulic Parameters from Space , Binayak Prasad Mohanty, Texas A&M Univ, College Station, TX (B.P. Mohanty, A.V.M. Ines)
3:20PM	062224	Modifying Kozeny-Carman Equation for Evaluating Saturated Hydraulic Conductivity in Clay with Adsorbed Water Layer , Purnendu N. Singh, University of California, Davis Dept. of Land, Air, and Water Resources, Davis, CA (P.N. Singh, W.W. Wallender)
3:35PM	062225	Calibration of a Combined Dielectric Probe to Variably Saturated and Organic Soils: Loxahatchee River Floodplain Soils , Amanda E. Mortl, Univ of Florida, Gainesville, FL – Presenter: Rafael Munoz-Carpena (A. Mortl, R. Muñoz-Carpena, Y. Li)
3:50PM		Break
4:00PM	062226	Herbicide Fate and Transport in the Unsaturated Zone: Field Comparisons from Nebraska and Maryland , Jason R. Vogel, USGS, Lincoln, NE (J.R. Vogel, T. Connell Hancock)
4:15PM	062227	Soil Water Modeling in South Georgia using WEPP Hydrology , David Dean Bosch, USDAARS SEWRL, Tifton, GA (D. Bosch, D. Flanagan, F. Davis)
4:30PM	062228	Soil Water Modeling Using Pedostructure , Rabi H. Mohtar, Purdue Univ, West Lafayette, IN (E. Braudeau, R. Mohtar, P. Martin)
4:45PM	062229	Soil Heat Flux Revisited: a Simple Phase-Difference Model for the G/Rn Ratio , Paul D. Colaizzi, USDAARS, Bushland, TX (P.D. Colaizzi, S.R. Evett, T.A. Howell, J.A. Tolck)

INFORMATION & ELECTRICAL TECHNOLOGIES

Tuesday, July 11 – 2:30PM-5:00PM

234-IET-4 APPLICATIONS AND ADVANCES IN NUMERICAL METHODS (Sponsored by IET-217)

Moderator: Fouad H. Jaber, Univ of Florida, Immokalee, FL
Location: B117

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	063053	A Mass Conservative Algorithm for Simulating Saturated-Unsaturated Flow in Porous Media , Kouroush Sadeghzadeh, Univ of Maryland, College Park, MD (K. S. Zadeh, H. J. Montas, A. Shirmohammadi)
2:50PM	063054	Modelling Phosphorus Transport: Conceptual and Representational Models , Joumana Abou Nohra, McGill Univ, Montreal, QC Canada (J.A. Nohra, C.A. Madramootoo)
3:05PM	063055	Analysis and Solution of a Bicontinuum Transport Model , Hubert J. Montas, Univ of Maryland, College Park, MD (H.J. Montas, J.N. Carleton, A. Shirmohammadi)
3:20PM	063056	Modeling and Solution of Bioagent Movement , Hubert J. Montas, Univ of Maryland, College Park, MD (H.J. Montas, L. Hebou)
3:35PM		Break
3:45PM	063057	Controlling Physiological Responses of Horses as a Basis for Performance Improvement , Jean-Marie Aerts, Leuven B-3001, Belgium (J.-M. Aerts, F. Gebruers, E. Van Camp, D. Berckmans)

4:00PM 063058 **Stem Diameter Variations of Cotton under Deficit Irrigation**, Jiyang Zhang, Chinese Academy of Agricultural Sciences, Xinxiang City, Peoples Republic of China (J. Zhang; A. Duan; Z. Meng; Z. Liu)

Tuesday, July 11 – 2:30PM-5:00PM

235-IET-16 SENSORS FOR AUTOMATION AND ROBOTICS

(Sponsored by IET-318)

Moderator: Reza Ehsani, Univ of Florida, Lake Alfred, FL
Location: B118

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	063059	Automated Corn Plant Spacing Measurement at Early Growth Stages Using Active 3D Computer Vision , Marcel Van Der Veeken, Iowa State University, Ames, IAZZ (M. van der Veeken, L. Tang, J. W. Hofstee)
2:50PM	063060	Segmenting Fruit from Video Images using Background Modeling , Amy L. Tabb, AFRS ARS USDA, Kearneysville, WV (A. Tabb, D. Peterson)
3:05PM	063061	Development of a Renewable Power System for an Autonomous Field Robot , Nathanael L. Gingrich, Univ of Illinois, Maryville, IL (H. Y. Jeon, N. Gingrich, L. Tian)
3:20PM	063062	Real-Time Synchronization of Two Parallel Machines , Reza Ehsani, Univ of Florida, Lake Alfred, FL (K.H. Lee, R. Ehsani)
3:35PM		Break
3:45PM	063063	Stereological Estimators of the Number of Blossoms and Fruit on Trees Using Image Analysis , Dvorralai Wulfsohn, Royal Vet & Ag Univ, Taastrup, Denmark (D. Wulfsohn, G.M. Maletti, M. Nørremark, B.S. Blackmore, T. Toldam-Andersen)
4:00PM	063064	Online Sensing the Mechanical Impacts of Real Perishables During Handling , Martin Geyer, Leibniz Institute of Agricultural Engineering, Brandenburg, Germany (M. Geyer, B. Herold, I. Truppel)
4:15PM	063090	Biorobotics in Seedling Propagation (Development of Planting Machine for Lobelia and Verbena Seedling) , Manzo Uchigasaki, Cornell Univ, Ithaca, NY (M. Uchigasaki, S. Miyamoto, K. Serata)
4:30PM	063082	Hortibot: An Accessory Kit Transforming a Slope Mower into a Robotic Tool Carrier for High Tech Plant Nursing - Part I , Rasmus N. Jorgensen, Danish Institute of Agricultural Sciences, Horsens, Denmark (R. Jorgensen; C. Sorenson; K. Jensen; J. Pedersen; I. Havn; T. Bak; L. Jensen)
4:45PM	063083	Studies in the Optimization of Harvesting Motion Mechanics using a 7-DOF manipulator and a 6-axis Force/Torque Sensor , Samuel J. Flood, Univ of Florida, Gainesville, FL (S.J. Flood, T.F. Burks)

STRUCTURES & ENVIRONMENT

Tuesday, July 11 – 2:30PM-5:00PM

236-SE-4 AGRI-INDUSTRIAL FACILITY DESIGN AND OPERATION

(Sponsored by SE-20)

Moderator: Gregory D. Williams, Tyson Foods, Springdale, AR
Location: C120

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	064115	Design Considerations for the Construction and Operation of Ethanol Manufacturing Facilities, Part I: Planning, Structural, and Life Safety Considerations , Gregory D. Williams, Tyson Foods, Springdale, AR (G.D. Williams, K. Rosentrater, T. Finch)
2:50PM	064116	Design Considerations for the Construction and Operation of Ethanol Manufacturing Facilities, Part II: Process Engineering Considerations , Kurt A. Rosentrater, USDA ARS, Brookings, SD (K. Rosentrater, G.D. Williams, T. Finch)
3:05PM	064117	Design of Pesticide Handling Facilities , Thomas O. Manning, Stockton, NJ (T.O. Manning)
3:20PM	064118	Evaluation of the Efficiency of Different Types of Covering on the Thermal Environmental Variables in Avian Facilities , Kim Norlander, Osceola, WI – Richard S. Gates (V. Telles Paim, Renato Barbosa, J. Flávio Cassin, I. de F. F. Tinóco, C. Akemi Mogami)
3:35PM	064119	Foundation Design for Manure Tanks on Soft Estuarine Sediments , Benjamin C. Doerge, USDANRCS, Fort Worth, TX (B.C. Doerge)
3:50PM		Break
4:00PM	064120	Light Gage Steel Frame Buildings , Volkan Kebeli, Chief Industries Inc, Kearney, NE
4:15PM	064121	Greenhouse Facility Systems Design , Rodney K. Rinehart, Curry-Wille & Assoc, Ames, IA
4:30PM	064122	Methodology for Analysis of Projects of Intensive Finishing Phase Beef Cattle Production Systems , Maria Clara C. Guimarães, Universidade Federal de Vicosa, Minas Gerais, Brazil (M.C. de Carvalho Guimarães, F. da Costa Baêta, A.C. Gonçalves Tiberiçá, I. de F. F. Tinóco, C. Ribeiro dos Santos)
4:45PM	064123	Methodology for Analysis of Intensive Swine Production Facility Design , Juliano C. Severo, Universidade Federal de Vicosa, Vicosa, MG, Brazil – Angela Green (J. C. de Abreu Severo, F. da Costa Baêta, I. de F. F. Tinóco, H. Xin, I. Menegali, A.R. Green)
5:00PM	064124	Development of Single Screw Shaft Mounted Round-Bottom Container Type Waste Cotton use Mushroom Substrate Natural Fermentation and Sterilization Machine for Oyster Mushroom , Kwang-Jae Choe, National Institute of Agricultural Engineering, Suwon, Kyunggi, South Korea (K.J. Choe, K.Y. Oh, B.K. Yu, S.H. Lee, H.J. Park)

