

**SUNDAY, JULY 12**

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| 10:30 AM – 1:30 PM<br>1:30 PM – 3:30 PM<br>1:30 PM – 3:30 PM<br>1:30 PM – 3:30 PM<br>1:30 PM – 3:30 PM | Council Meetings – Zoom – By Invitation Only<br>Board of Trustees<br>Meetings Council<br>Publications Council<br>Standards Council<br>Membership Council |
|  | YPC Fun Run – 5K Run or 1 Mile Walk Between July 12-15 – See Flyer for More Info   |

**MONDAY, JULY 13**

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|                     | Sponsor Showcase & Virtual Expo Hall  |
| 8:00 AM – 9:45 AM   | General Session, Awards & Keynote Address & Panel   |
| 10:00 AM – 11:00 AM | Graduate Student/Department Head Meet & Greet Breakfast - zoom  |
| 10:00 AM – 10:30 AM | Awards Showcase – ASABE Awards  |
|                     | <p>Full Virtual Sessions Available to Registered Attendees – Available after 10:00 AM on Monday</p> <p>Technical Sessions – On Demand</p> <ul style="list-style-type: none"> <li>• <u>ASE - Applied Science &amp; Engineering</u> <ul style="list-style-type: none"> <li>- Wood-Based Carbon Materials Production and Applications</li> </ul> </li> <li>• <u>ES - Energy Systems</u> <ul style="list-style-type: none"> <li>- Advanced and Drop-In Biofuels Production-Biochemical Approach</li> <li>- Advances in Biomass Preprocessing and Pretreatment</li> <li>- Algae Production and Conversion &amp; Value-Added Chemicals</li> <li>- Biomass Bulk Flow Properties Measurement, Modeling, and Application</li> <li>- Biomass Feedstock Supply Logistics and Modeling</li> <li>- Renewable Energy Resources and Technologies</li> <li>- Solar Energy, Energy Utilization and Horticultural Lighting Agricultural Facilities</li> <li>- Techno-Economic and Life Cycle Assessment of Biomass Conversion</li> <li>- Thermochemical Conversions of Biomass</li> <li>- Value-Added Chemicals and Lignin Valorization</li> </ul> </li> <li>• <u>ESH - Ergonomics, Safety &amp; Health</u> <ul style="list-style-type: none"> <li>- Innovations and Strategies for Agricultural Safety and Health</li> <li>- Strategies and Considerations for Safety Programming in Agriculture</li> </ul> </li> <li>• <u>EOPD - Education, Outreach, &amp; Professional Development</u> <ul style="list-style-type: none"> <li>- Innovations and Integration of Instruction</li> <li>- Success and Failure in Teaching &amp; Learning</li> </ul> </li> <li>• <u>ITSC - Information Technology, Sensors &amp; Control Systems</u> <ul style="list-style-type: none"> <li>- 3D Machine Vision for Sensing and Automation</li> <li>- Advanced Computational Approaches for Solving Agricultural and Biological Engineering Problems</li> <li>- Big Data and Data Science for Precision Agriculture</li> <li>- Biosensors and Bioelectronics in Food and Agriculture</li> <li>- Computational Fluid Dynamics (CFD) Applications in Agriculture</li> <li>- Discrete Element Modelling (DEM) Applications in Agriculture</li> <li>- Emerging Technologies for Biological Sensing Application in Agriculture</li> <li>- Hyperspectral Imaging Advances &amp; Applications</li> <li>- Imaging Technologies for High Throughput Phenotyping</li> <li>- Machine Vision Applications in Agriculture and Food</li> <li>- Machine Vision Applications in Vegetables and Fruits</li> <li>- Machine Vision for Agricultural Robotics</li> <li>- Robotics and Co-Robotics for Agriculture</li> <li>- Sensing Applications using Unmanned Aerial Systems</li> <li>- Spectroscopic Sensing and Imaging of Soil, Plant and Agriculture Produce</li> <li>- Spectroscopic Sensing and Imaging: Aerial and Ground Application Use Cases</li> <li>- Tools and Technologies for High Throughput Phenotyping</li> <li>- Unmanned Aerial Systems for Crop Imaging Applications</li> </ul> </li> <li>• <u>MS - Machinery Systems</u></li> </ul> |

