

		APPLIED SCIENCE & ENGINEERING (ASE) EDUCATION, OUTREACH AND PROFESSIONAL DEVELOPMENT (EOPD)	ENERGY SYSTEMS (ES) ERGONOMICS, SAFETY & HEALTH (ESH) INTERNATIONAL (E-2050)	INFORMATION TECHNOLOGY, SENSORS & CONTROL SYSTEMS (ITSC)	MACHINERY SYSTEMS (MS)	NATURAL RESOURCES & ENVIRONMENTAL SYSTEMS (NRES)	PLANT, ANIMAL AND FACILITY SYSTEMS (PAFS)	PROCESSING SYSTEMS (PRS)	
MONDAY, JULY 17	9:30AM to 12 NOON	101 Teaching and Learning in ABE (EOPD) 102 Application of Precision Agricultural Data to Support Grower Participation (ASE) 103 Key Performance Indicators to Evaluate the Sustainability of Agricultural Systems (ASE)	104 Safety Considerations for Agriculture (ESH) 105 Catalytic and Thermochemical Conversion of Biomass - Torrefaction and Pyrolysis 106 Techno-Economic and Life Cycle Assessment of Bioenergy of Agricultural Systems 107 Energy Systems POSTER SESSION 108 Production Processing and Conversion of Algae	109 Spectroscopic Sensing - Part 1 110 Computational Fluid Dynamics (CFD) Applications in Agriculture 111 Advanced Computational Approaches for Solving Agricultural and Biological Engineering Problems - Part 1 112 Imaging Technologies for High Throughput Phenotyping	113 Drift Reduction Technologies / Advances in Pesticide Applications and Formulation 114 Advances in Soil-Plant-Machine Dynamics 115 Advances in Tillage, Seeding and Transplant Technology - Part 1 116 Autonomous Vehicles and Systems 117 Machinery Systems for Crop Production	118 NRES Distinguished Lecture Series - INVITED SPEAKERS	119 PAFS Distinguished Lecture Series - INVITED SPEAKERS	120 Food Process Engineering - Part 1 121 Physical and Chemical Properties of Bioresource Products, Co-Products and Waste Products 122 Bioprocessing for Value-Added Products 123 Current Trends and Innovations in Grain Drying and Storage - INVITED SPEAKERS	9:30 AM to 12 NOON
	Monday, July 17 - 11:00AM-12:30PM		Opportunities in the Food - Energy - Water Nexus - Invited Speakers and Panelists (Session 154)				Monday, July 17 - 11:00AM-12:30PM		
MONDAY, JULY 17	2:30PM to 5:00 PM	124 Innovations and Integration of Instruction	125 Value Added Chemicals and Products from Biomass 126 Ergonomics, Safety and Health POSTER SESSION 151 AOCABFE and NERCITA China Exchange Forum - Invited Speakers 152 AABFEIO - Invited Speakers 155 Equipment for Commercial Post-Harvest Processing of Biomass - INVITED SPEAKER 5:00PM 153 Perspectives on Cogeneration in the 21st Century - INVITED SPEAKERS	127 Spectroscopic Sensing - Part 2 128 Sensing for High-Throughput Phenotyping 129 Big Data and Data Analysis / Agricultural Data Standards Projects Reports (SPADE, PAIL and ADAPT) 130 Advanced Computational Approaches for Solving Agricultural and Biological Engineering Problems - Part 2	131 Crop and Soil Sensing 132 Innovations in Precision Agriculture - Part 1 133 Machinery Data and Task Optimization - Part 1	134 Coupling of Human Society and Natural Systems 135 Onsite Water Reuse 136 Precision Irrigation and Variable-Rate Irrigation 137 Sustainable Water Use in Agriculture 138 Surface Water and Groundwater Modeling 139 Manure Management - Part 1 140 Nutrient Removal, Recovery and Recycle 142 Explanatory Time Series Analysis in NRES - INVITED SPEAKERS 5:00PM 143 Natural Resources & Environmental Systems POSTER SESSION	144 PM2.5, VOC, and Other Emission Factors for the Livestock and Poultry Industry 145 Animal Response to Environments	146 Food Process Engineering - Part 2 147 Biochemical Conversion and Bioprocess Modeling 148 Advances in Bio-Based Plastics, Composites and Products 149 Physical Properties and Effects on Drying, Handling and Processing 150 Food Safety Engineering	2:30 PM to 5:00 PM
	Tuesday, July 18 - 9:30AM-12:00PM		Challenges and Opportunities for Food Processing Engineers - Invited Speakers and Panelists (Session 222)				Tuesday, July 18 - 9:30AM-12:00PM		
TUESDAY, JULY 18	9:30 AM to 12 NOON	201 Forest Based Biomass: Harvesting, Processing, Transport and Storage 253 Student Success, Prediction and Enhancement - RAP SESSION	202 Renewable Energy Resources and Technologies - Part 1 203 Energy Efficiency and use in Agricultural Facilities Process and Operations	204 Spectroscopic Imaging 205 Biosensors and Bioelectronics 206 Information Technology, Sensors and Control Systems POSTER SESSION	208 Advances in Cotton Engineering 209 Automation and Robotics for Fruit, Vegetables and Other Specialty Crops - Part 1 210 Machinery Data and Task Optimization - Part 2 211 UAV in Precision Agriculture	212 Water Energy Nexus 213 Anaerobic Digestion - Part 1 214 Climate Variability and Climate Change Impacts on Agriculture, Water and Natural Resources - Part 1 215 Microbial and Emerging Contaminants in Water/Ecological Engineering Education and Outreach 216 Modeling of Water Quality and Hydrology - Part 1 217 Advances in Irrigation Management 219 Watershed Management and Water Availability: Flood versus Drought	220 Measurement, Mitigation and Modeling of Air Pollution from Livestock and Poultry Facilities 221 Greenhouse and Nursery Technology - Innovative Systems for Controlled Environments - Part 1	8:00AM PRS Community Meeting 222 Challenges and Opportunities for Food Process Engineers- PANEL DISCUSSION	9:30 AM to 12 NOON