Tuesday, July 11 – 2:30PM-5:00PM

237-SE-18 GREENHOUSE TECHNOLOGY APPLICATIONS

(Sponsored by SE-406, SE-303)

Moderator: Joey H. Norikane, Univ of Kentucky, Lexington, KY
Location: C121

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	064125	Study on Ventilation Efficiencies of Naturally Ventilated Multi-Span Greenhouses , Se Woon Hong, Seoul National University, Seoul, South Korea (S.-W. Hong, I.-B. Lee, H.-S. Hwang, I.-H. Seo)
2:50PM	064126	CANCELLED
3:05PM	064127	Effects of Buoyancy and Wind Direction on Airflow and Temperature Distribution in a Naturally Ventilated, Single-Span Greenhouse using a Wind Tunnel , Nadia C. Sabeh, Univ of Arizona, Tucson, AZ (N.C. Sabeh, S. A. Ikeguchi, M.I. Sase, L. Okushima)

3:20PM	064128	Development of an Aerodynamic Model for Studying Internal Greenhouse Climate and Crop Transpiration , In-Bok Lee, Seoul National Univ, Seoul, South Korea (I.-B. Lee, H.-S. Hwang, S.-W. Hong, I.-H. Seo, P. Jang)
3:35PM	064129	Microclimate Prediction in a Greenhouse using Back-Propagation Neural Network (BPNN) Model , Mohammed Saidul Borhan, Agriculture & Agri-Food Canada, Windsor, ON Canada (M.S. Borhan, X. Hao, Y. Zhang, L. Shipp)
3:50PM		Break
4:00PM	064130	Influence of Heating Pipe Placement on Microclimate of Greenhouse with Raised-Trough Production System , Mohammed Saidul Borhan, Agriculture & Agri-Food Canada, Windsor, ON Canada (X. Hao, M.S. Borhan, J. Zheng)
4:15PM	064131	Greenhouse Heating with Geothermal Heat Pump Systems , Andrew D. Chiasson, Oregon Institute of Technology Geo-Heat Center, Klamath Falls, OR – Presenter: Tonya Boyd (A.D. Chiasson)
4:30PM	064132	Geothermal Heating of Greenhouse and Aquaculture Facilities , Tonya L. Boyd, Oregon Institute of Technology Geo-Heat Center, Klamath Falls, OR (T.L. Boyd, J.W. Lund)
4:45PM	064133	The Effects of Fertility, VWC Targets, Choice of VWC Sensors and pH Modification on Biomass Production of Poplar Trees , Robert C. Hansen, Ohio State Univ, Wooster, OH (R.C. Hansen, D.A. Herms, J.C. Christman)

Tuesday, July 11 – 2:30PM-5:00PM

238-SE-9B AIR QUALITY MODELING - PART 2

(Sponsored by SE-305)

Moderator: Bryan W. Shaw, Texas A&M Univ, College Station, TX

Location: C122

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	064134	A Comparison of WindTrax and Ausplume for Backcalculating Hydrogen Sulfide Emission Rates From Open-Lot Beef Cattle Feedyards and Ponds , David B. Parker, West Texas A&M Univ, Canyon, TX (D. Parker, G. Galvin, R. Ormerod, M. Rhoades)
2:50PM	064135	Hydrogen Sulfide Dispersion, Summary of Model Farms , David R. Schmidt, Univ of Minnesota, Hamel, MN (D.R. Schmidt, L.J. Jacobson)
3:05PM	064136	Calibration of an Odor Dispersion Model , Guoliang Qu, Alberta Research Council, Vegreville, AB Canada (G. Qu, D. Scott, J. Segura, J. Feddes)
3:20PM	064137	Seasonal and Diurnal Odour Emissions From Swine Manure Storage Basins , Huiqing Guo, Univ of Saskatchewan, Saskatoon, SK Canada (H. Guo, W. Dehod, J. Agnew, J. Feddes, C. Laugué, S. Pang)
3:35PM		Break
4:15PM	064140	Modelling Heat and Mass Transfer in Imperfectly Mixed Fluids , Andres Van Brecht, Katholieke Univ Leuven Laboratory for Agricultural Bldgs Res, Leuven, Belgium (A. Van Brecht, D. Berckmans)
4:30PM	064141	Estimation of Measurable Error Caused by Residual Odor in Sampling Bags , Guoliang Qu, Alberta Research Council, Vegreville, AB Canada (G. Qu, J. Feddes)

Tuesday, July 11 – 1:00PM-5:00PM

239-SE-21B AGRICULTURAL WASTE MANAGEMENT- MINI

SYMPOSIUM - PART 2 (Sponsored by SE-412, SW-263, FPE-707)

Moderator: John J. Classen, North Carolina State Univ, Raleigh, NC

Location: C123

TIME	PAPER #	PRESENTATION TITLE
1:00PM	064142	Economics of Manure Phosphorus Distribution from Beef Feeding Operations , William F. Kissinger, Professional Environmental Solutions, Fairfield, NE
1:30PM	064143	Combustion-Fuel Properties of Manure or Compost from Paved vs. Unpaved Cattle Feedlots , John M. Sweeten, Texas A&M Univ Agr Res & Ext Center, Amarillo, TX
2:00PM	064144	Potential Biomass Production from Recycled Wastewater , Clifford B. Fedler, Texas Tech Univ, Lubbock, TX
2:30PM		Break
3:00PM	064145	Non-basin Technologies for Open Feedlot Runoff: Project Design and Monitoring for Five Commercial Beef Feedlots , Carl H. Pederson, Iowa State Univ, Ames, IA
3:30PM	064146	Swine Anaerobic Lagoon Nutrient Concentration Variation with Season, Lagoon Level, and Rainfall , Philip W. Westerman, North Carolina State Univ, Raleigh, NC (P.W. Westerman, J. Arogo Ogejo, G.L. Grabow, M.E. Adcock)
4:00PM	064147	Evaluation of Anaerobic Digestion, Mechanical Liquid-Solid Separation and Electrocoagulation for Dairy Manure Treatment , Heath R. Hall, Utah State Univ, Wellsville, UT
4:30PM	064148	Manure Slurry-Enriched Seeding of Biosuppressive Covers Using a Subsurface Deposition Applicator , Timothy M. Harrigan, Michigan State Univ, East Lansing, MI (Harrigan, Snapp, Mutch)

Tuesday, July 11 – 2:30PM-5:00PM

240-SE-16 RECENT TRENDS AND INNOVATIONS IN SWINE

HOUSING (Sponsored by SE-404)