- Advances in Soil-Plant-Machine Dynamics and Systems Simulation
- Automated Agricultural Field Machinery Data Collection, Analysis, and Utilization
- Automated Agricultural Systems
- Automation Systems for Agricultural Field Machinery
- Automation, Robotics, and AI for Vegetable, Fruit and Other Specialty Crops
- Cotton Engineering
- Crop and Soil Sensing
- General Topics in Machinery Systems
- Innovations Applied to Chemical and Fertilizer Application
- Innovations in Precision Agriculture
- Machinery Data and Task Optimization-Part 1
- Machinery Data and Task Optimization-Part 2
- Machinery Data and Task Optimization-Part 3
- Pesticide and Fertilizer Applications Technology, Formulations, and Environmental Effects
- Precision Agricultural Utilization in Chemical and Fertilizer Applications
- Precision Application of Chemicals and Fertilizers
- UAVs in Precision Agriculture

- NRES - Natural Resources & Environmental Systems

- Advanced Watershed Analytics and Applications of Machine Learning in Water Resources
- Advances in Agrohydrology: Challenges and Opportunities
- Advances in Drainage Design, Monitoring, and Modeling
- Advances in Ecological Engineering of Animal Production Systems
- Advances in Irrigation Management in the Context of Climate Change and Constrained Water Supply
- Advances in Irrigation Systems Modeling
- Anaerobic Digestion
- Barriers and Opportunities of Manure Management
- Bridging Social and Physical Sciences to Achieve Water, Energy, and Food SDGs-HYBRID
- Conservation Practice Implementation
- Constructed Treatment Wetlands in Agroecosystems-INVITED
- Edge of Field Practices for Nutrient Loss Reduction in Drained Landscapes
- Emerging Contaminants, Pathogens, and Antibiotic Resistance
- Erosion and Water Quality in Streams and Wetlands-HYBRID
- Erosion Control Research and Case Studies
- Evapotranspiration Measurement and Modeling-HYBRID
- Extreme Climatic Events: Science, Impact Analysis and Management of Natural Resources-HYBRID
- Green Infrastructure Solutions and Ecological Engineering Applications-HYBRID
- Hydrology and Climate Data: Challenges and Opportunities
- Innovative Eco-Hydrologic and Hydraulic Monitoring, Assessments and Computations
- Long-Term Effectiveness of BMPs on Water Quality: Opportunities and Challenges-HYBRID
- Managing Manure and Agricultural Byproducts for Sustainability
- Manure Treatment and Management Systems
- Modeling of Hydrology and Water Quality in Surface, Sub-Surface and Groundwater Systems
- Nutrient Removal, Recovery, and Recycle
- Nutrient Transport and Cycling: Measurement and Modeling
- Onsite Wastewater Treatment and Reuse – Research, Demonstration, and Education Activities
- Real-Time Systems to Manage Natural Resources and Environmental Systems
- Sustainability Metrics – Concept, Evaluation, and Advances
- Technological Developments in Irrigation Research

- PAFS - Plant, Animal, & Facility Systems

- Air Emission from Livestock and Poultry Production
- Animal Response to Environment
- Biosecurity for Livestock and Poultry Production Systems
- Emerging Information Systems for Animal Production Systems
- Indoor Plants Environments, Greenhouse and Nursery Technology
- Measurement, Mitigation and Modeling of Air Pollution from Livestock and Poultry Facilities
- Precision Animal Management
- Sustainable Building Technology