	2:30 PM to 5:00 PM	251 Incentivizing and Facilitating Undergraduates to take the Fundamentals of Engineering (FE) Exam	223 Fostering African-China and Indian Partnerships Toward Delivering Mutually Beneficial Solutions in Agriculture - INVITED SPEAKER 224 Renewable Energy Resources and Technologies - Part 2 225 Biomass Feedstock Supply Logistics and Modeling 5:00PM-7:30PM 250 Technical Trends and Career Opportunities in the U.S. and Korea - AKABFE Invited Presentations; Student Competition; AKABFE Business Meeting	227 3D Machine Vision for Sensing and Automation 228 Advances in Instrumentation and Controls 229 Machine Vision and Sensors for Autonomous Vehicles and Robotics 230 Robotics and Co-Robotics for Agriculture	231 Advances in Tillage, Seeding and Transplant Technology - Part 2 232 William J Chancellor Memorial Session on Soil Tillage, Traction, and Compaction - INVITED SPEAKERS 233/234 Innovations in Precision Agriculture - Part 2 / Precision Applications of Chemicals	235 Modeling of Water Quality and Hydrology - Part 2 236 Climate Variability and Climate Change Impacts on Agriculture, Water, Natural Resources - Part 2 237 BMPs and Water Quality: Conservation Systems 238 Innovative Hydrology and Water Quality Monitoring 239 Low Impact Development 240 Microirrigation Technologies 241 Advances in Drainage and Drainage Water Quality 242 Manure Liability Issues in PNW - INVITED SPEAKERS 249 Vulnerability Assessment of Land Resources for Sustainable Development - INVITED SPEAKERS 5:00PM-7:00PM 243 Finalizing Model Calibration and Validation Guidelines - RAP Session	244 Greenhouse and Nursery Technology - Innovative Systems for Controlled Environments - Part 2 245 Precision Animal Management and Environmental Control 246/247 Agri-Industrial Facility Design and Operation / Design, Analysis, Testing and Assembly of Structures 252 Brock Faulkner Memorial Session on Agricultural Air Quality - INVITED SPEAKERS	248 Processing Systems POSTER SESSION	2:30 PM to 5:00 PM
WEDNESDAY, JULY 19	7:30 AM to 10:00 AM	324 ABET Criteria 4 - INVITED SPEAKERS 9:00AM ABET Program Evaluation (PEV) Introduction 10:00AM ABET Criterion 4 Presentations and Discussion	301 Advances and Drop-in Biofuels Production - Biochemical Approach 302 Advances in Biomass Preprocessing and Pretreatment	303 Hyperspectral Imaging Applications - Part 1 304 Apps in Agricultural Applications 305 Machine Vision for Precision Agriculture 306 UAV for Sensing, Imaging and Crop Material Application - Part 1	307 Machinery Systems POSTER SESSION 308 Precision Agriculture - POSTER SESSION	310 Advances in Evapotranspiration Research 311 Agricultural BMPs: Effectiveness, Verification and Modeling 312 Applications of Ecological Engineering 313 Modeling Drainage Systems 314 Leveraging Big Data and Computational Tools for Tackling Water Resources Problems 315 Nutrient Transport and Cycling 316 Sensors for Irrigation Management 317 Manure Management- Part 2	318 Biosecurity for Animal Facilities	319 Drying, Handling and Storage of Crops - Part 1 320 Modeling and Optimization in Food Processing and Storage 321 Spectral Scattering, Fluorescence, and raman Technology for Food Quality and Safety 322 Microwave and Radio Frequency Processing 323 Post-Harvest Technology of Specialty Crops	7:30 AM to 10:00 AM
	10:15 AM to 12:15 PM	325 Applied Science and Engineering POSTER SESSION	326 Biochar Technology for Sustainable Agriculture	327 Hyperspectral Imaging Applications - Part 2 328 Dielectric Properties and Sensing Applications 329 Discrete Element Modeling (DEM) Applications in Agriculture 330 UAV for Sensing, Imaging and Crop Material Application - Part 2	331 Automation and Robotics for Fruit, Vegetables and Other Specialty Crops - Part 2.	332 Anaerobic Digestion - Part 2 333 Advances in NRCS Curve Number and Hydrologic Approaches 334 Drought Predictions, Irrigation and Drainage 335 Engineering for Urban Agriculture 336 BMPs for Agricultural Drainage 337 Stream Processes and Restoration	339 Plant, Animal and Facility Systems POSTER SESSION	340 Drying, Handling and Storage of Crops - Part 2 342 Techno-Economic Modeling of Food Co-Product, Byproduct, and Waste Streams	10:15 AM to 12:15 PM
AWARDS LUNCHEON - 12:30PM to 2:30PM		AWARDS LUNCHEON - 12:30PM to 2:30PM				AWARDS LUNCHEON - 12:30PM to 2:30PM			
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