Moderator: John C. Gilbert, Curry-Wille & Assoc, Ames, IA

Location: C126

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	064149	A New Housing System for Grower-Finisher Pigs to Separate Feces from Urine and Reduce Odour and Ammonia Emissions , Stephane P. Lemay, IRDA, Deschambault, QC Canada (S.P. Lemay; S. Godbout; R. Bergeron; M. Belzile; F. Pouliot; F. Rondeau; A. Marquis; B. Predicala; C. Lague)
2:50PM	064150	A Water Spray Treatment Method to Reduce Exposure to Hydrogen Sulfide in Swine Buildings , Erin L. Cortus, Univ of Saskatchewan, Saskatoon, SK Canada (B.Z. Predicala, E.L. Cortus, R. Fengler, S.K. Christianson)
3:05PM	064151	Manure Separation Efficiency and Emissions from a Commercial Swine Building Equipped with a V-Shape Scraper System , Stephane Godbout, IRDA Inc Station Deschambault, Deschambault, QC Canada (S. Godbout, S.P. Lemay, F. Pelletier, M. Belzile, F. Pouliot, J. Chicoine)
3:20PM		Break
3:30PM	064152	Infrared Thermography Evaluation of Commercially Available Infrared Heat Lamps , Ronald D. MacDonald, Agviro Inc, Guelph, ON Canada – Presenter: Jeremiah Davis (J. Davis; R. MacDonald, H. Xin)
3:45PM	064153	CANCELLED

ERGONOMICS, SAFETY & HEALTH

Tuesday, July 11 – 2:30PM-5:00PM

241-ESH-3 SAFETY AND HEALTH AND EMERGING TECHNOLOGIES FOR AGRICULTURE (Sponsored by ESH-04, PM-58, PM-54)

Moderator: Melvin L. Myers, Avondale Estate, GA

Location: B119

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	065016	Impact of Tractor Safety Requirement on ROPS Standards and Technology , Juhua Liu, Colorado State Univ, Superior, CO
2:50PM	065017	Effects of Cutting Height and Pruning Method on Muscle Activities and Force Production during Simulated Winegrape Vine Pruning , John C. Kung, University of California Biological and Agricultural Engineering, Davis, CA (F.A. Fathallah, J.A. Miles)
3:05PM	065018	Development of Ergonomic Solutions for Bucket Handling on Farms , Steven T. Tang, University of California Biological and Agricultural Engineering, Davis, CA (F.A. Fathallah, T.R. Waters, J.A. Miles)
3:20PM	065019	In depth Investigation of Agricultural Machinery Injuries: an Extensive Study of Machine Design and Human Factors , Wayne A. Baker, Monash Univ, Clayton Campus, Australia
3:35PM		Break
3:45PM	065020	Comparison of Simple Shape Measures and Fourier Descriptors as applied to the Identification of High-injury-risk Glass Contaminants in Horticultural Peat , Gashaw Ayalew Gobezie, Univ College Dublin, Dublin, Ireland
4:00PM	065021	Noise Exposure in Cow Houses - Hazard to Farmers and to Animals? , Kyosti Louhelainen, Institute of Occupational Health, Kuopio, Savo Finland (E. Rytkonen; O. Lankia)
4:15PM	065022	Liberty Tube : Engulfment Rescue Device , Douglas M. Kingman, Sam Houston State University, Huntsville, TX – Presenter: Paul Jones (W.E. Field, D.E. Maier)
4:30PM	065023	H2S Emission Rates and CFD Modeling of H2S Decay in Manure Storages during Forced Ventilation , Juan Zhao, Penn State Univ, University Park, PA

FOOD & PROCESS ENGINEERING INSTITUTE

Tuesday, July 11 – 2:30PM-5:00PM

242-FPE FOOD PROCESSING INSTITUTE POSTER SESSION

(Sponsored by FPE)