- PRS - Processing Systems

- Artificial Intelligence and Measurement for Biological Materials Processing
- Biochemical Conversion and Bioprocess Modeling
- Drying, Handling and Storage of Grain Crops-Storage
- Food Process Engineering-Food Quality Evaluation and Control
- Food Process Engineering-Nonthermal Technologies
- Food Process Engineering-Novel Processing Techniques

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| <p>4:00 PM – 5:00 PM<br/>5:00 PM – 6:00 PM</p>  | <ul style="list-style-type: none"> <li>- Food Process Engineering-Production, Drying, and Storage</li> <li>- Management and/or Utilization Technologies for Food and Organic Wastes</li> <li>- Modeling Crop and Feed Drying, Handling and Storage</li> <li>- Physical and Chemical Properties of Food Products for Processing Handling</li> <li>- Physical and Chemical Properties of Crops &amp; Biomaterials for Processing Handling</li> </ul> <p>Poster Sessions – On Demand</p> <ul style="list-style-type: none"> <li>• ASE - Applied Science &amp; Engineering</li> <li>• E-2050 - Global Engagement</li> <li>• ES - Energy Systems</li> <li>• ESH - Ergonomics, Safety &amp; Health</li> <li>• EOPD - Education, Outreach, &amp; Professional Development</li> <li>• ITSC - Information Technology, Sensors &amp; Control Systems</li> <li>• MS - Machinery Systems</li> <li>• NRES - Natural Resources &amp; Environmental Systems</li> <li>• PAFS - Plant, Animal, &amp; Facility Systems</li> <li>• PRS - Processing Systems</li> </ul> <p>Special Meetings</p> <ul style="list-style-type: none"> <li>• ABET – On Demand</li> <li>• Alpha Epsilon Business Meeting</li> <li>• Women’s Speed Networking</li> </ul> |
| <p>12:00 PM – 2:00 PM</p>   | <p>Career Fair – Live Chat Availability with Job Postings</p>  |
|   | <p>Committee Meetings - Zoom</p> <ul style="list-style-type: none"> <li>• See Schedule Online</li> </ul>   |
| <p>12:00 PM – 2:30 PM</p>   | <p>Competitions - Zoom</p> <ul style="list-style-type: none"> <li>• Boyd-Scott Graduate Research Award</li> </ul>  |
| <p>12:00 PM – 2:00 PM</p>   | <p>Continuing Professional Development - Zoom</p> <ul style="list-style-type: none"> <li>• CPD4 - Increasing diversity in our profession: Why does it matter and what can we do about it as educators?</li> </ul>  |
| <p>11:00 AM – 12:00 PM<br/><br/>12:00 PM – 1:00 PM<br/>1:00 PM – 2:00 PM<br/>2:00 PM – 3:00 PM<br/>3:00 PM – 4:00 PM<br/><br/>4:00 PM – 5:00 PM</p> | <p>Live “Virtual” Technical Sessions – will be On Demand After the Live Presentation</p> <ul style="list-style-type: none"> <li>• Session 1 - Energy Systems – Overview Achievements and Improvements (e.g. Efficiency, Cost) of Current Renewable Energy Resources and Technologies including Solar, Wind, Biomass, Hydro, Etc.</li> <li>• Session 2 - NRES Community Wide Update</li> <li>• Session 3 - Machinery Systems</li> <li>• Session 4 - Plant, Animal, &amp; Facility Systems Community Showcase</li> <li>• Session 5 - Education, Outreach, &amp; Professional Development – Establishing and Maintaining Ethics in the Engineering Workplace</li> <li>• Session 6 - E-2050 – Modernizing African Agriculture</li> </ul>   |
| <p>8:00 PM – 9:00 PM<br/>8:00 PM – 9:00 PM<br/>7:00 PM – 8:00 PM</p>  | <p>Socials &amp; Receptions – Zoom</p> <ul style="list-style-type: none"> <li>• University of Illinois Alumni &amp; Friends Reception</li> <li>• BAE – Virginia Tech</li> <li>• YPC Social</li> </ul>  |