Moderator: Ratna R. Sharma, North Carolina State Univ, NC

Location: Exhibit Hall A

1	066100	Assessment of Color Development Due to Twin-Screw Extrusion of Rice-Glucose-Lysine Blend , Hanwu Lei, Univ of Minnesota, St Paul, MN – Presenter: Roger Ruan
2	066101	Computer Vision and Chemical Marker M-2 Yield with Whey Protein Gels- An Advance Method to Locate Cold Spots , Ram B. Pandit, Washington State Univ, Pullman, WA (R.B. Pandit, J. Tang, L. Frank, G. Mikhylenko)
3	066102	Enhancing the Accuracy of Projected Areas for Machine Vision Based Weighing of Hogs , Wade W. Yang, Alabama A&M Univ, Normal, AL (P.W. Yang)
4	066103	Detection of Foreign Material in Agricultural and Food Products by Electrical Impedance Tomography , Kiyohiko Toyoda, Kobe Univ, Kobe, Japan (K. Toyoda, M. Ogawa, K. Tahara)
5	066104	Implementation of a Technique Using Reflectance Spectrum of NIR to Sort Tomato Fruits by Sugar Content , Sang-Ryong Suh, Chonnam National Univ, Gwangju, South Korea (S.R. Suh, Y.T. Kim, Y.S. Choi, S.N. Yoo)
6	066105	Evaluation Methods for Electronic Tongue Applications , Andras Fekete, Corvinus Univ of Budapest, Budapest, Hungary (D.B. Kantor, A. Fekete, P. Meszaros)
7	066106	Microencapsulation of Multiple-Layer Emulsion with High-Voltage Electrostatic Field , Baoguo Li, University of Shanghai for Science and Technology, Shanghai, Peoples Republic of China (B. Li, Y. Zhang, W. Zhang, Z. Pan)
7	066107	Measurement Methods of Viscoplastic Materials , Andras Fekete, Corvinus Univ of Budapest, Budapest, Hungary (T. Kaszab, A. Fekete)
8	066108	Rheological Properties of Chocolate Mass Measured by Different Methods , Andras Fekete, Corvinus Univ of Budapest, Budapest, Hungary (V. Biczó, A. Fekete, R. Scherer, R. Schaefer)
9	066109	Study of Rheological Properties of Mexican Cheeses , Hee-Joon Park, South Dakota State Univ, (H.-J. Park, J. Julson, K. Muthukumarappan)
10	066110	CANCELLED
11	066111	Study of Water Diffusion between Bread and Cheese , Qi Jinning, Univ of Minnesota, (J. Qi, R. Ruan, P. Chen, Y. Li, Y. Li, C. Doona)
12	066112	Thermal Properties of Rice Flour , Yubin Lan, USDA-ARS-SPARC-APMRU, College Station, TX (Y. Lan, A. K. Mahapatra, S. Wang)
13	066113	Reaction Kinetics of Color Development in an Extrusion-Cooked Model System , Hanwu Lei, Univ of Minnesota, St Paul, MN – Presenter: Roger Ruan; (H. Lei, R.G. Fulcher, R. Ruan, B. van Lengerich)
14	066114	Functional Properties and Microstructure of Micronized Potato Starch , Zhihui Mao, China Agricultural Univ, Beijing, Peoples Republic of China (G. Ren, D. Li, Z. Mao)
15	066115	Segregation during Gravity-Driven Discharge of Distillers Dried Grain with Solubles (DDGS) , Klein E. Ileleji, Purdue Univ, West Lafayette, IN (K.E. Ileleji, R.L. Strohshine)
16	066116	Influence of Apple Variety on the Contamination of Patulin in Apple Fruits and Apple Juice Concentrate , Junling Shi, College of Food Science and Engineering, Yangling, Shaanxi Province, Peoples Republic of China (J. Shi, X. Zhang, Y. Li)
17	066189	Integrating Biomass Feedstock with the Existing Grain Handling System for Biofuels , Shahab Sokhansanj, Oak Ridge National Lab, North Vancouver, BC Canada (S. Sokhansanj, S. Tagore)
18	066190	Antioxidative and Antibacterial Effects of Peanut Skin Extract in Select Food Models , Jianmei Yu, North Carolina A&T State University, Greensboro, NC (J. Yu, P. Myrick, M. Ahmedna, I. Goktepe)
19	066057	A Comparison and Joint use of VIS-NIR, MIR and Fluorescence Spectroscopic Methods for Differentiating between Manufacturing Processes and Sampling Zones of Ripened Soft Cheese , Romdhan Karoui, Katholieke Universiteit Leuven Department of Biosystems, Leuven, Belgium (R. Karoui, A.M. Mouazen, H. Ramon, J. De Baerdemaeker)
20	066192	Development and Evaluation of Solar Air Heaters for Drying of High Moisture Paddy , Raj K. Goyal, Central Institute of Postharvest Eng and Tech, Ludhiana, Punjab, India (R.K. Goyal, M.K. Manikantan, O.D. Wanjarji)
21	066193	Effect of Temperature and Moisture Content on Shelf Life of Paddy , Nalladurai Kaliyan, Univ of Minnesota, St Paul, MN (N. Kaliyan, K. Alagusundaram, P. Gayathri)
22	066194	Effect of Temperature Management on Natural Infestation Levels and Confined Populations of Red Flour Beetle and Maize Weevil in Stored Corn - Summer 2006 Pilot Bin Trials , Rajshekhhar B. Hulaseare, Purdue Univ, West Lafayette, IN (R. Hulaseare, D.E. Maier, C.P. Woloshuk)
23	066195	Effects of the Fraction of Evaporator Bypass Air on Siva Acharyaviriyi , Chiang Mai Univ, Chiang Mai, Thailand (S. Acharyaviriyi, M. Chotswad)
24	066196	Monitoring Grain Storage with Relative Humidity, Temperature and Carbon Dioxide Sensors , Haidee Gonzales, Kansas State Univ, Manhattan, KS (H. Gonzales, P.R. Armstrong, R.G. Maghirang)
25	066197	An Intelligent Controller for Grain Dryer , Zhihui Mao, China Agricultural Univ, Beijing, Peoples Republic of China (G. Li, Z. Mao)
26	066198	Carbon Dioxide Gas Sorption by Paddy and Its Byproducts , Nalladurai Kaliyan, Univ of Minnesota, St Paul, MN (N. Kaliyan, K. Alagusundaram, S. Ganapathy)
27	066199	Physical and Cooking Properties of Aromatic Rice During Thin Layer Drying Process by Batch Type Dryer , Seyyed Jafar Hashemi, Univ of Tsukuba, Ibaraki-Ken Tsukuba Shi, Japan (J. Hashemi, N. Shimizu, T. Kimura)
29	066201	Developing and Demonstrating Identity-Preserved Protocols for Grain Production in Kentucky , Samuel G. McNeill, Univ of Kentucky, Princeton, KY (S.G. McNeill, M.D. Montross, T.S. Stombaugh)
28	066200	Mortality of Indianmeal Moth Under Changing Temperatures: Model Development and Validation , Nalladurai Kaliyan, Univ of Minnesota, St Paul, MN (N. Kaliyan, M.A. Carrillo, R.V. Morey, W.F. Wilcke, S.A. Kells)
30	066202	Feasibility of Ground Loop Systems to Provide Condition Air for Summer Aeration , Michael D. Montross, Univ of Kentucky, Lexington, KY (M.D. Montross, T.A. Bridges, S.G. McNeill)
31	066203	Investigation into Grain Dry Matter Loss During Field Drying of Corn , Lester O. Pordesimo, USDAARS Eastern Reg Res Center, Glenside, PA (L.O. Pordesimo, A.M. Saxton, L.E. Paul, R.C. Bellm)
32	066204	Experimental Study on Preparation of Microparticles Using Supercritical CO2 Spray Drying , Baoguo Li, University of Shanghai for Science and Technology, Shanghai, Peoples Republic of China (B. Li, W. Zhang, P. Zhongli)
33	066205	Rough Rice Kernel Singulation Device , Juhui Srivastava, Univ of Arkansas, Fayetteville, AR (J. Srivastava, C.L. Griffiths)
34	066206	Quality and Sorption Characteristics of Microwave-Vacuum, Air and Freeze Dried Mushrooms , Suresh Prasad, Indian Institute of Tech, Kharagpur, India (S.K. Giri, P. Suresh)
36	066207	Vacuum Assisted Solar Drying of Tomato Slices , Perumal Rajkumar, Tamil Nadu Agricultural Univ, Ste-Anne-de-Bellevue, QC Canada (P. Rajkumar, S. Kulanthaisami, G.S.V. Raghavan, Y. Garipey, V. Orsat)
36	066208	Precooling Temperature's Influence on Energy Consume During the Process of Food Vacuum Cooling , Tong Er Chen, Institute of Thermal Science in Medicine, China (T. Chen, B. Zhou, T. Wang)
37	066209	Sorption Characteristics of Ocimum Sanctum: A Medicinal Herb Used for Cure of Diabetes , Pandey Hridyesh, Indian Institute of Tech, Ghaziabad, India (H. Pandey, H.N. Mishra)
38	066210	Determination of Shelf Life of Milled Rice Stored at Different Temperatures , Mio Yokoe, Hokkaido Univ, (M. Yokoe, S. Kawamura)
39	066211	Effect of Microwave and Combined Microwave-Convective Drying on Grinding and Particle Size Distribution of Green Field Peas , Anthony Opoku, Univ of Saskatchewan, Saskatoon, SK Canada – Presenter: Lope Tabil (A. Opoku, L.G. Tabil)
40	066212	A Review of the Models for Description of Whey Separation During Cheese Making , Manuel Castillo, Univ of Kentucky, Lexington, KY (M. Castillo, S. Torrealba, F.A. Payne)
41	066213	Non-Thermal Microwave Effect on Enzyme Activity in Milk , Erika Lakatos, University of West Hungary, Var Mosonmagyaróvár, GYMS Hungary
42	066214	Table Grape Quality Models for Predicting Product Performance during Postharvest Distribution , John P. Lopresti, Primary Industries Research Victoria, Victoria, Australia
43	066215	Quality of Medium-density Particleboard from Saline Eucalyptus , Yi Zheng, Univ of California, Davis, CA (Y. Zheng, Z. Pan; R. Zhang; B. Jenkins)
44	066216	Soy Protein Adhesive Performance Enhanced by Crosslinking , Ying Wang, Kansas State Univ, Manhattan, KS (Y. Wang; D. Wang; X. Sun)
45	066217	Direct Energy Measurement Systems for Rotary Biomass Grinders , Manlu Yu, Univ of Tennessee, Knoxville, TN – Presenter Al Womac (M. Yu; A. Womac; C. Lgathinathane; P. Miu; S. Sokhansanj; S. Narayan)
46	066218	Terminal Velocity Determination for Component Separation of Biomass , Alvin Ray Womac, Univ of Tennessee, Louisville, TN (S. Klasek; A. Womac; D. Yoder; D. Hayes)
47	066219	Biodiesel Blend Effects in Advanced Diesel Combustion , John M. Storey, Oak Ridge National Laboratory, Knoxville, TN (J. Storey; S. Sluder; R. Wagner; S. Lewis)
48	066220	Base Catalyzed Transesterification of Soybean Oil Using Ultrasonication , Alok K. Singh, Mississippi State Univ, Mississippi State, MS (A. Singh; S. Fernando)
49	066221	A High Shear-Rate Using Static Mixing Reactor for Biodiesel Preparation , Joseph C. Thompson, Univ of Idaho, Moscow, ID (J. Thompson; B. He)
50	066222	Glycerin Steam Reforming for Hydrogen Production , Sushil Adhikari, Mississippi State Univ, Starkville, MS (S. Adhikari; S. Fernando)
51	066223	Value-Added Utilization of Crude Glycerol from Biodiesel Production: a Survey of Current Research Activities , Naresh Pachauri, University of Idaho, Moscow, ID (B. He)
52	066224	Influence of Internal Baffles on Mixing Characteristics of Chopped Switchgrass in a Fluidized Sand Bed , Krushna N. Patil, Oklahoma State Univ, Stillwater, OK (K. Patil; R. Huhnke; D. Bellmer)
53	066225	Thermochemical Conversion of Animal Wastes to Bio-Energy , Paul L. Chen, Univ of Minnesota, St Paul, MN (P. Chen; J. Zhu; F. Yu; A. Tuheim; D. Zhao; Y. Li; R. Ruan)
54	066226	Producing Sustainable Hydrogen from Biomass Gasification Coupled with Water Gas Shift Catalysis , Agus Haryanto, Mississippi State Univ, Mississippi State, MS (A. Haryanto; S. Fernando)
55	066227	Biological Hydrogen Production from Biomass and Agricultural Waste , Sasha D. Hafner, Cornell Univ, Ithaca, NY (S. Hafner)
56	066228	Effect of Pretreatment Severity on the Enzymatic Hydrolysis of Corn and Wheat Stover Fractions , Kathryn B. Duguid, Univ of Kentucky, Lexington, KY (K. Duguid; M. Montross; s. Shearer; C. Crofcheck)
57	066229	Mathematical Modeling of Enzymatic Hydrolysis of Starch: Application to Fuel Ethanol Production , Ganti S. Murthy, Univ of Illinois, Urbana, IL (G. Murthy; V. Singh; K. Rausch; D. Johnston; M. Tumbleson)
58	066230	Pretreatment of Sorghum Fiber for Enzymatic Hydrolysis , Deisy Y. Corredor, Kansas State Univ, Manhattan, KS (D. Corredor; D. Wang; S. Bean)
59	066231	Effect of Protease Enzymes on Dry Grind Corn Process using a Granular Starch Hydrolyzing Enzyme , Ping Wang, Univ of Illinois, Urbana, IL – Presenter: Vijay Singh (P. Wang; V. Singh; D. Johnston; K. Rausch; M. Tumbleson)

- 60 066232 **Effect of Hybrid Variability on a Modified Enzymatic Dry Grind Corn Process**, Vivek Sharma, Univ of Illinois, Urbana, IL (V. Sharma; V. Singh; J. Graeber)
- 61 066233 **Engine Lab Test Using Several Bio-Diesel Blends**, Tomaz Caetano Ripoli, Univ of Sao Paulo, Piracicaba, Brazil (T. Ripoli; A. Juliato)
- 62 066234 **New Approaches to Improve Multispectral Scattering Profiles for Predicting Apple Fruit Firmness and Soluble Solids Content**, Yankun Peng, Michigan State Univ, East Lansing, MI (Y. Peng; R. Lu)
- 63 066168 **Harvest, Collection, and Storage Options for High Volume Cereal Straw Feedstock Assembly**, Reed L. Hoskinson, Idaho National Lab, Rigby, ID (R.L. Hoskinson, C.W. Radtke, J.R. Hess, D.B. Blackwelder, J.A. Lacey)
- 64 066051 **Microwave Pyrolysis of Biomass**, Fei Yu, Univ of Minnesota, St Paul, MN – Presenter: Roger Ruan (F. Yu, A.I.M. Tunheim, X. Lin, Y. Liu, R. Ruan, D. Zhao, Y. Li, A. Doering, P. Chen)
- 65 066238 **Unique Exhaust HC Species in Bio-Fuels Combustion**, Samuel A. Lewis, Oak Ridge National Laboratory, Knoxville, TN (M. Kass, J. Storey, R. Wagner, S. Huff, M. Schwartz)
- 66 066236 **Structural Analysis of Prismatic Metallic Silos**, Jose Pinheiro Lopes Neto, Federal Univ Campina Grande, Paraiba, Brazil (J.P.L. Neto, J.W. B. Nascimento, C. Cali Jr)
- 67 066138 **Analysis of Diesel Engine Exhaust Fueled with Blends of Biodiesel and Ethanol**, Saroj K. Jha, Mississippi State University, Starkville, MS (S.K. Jha, S. Fernando)

BIOLOGICAL ENGINEERING

243-BE BIOLOGICAL ENGINEERING DIVISION POSTER SESSION (Sponsored by BE)

Moderator: Chenming Zhang, Virginia Polytechnic Inst & State Univ, Blacksburg, VA
Location: Exhibit Hall A

- 1 067083 **Fifty-five years of Agricultural Engineering at North Carolina Agricultural & Technical State University**, Laurent M. Ahiablame, North Carolina A&T State Univ, Kernersville, NC (L. Ahiablame)
- 2 067084 **CANCELLED**
- 3 067085 **The Studies of Thermophilic, Non-Anaerobic Microbial Community of Composts**, Chung-Hsing Wu, National Taiwan Univ, Taipei, Taiwan, Peoples Republic of China (C.-H. Wu, S.-T. Chang)
- 4 067086 **Amylase Production on Sweet Potato in Solid Substrate Cultivation**, Mari S. Chinn, North Carolina State Univ, Raleigh, NC (L.J. Fleischmann, M.S. Chinn)
- 5 067087 **Design and Instrumentation of a Dual-stage Gasification System for Specific Synthesis Gas Composition**, Mari S. Chinn, North Carolina State Univ, Raleigh, NC (A.B. Earle, M.S. Chinn, M.D. Boyette, S.A. Hale)
- 6 067088 **Saccharification of Sweet Potatoes for the Production of Ethanol**, Mari S. Chinn, North Carolina State Univ, Raleigh, NC (C. E. Nivens, M.S. Chinn)
- 7 067089 **Evaluating Non-composted Grain Substrates for the Production of Agaricus bisporus and Agaricus blazei Mushrooms**, Mark A. Bechara, Penn State Univ, University Park, PA (M. A. Bechara, P. Heinemann, P. N. Walker, C. P. Romaine, V. Wilkinson)
- 8 067090 **Studying the Kinetics of Microbial Pretreatment of Cotton Stalks by Phanerochaete Chrysosporium**, Jian Shi, North Carolina State Univ, Raleigh, NC (J. Shi, R.R. Sharma-Shivappa, M. Chinn)
- 9 067091 **Subcritical Water Pretreatment of Cotton Stalks for the Production of Ethanol**, Kelly C. Williams, North Carolina State Univ, Morrisville, NC (K. Williams, R. Sharma, L. Stikeleather)
- 10 067092 **The Influence of Biomass Harvest Date on Ensiled Corn Stover Quality**, Qin Chen, The Pennsylvania State Univ, University Park, PA (Q. Chen, T.L. Richard, H. Ren, D. Tanjore)
- 11 067093 **Effects of Freezing, Drying and Refrigerated Preservation on Subsequent Ensilage of Corn Stover Biomass**, Deepti Tanjore, The Pennsylvania State Univ, University Park, PA (D. Tanjore, T.L. Richard, H. Ren, Q. Chen)
- 12 067094 **Production of Pecan Shell-based Activated Carbons: Process Optimization for Efficient Water Purification**, Mohamed Ahmedna, North Carolina A&T State University, Greensboro, NC – Presenter: Jianmei Yu (M. Ahmedna, J. Yua, S. Niandoua, M. Norib, S. Iliasb, I. Goktepea)
- 13 067095 **Pyrolysis Characteristics and Kinetics of Corn Stover Studied by Differential Thermogravimetry**, Fei Yu, Univ of Minnesota, St Paul, MN – Presenter Roger Ruan (F. Yu, R. Ruan, P. Chen)
- 14 067096 **Liquefaction of Corn Cobs with Supercritical Water Treatment**, Fei Yu, Univ of Minnesota, St Paul, MN – Presenter: Roger Ruan (F. Yu, R. Ruan, D. Zhao, Y. Liu, X. Lin, Y. Li, A. Doering, P. Chen)
- 15 067097 **Matrix Attachment Region Increased Reporter Gene Expression in Stably Transformed Dunaliella salina**, Tianyun Wang, Zhengzhou University, Zhengzhou, Henan
- 16 067098 **A Novel Method for Microencapsulation of Protein Drug Using High-voltage Electrostatic Field System**, Baoguo Li, University of Shanghai for Science and Technology, Shanghai, Peoples Republic of China (B. Li, J. Gao, Z. Pan)
- 17 067099 **Improve Plant-Made Pharmaceutical Production Through Upstream Biological Engineering**, Shawn Chen, Arizona State University The Biodesign Institute, Tempe, AZ (Qiang Chen)
- 18 067100 **Feasibility Study of Including Polyethyleneimine Precipitation in a Process for Beta-Glucuronidase Purification from Transgenic Tobacco**, Chris J. Holler, Virginia Tech, Roanoke, VA – Presenter: C. Zhang (C. Holler, C. Zhang)
- 19 067101 **Nisin Production by Immobilized Cell Culture during Batch and Fed-Batch Fermentations with Various pH Profiles**, Ali Demirci, Penn State Univ, University Park, PA (T.J. Miserendino, A. Demirci)
- 20 067102 **Recovery of Nisin Produced in Biofilm Reactor**, li Demirci, Penn State Univ, University Park, PA (T. Pongtharangkul, A. Demirci)
- 21 067103 **CANCELLED**
- 22 067104 **Separation and Recovery of Lactic Acid from Fermentation Borth using Nanofiltration Membrane**, Yebo Li, North Carolina A&T State Univ, Greensboro, NC (Y. Li, A. Shahbazi)
- 23 067105 **Fatty Acids and Surfactants as Growth Promoting Factors for Bifidobacteria and Lactobacillus reuteri**, Ibrahim A. Salam, North Carolina A&T State University, Greensboro, NC (S.A. Ibrahim, A. AbuGhazaleh, Y.I. Murad)
- 24 067106 **Application of Ascorbic Acid and Palmitoyl Ascorbate to Inhibit the Growth of Salmonella and E. coli O157:H7 in Laboratory Medium**, Ibrahim A. Salam, North Carolina A&T State University, Greensboro, NC (M.M. Salameh, S.A. Ibrahim, H. Yang, A. Shahbazi, C.W. Seo)
- 25 067107 **Antimicrobial Effect of Lactic Acid Alone or in Combination with Caffeine and Copperon Growth of Escherichia coli O157: H7 in Laboratory Media**, Ibrahim A. Salam, North Carolina A&T State University, Greensboro, NC (O.Z. Mutamba, S. Ibrahim, C. Seo, H. Yang)
- 26 067108 **Effect of Different Spices on Growth Organic Acid Production and Antibacterial Activity by Bifidobacterium Longum**, Ibrahim A. Salam, North Carolina A&T State University, Greensboro, NC (S.A. Ibrahim, H. Yang, C. W. Seo, A. Shahbazi)
- 27 067109 **Antibacterial Activity of Chives against Salmonella in Culture Medium**, Ibrahim A. Salam, North Carolina A&T State University, Greensboro, NC (T.S.F. Tom, S.A. Ibrahim, C.W. Seo)
- 28 067110 **Preparation of Activated Carbons from North Carolina Agricultural By-Products by Phosphoric Acid**, Hong Yang, North Carolina A&T State Univ, Greensboro, NC (H. Yang, S. Ibrahim, C.W. Seo, W.E. Marshall)
- 29 067111 **Development of a Biosensor for Breath Analysis and Monitoring Applications**, Mary-Grace Danao, Cranfield University, Bedfordshire, United Kingdom (M.C. Danao, D.C. Cullen, T.T. Mottram, C. Turner)
- 30 067112 **A Study on Processing Flax Fiber-reinforced Polyethylene Biocomposites by Injection Molding**, Xue Li, Univ of Saskatchewan, Saskatoon, SK Canada – Presenter: Lope Tabil (X. Li, L. Tabil, S. Panigrahi, W. Crerar)
- 31 067113 **Effect of Peroxidase System from White Rot Fungi on Biological Liquefaction of Crop Residues**, Zhihui Mao, China Agricultural Univ, Beijing, Peoples Republic of China (L.i Zhang)
- 32 067114 **Optimization of Fermentation Conditions on the Production of Xylitol by Candida Tropicalis**, Anthy M. Alexiades, Virginia Tech, Blacksburg, VA (A. Alexiades, F.A. Agblevor)
- 33 067115 **A Microbial Fuel Cell Coupling Anaerobic Degradation of Agricultural Lignocellulose Wastes to Electricity Generation**, Hamid Rismani-Yazdi, Ohio State University Dept. of Food, Ag, and Biological Eng., Columbus, OH (H Rismani-Yazdi, A.D. Christy, B.A. Dehority, O.H. Tuovinen)
- 34 067116 **Applications of Antibody-based Biosensors to Pesticide Residues Monitoring**, Xuesong Jiang, Zhejiang Univ, Hangzhou, China (Y. Ying, X. Jiang, J. Wang, Z. Ye, Y. Li, G. Zhu)
- 35 067117 **Rapid Detection of Escherichia Coli O157:H7 Using Piezoelectric Immunosensor**, Qunhe Li, Zhejiang University College of Biosystems Eng. & Food Science, Hangzhou, Zhejiang Peoples Republic of China (Q. Li, J. Wang, Y. Ying, Y. Li)
- 36 067118 **Multi-array Biosensor for Pathogen Detection Based on Nano-scale Porous Silicon**, Deng Zhang, Michigan State University Dept. of Biosystems & Agricultural Eng., East Lansing, MI (D. Zhang, E.C. Aloclija)
- 37 067119 **Detection of Escherichia coli O157:H7 using a QCM Immunosensor with Nanoparticle Amplification**, Chenxu Yu, Pennsylvania State University, University Park, PA – Presenter Yanbin Li (F. Liu, X. Su, Y. Li)
- 38 067126 **Enzyme Immobilized Biosensor for Lactate**, TuSan Park, Seoul National Univ, Seoul, South Korea (T.S. Park, Y.M. Bae, S.I. Choe)
- 39 067121 **Design, Construction and Evaluation of a Portable Biosensor for Rapid Detection of E. coli O157:H7**, Zunzhong Ye, University of Arkansas Dept. of Biological and Agricultural Eng., Fayetteville, AR (Z. Ye, Y. Li, Y. Ying, X.-L. Su, Q. Sun)
- 40 067122 **Performance of the Indium Tin Oxide Poly-aniline Biosensor for Bovine Viral Diarrhea Virus Detection**, Zarin Muhammad-Tahir, Michigan State University, East Lansing, MI – Presenter: Deng Zeng (Z. Muhammad-Tahir, E. Aloclija, D. Grooms)
- 41 067123 **Olive Trees Transpiration Rates in Southern Portugal**, Francisco Lucio Santos, Univ of Evora Rural Engineering Dept, 7002-554 Evora Codex, Portugal (F. L. Santos, P.C. Valverde, A. F. Ramos, J. L. Reis)
- 42 067124 **Characterization of Human Breast Epithelial Cells by FTIR and Confocal Raman Microspectroscopy for Cancer Diagnosis**, Chenxu Yu, Pennsylvania State State University, University Park, PA (Chenxu YU, Joseph Irudayaraj, Erin Gestl, Kristin Eckert)
- 43 067125 **Sensing of the Insecticide Carbamate Pesticides by Surface Plasmon Resonance**, Gilmo Yang, National Agricultural Mechanization Research Institute, Suwon, Gyeonggi-do, South Korea (G. Yang, N. Cho, K. Kim)
- 44 067037 **Phosphorus Loss from a Beef Cattle Ranch in the Lake Okeechobee Basin**, Jian Zhou, Univ of Florida, Immokalee, FL (J. Zhou, S. Shukla, W. Graham, K.L. Campbell, M. Flinchum)
- 45 067127 **Analysis and Control of Gene Expression with Photoactivatable Nucleic Acids**, Todd W. Monroe, Louisiana State Univ, Baton Rouge, LA (R.A. Blidner, J.M. Forman, M.H. Huguet, Q. Dong, W.T. Monroe)
- 46 067059 **Immobilization of Uranium (VI) in Structured Saproliite with Microbial U(VI) Reduction**, Young-Jin Kim, Oak Ridge National Laboratory, Oak Ridge, TN (Y.-J. Kim, S.C. Brooks, W. Kamolpornwiji)

EDUCATION

Tuesday, July 11 – 2:30PM-5:00PM

244-ED-2 K-12 ENGINEERING INSTRUCTION DEVELOPMENT

(Sponsored by Educ)

Moderator: Chi Ngoc Thai, Univ of Georgia, Athens, GA

Location: B114

TIME	PAPER #	P RESENTATION TITLE
2:30PM		Introduction
2:35PM	068043	High School Water Quality Monitoring Education , G Morgan Powell, PE, Kansas State Univ, Manhattan, KS (G.M. Powell, R. Janke, R. Moscou)
2:50PM	068041	Non-Server Web-Based User Interface Design of Interactive Agricultural Safety and Health CD for 4H , Juhua Liu, Colorado State Univ, Superior, CO (J. Liu, V. Buchan, B. Seiz)
3:05PM	068042	Renewable Energy Workshops for Middle and High School Students , Czarena L. Crofcheck, Univ of Kentucky, Lexington, KY (C. Crofcheck, S. Nokes)
3:20PM	068040	Introducing Middle School Students to Computer Modeling , Natalie J. Carroll, Purdue Univ, West Lafayette, IN (N. Carroll)

Tuesday, July 11 – 2:30PM-5:00PM

245-ED-O-2 SUCCESSFULMULTI-STATE EXTENSION PROGRAMS

(Sponsored by P-208)

Moderator: Thomas G. Franti, Univ of Nebraska, Lincoln, NE

Location: B110

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	068044	Team Conservation Tillage - Promoting CTthrough Partnerships , Gary L. Hawkins, Univ of Georgia, Tifton, GA(G.L. Hawkins, A. Page, J. Gaskin, K. Iversen, D. Franklin, B. Moore, R. Odum)
2:50PM	068045	Conservation Tillage Training forGeorgia's County Agents , Gary L. Hawkins, Univ of Georgia, Tifton, GA(G.L. Hawkins, D. Lee, J. Gaskin, W. Reeves, K.S.U. Jayaratne)
3:05PM	068046	Development of an Operation and Maintenance Service Provider Training Program , Bruce J. Lesikar, Texas A&M Univ, College Station, TX (B. Lesikar, C. O'Neill, George Loomis, D. Kalen, D. Gustafson, N. Deal, D. Lindbo)
3:20PM		Break
3:30PM	068047	Installation of a Remote Pond Waterer: an Educational Focus Event , Morgan Powell, Kansas State University, Manhattan, KS (G.M. Powell, S.L. Edgett-Minson, H.C. George)
3:45PM	068048	Implementing OdorFootprint Tool Output Resources into the Planning and Permitting of Livestock Facilities , Richard R. Stowell, Univ of Nebraska, Lincoln, NE (R.R. Stowell, R.R. Koelsch, R. Nicolai, K. Niemeir, D. D. Schulte)
4:00PM	068049	National Learning CenterforAnimal AgricultureWaterQuality Issues , Richard Kent Koelsch, Univ of Nebraska, Lincoln, NE (R. Koelsch, M. Risse, F. Humenik, J. Harrison)

Tuesday, July 11 – 2:30PM-5:00PM

246-ED-O-7 BIOMASS FUELREDUCTION AND UTILIZATION

(Sponsored by T-12)

Moderator: James H. Dooley, Forest Concepts, Federal Way,WA

Location: B111

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	068050	Perspectives on Woody Biomass Fuel Value and Specifications in Alabama , Dana L. Mitchell, USDAForest Service, Auburn University, AL(D. Mitchell)
2:50PM	068051	Perspectives on Woody Biomass for Value-Added Uses in the Western United States , Mark S. De Tray, Forest Concepts, Federal Way,WA – Presenter: David Lanning (M.S. DeTray, J.H. Dooley, D.N. Lanning)
2:50PM	068051	Perspectives on Woody Biomass for Value-Added Uses in the Western United States , David Lanning, Forest Concepts, LLC, Federal Way,WA (Presenter: David Lanning)
3:05PM		Break
3:15PM	068052	An Integrated Approach to Fuels Treatment in the Southwestern U.S.: The Harvest Cost-Revenue Estimator , Eini Lowell, P&WResearch Station 620 SWMain St., Portland, OR (E.C. Lowell, D.R. Becker)
3:30PM	068053	Modeling Infiltration Under Wood Byproducts Used ForErosion Control , Randy B. Foltz, USDAForest Service, Moscow, ID (R.B. Foltz, K.Y. Doyle)
3:45PM	068054	Large RectangularBales for Woody Biomass , James H. Dooley, Forest Concepts, Federal Way,WA (J.H. Dooley, J. L. Fridley, M. DeTray, D. Lanning)

Tuesday, July 11 – 2:30PM-5:00PM

247-ED-INV CHINAEXCHANGE: VISION, PHILOSOPHY, AND ROADMAPS (INVITED)

(Sponsored by AOCABFE)

Moderator: Xiusheng Yang, Univ of Connecticut, Storrs, CT

Location: B113

TIME	PAPER #	PRESENTATION TITLE
2:25PM		Introduction
2:30PM		Evolution, Development and Future of Agricultural Engineers , Jaw-Kai Wang, Univ of Hawaii, Honolulu, HI
2:45PM		Biomass Energy in China, A Challenge and a Chance , Xu Cheng, China Agricultural University, .
3:00PM		The Role of Overseas Chinese Professionals in Promoting Applied Technology Exchanges Between China and the World , Jiansheng Zhang, China Council for Applied Technology Exchanges, .
3:15PM		Critical Issues in Research forAgriculture, Farmers, and Rural Development in China , Maoliang Lei, Chinese Academy of Agricultural Engineering, Beijing, Peoples Republic of China
3:30PM		Student Exchange - First KSU Study-Aboard Group in China , Naiqian Zhang, Kansas State Univ, Manhattan, KS (D. Wang, T. Culbertson, A. Good)
3:45PM		Research, Education, and Commercialization of Agricultural Technologies in China , Yuejin Wang, Northwest Univ of A&F Science and Technology, .
4:00PM		Developments and Challenges in Agricultural Mechanization in Northeast China , Hong Xiao, Heilongjiang Association of Agricultural Mechanization and Engineering, .
4:15PM		Research in Agricultural Resources in China and Collaborative Opportunities for Overseas Chinese Scientists and Engineers , Yonghui Yang, CAS Center for Agricultural Resources Research, .
4:30PM		AOC-China Collaborations , Zhongli Pan, USDAARS WRRRC, Albany, CA

Tuesday, July 11 – 2:30PM-5:00PM

248-ED DEVELOPMENT & TRANSFER OFSUSTAINABLE TECHNOLOGIES FOR DEVELOPING COUNTRIES

(Sponsored by Intl-601)

Moderator: Fedro S. Zazueta, Univ of Florida, Gainesville, FL

Location: B112

TIME	PAPER #	PRESENTATION TITLE
2:30PM		Introduction
2:35PM	068055	Effect of the "Amenagement en courbes de niveau" on agricultural field water balance in Mali , Kevin M. Brannan, Virginia Tech, Blacksburg, VA(K.M. Brannan, R.A. Kablan, . R.S. Yost, M.D. Doumbia, A. Yoroté, Y.Toloba, S. Sissoko, M. Vaksman)
2:50PM	068056	Development of Portable Tools with Optimum Configuration forCutting Sugarcane , Clairmont L. Clementson, , Champaign, IL(C. Clementson, A. Hansen)
3:05PM	068057	Developing Software for Technology Transferto Developing Countries , Dennis P. Dykstra, USDAForest Service, Portland, OR (D.P. Dykstra)
3:20PM	068058	Community Participation and Partnerships forRural , Brett A. Gleitsmann, Cornell University, Ithaca, NY(B. Gleitsmann, M. Kroma, T. Steenhuis)

3:55PM	068059	Design forMulti-lifecycle: A sustainable design concept applied to an agro-industrial development project in West Africa , Israel Sunday Dunmade, Mt Royal College, Calgary, AB Canada (I.S. Dunmade)
3:50PM		Break
4:00PM	068060	Use of Electronic Devices on Tractors in Turkey , Deniz Yilmaz, Univ of Akdeniz, Antalya, Turkey (D. Yilmaz, I. Akinci, T. Sevim)
4:15PM	068061	GenderIssues in Relation to Livestock Buffaloes Rearing in India , Manju NASuman, ICAR, Jhansi 284003, India (M. Suman, B. L. Suman, R.N. Dwivedi,.)
4:30PM	068062	Wind Powerin China: Social Acceptability and Development of a Domestic Manufacturing Industry , Joy H. Wang, Michigan State Univ, Haslett, MI (J. Wang)
4:45PM	068063	Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds , Manuel R. Reyes, North Carolina A&TState Univ, Greensboro, NC (M.R. Reyes et al)
5:00PM	068064	Potential of Refractance Window Technology for Value Added Processing of Fruits and Vegetables in Developing Countries , Caleb I. Nindo, Washington State Univ, Pullman, WA (C.I. Nindo, J. Tang, J.R. Powers)

POWER & MACHINERY

Wednesday, July 12 – 9:30AM-12:00PM

300-PM-3 PESTICIDE APPLICATION TECHNOLOGYFOR TREE AND BUSH CROPS

(Sponsored by PM-23/6)

Moderator: Masoud Salyani, Univ of Florida, Lake Alfred, FL

Location: C122

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061122	The Development of a Fixed Spraying System forHigh-Density Apple Trees , Andrew John Landers, Cornell Univ, Geneva, NY(A. Landers, A. Agnello, W.Shayya)
9:50AM	061123	Pollution Reduction from a Spray Recovery Sprayer , Roger Theriault, Univ Laval, Ste Foy, QC Canada (B. Panneton, B. Lacasse, M. Piché, R. Thériault)
10:05AM	061124	Influence of Air Velocity on Spray Deposition in Peach Orchards , Paolo PB Balsari, Univ of Turin-DEIAFA, Grugliasco TO, Italy (P. Balsari, M. Tamagnone, P. Marucco, D. Ghigo)
10:20AM	061125	Dynamic Air Velocity and Spray Deposition Inside Dense Nursery Crops with a Multi-jet Air-assist Sprayer , Heping Zhu, USDAARS-Application Tech Res Unit, Wooster, OH (H. Zhu, R.D. Brazee, R.C. Derksen, R.D. Fox, C.R. Krause, H.E. Ozkan, K. Losely)
10:35AM		Break
10:45AM	061126	CANCELLED
11:00AM	061127	Spray Capture Efficiencies of Ribbon and String Targets used in Orchard Applications , Masoud Salyani, Univ of Florida, Lake Alfred, FL(M. Salyani, R.D. Sweeb, M. Farooq)
11:15AM	061128	Optimizing Pesticide Spray Applications in Tree Crops , Santiago Planas, Generalitat de Catalunya Agr Dept, Barcelona, Spain (P. S. E. A. G.E. V. L. R. JR)
11:30AM	061129	Study on an Intelligent System forPrecision Pesticide Application Based on Fuzzy Control and Machine Vision , Yong Chen, Nanjing Forestry Univ, Nanjing, Peoples Republic of China – Presenter: Haitao Xiang (Y. Chen, J.Zheng, X.G. Hou,W. Guo)
11:45AM	061130	Inspection of Sprayers in use: A European Sustainable Strategy to Reduce Pesticide use in Fruit Crops , Emilio Gil Moya, Cornell University Barton Lab, Dept of Entomology, Geneva, NY(E. Gil)

Wednesday, July 12 – 9:30AM-12:00PM

301-PM-15 INNOVATIONS IN TRACTION AND TRACTOR DESIGN

(Sponsored by PM-46, PM-45, P-126)

Moderator: Thomas R. Way, USDAARS, Auburn, AL

Location: C123

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061131	Off-Road Dynamics Research at Cranfield University at Silsoe , Richard J. Godwin, National Soil Resources Institute Cranfield University at Silsoe, Bedford, United Kingdom (D. Godwin, J. Brighton, K. Blackburn, T. Richard)
10:05AM	061132	CANCELLED
10:20AM	061133	A Team Advisor's Perspective on the1/4 Scale TractorStudent Design Competition , John Bruce Solie, Oklahoma State Univ, Stillwater, OK
10:35AM		Break
10:45AM	061134	First Place Team for2006 in the1/4 Scale TractorStudent Design Competition
11:00AM	061135	Second Place Team for2006 in the1/4 Scale TractorStudent Design Competition
11:15AM	061136	Third Place Team for2006 in the1/4 Scale TractorStudent Design Competition
11:30AM	061137	A Study of an Electro-hydraulic Driven Cooling System for a Tractor , Xin-min Guo, Shandong Agricultural University, Tai'an, Shandong, NC Peoples Republic of China – Presenter: Juan Xing
11:45AM		Discussion

Wednesday, July 12 – 9:30AM-12:00PM

302-PM-16 FRUITAND VEGETABLE ENGINEERING

(Sponsored by PM-48, FPE-712)

Moderator: Thomas F. Burks, Univ of Florida, Gainesville, FL

Location: C126

TIME	PAPER #	PRESENTATION TITLE
9:30AM		Introduction
9:35AM	061138	Automatic Field Transplanters for Vegetable Crops , Lawrance N. Shaw, Univ of Florida, Gainesville, FL(L.N. Shaw)
9:50AM	061139	Fatigue and Stability Analysis of a Continuous Blade Band-type CutterforLeafy Vegetables , James L. Glancey, Univ of Delaware, Newark, DE (D. Brown, J. Glancey)
10:05AM	061140	Fruit Thinning with Precise Limb Shakers , Kabileshkumar G. Cheetancheri, University of California, Davis, Davis, CA(K. G Cheetancheri, S.-H. Lee, U.A.Rosa, J. Thompson)
10:20AM	061141	Field Evaluation of a Citrus Fruit Pickup Machine , Ganesh C. Bora, University of Florida, Lake Alfred, FL(G. Bora, R. Ehsani, R. Goodrich, G. Michaels)
10:35AM	061142	Physical Properties of Citrus in Response to Applied Forces in Robotic Harvesting , Samuel J. Flood, Univ of Florida, Gainesville, FL(S.J. Flood, T.F. Burks, A.A. Teixeira)
10:50AM		Break
11:00AM	061143	End-effectorforAutomated Citrus Harvesting , Siu Him Lee, Univ of California Davis, San Mateo, CA(B.S.H. Lee, U.A. Rosa, K. Cheetancheri)