**TUESDAY, JULY 14**

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|  | <p>Sponsor Showcase &amp; Virtual Expo Hall</p>   |
|  | <p>Full Virtual Meeting Available to Registered Attendees</p> <p>Technical Sessions – On Demand</p> <ul style="list-style-type: none"> <li>• ASE - Applied Science &amp; Engineering</li> <li>• E-2050 - Global Engagement</li> <li>• ES - Energy Systems</li> <li>• ESH - Ergonomics, Safety &amp; Health</li> <li>• EOPD - Education, Outreach, &amp; Professional Development</li> </ul> |

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| <p>On Demand<br/> 9:00 AM – 10:00 AM<br/> 12:00 PM – 1:30 PM<br/> 1:00 PM – 1:45 PM<br/> 2:00 PM – 3:00 PM<br/> 5:30 PM – 6:30 PM<br/> 7:00 PM<br/> 7:00 PM</p> | <ul style="list-style-type: none"> <li>• ITSC - Information Technology, Sensors &amp; Control Systems</li> <li>• MS - Machinery Systems</li> <li>• NRES - Natural Resources &amp; Environmental Systems</li> <li>• PAFS - Plant, Animal, &amp; Facility Systems</li> <li>• PRS - Processing Systems</li> </ul> <p>Poster Sessions – On Demand</p> <ul style="list-style-type: none"> <li>• ASE - Applied Science &amp; Engineering</li> <li>• E-2050 - Global Engagement</li> <li>• ES - Energy Systems</li> <li>• ESH - Ergonomics, Safety &amp; Health</li> <li>• EOPD - Education, Outreach, &amp; Professional Development</li> <li>• ITSC - Information Technology, Sensors &amp; Control Systems</li> <li>• MS - Machinery Systems</li> <li>• NRES - Natural Resources &amp; Environmental Systems</li> <li>• PAFS - Plant, Animal, &amp; Facility Systems</li> <li>• PRS - Processing Systems</li> </ul> <p>Special Meetings</p> <ul style="list-style-type: none"> <li>• ABET</li> <li>• FE/PE Information Session</li> <li>• African Network Group Business Meeting</li> <li>• ASABE Business Meeting – Zoom</li> <li>• ASABE Foundation Board of Trustees – Zoom</li> <li>• YPC Business Meeting</li> <li>• Student Branch Business Meeting</li> <li>• AKABFE (Korean) Business Meeting</li> </ul> |
|   | <p>Committee Meetings - Zoom</p> <ul style="list-style-type: none"> <li>• See Schedule Online</li> </ul>   |
| <p>8:00 AM – 9:00 AM<br/> 9:30 AM – 10:30 AM<br/> 11:00 AM – 12:00 PM<br/> 12:15 PM – 2:15 PM<br/> 12:30 PM – 2:30 PM</p>                                       | <p>Competitions – Zoom</p> <ul style="list-style-type: none"> <li>• K.K. Barnes Student Paper Competition</li> <li>• Gunlogson Open</li> <li>• AGCO National Student Design Competition</li> <li>• Ethics in Engineering Essay and Video Presentation (P-128)</li> <li>• Quarter Scale Tractor Student Design Competition</li> </ul>   |
| <p>1:00 PM – 3:00 PM</p>  | <p>Continuing Professional Development – Zoom</p> <ul style="list-style-type: none"> <li>• CPD5 - Agricultural and Biological Engineering Data Handling Using R</li> </ul>   |
| <p>9:00 AM – 10:00 AM<br/> 10:00 AM – 11:00 AM</p>  | <p>Live “Virtual” Technical Sessions – will be On Demand After the Live Presentation</p> <ul style="list-style-type: none"> <li>• Session 1 - Processing Systems</li> <li>• Session 2 - Information Technology, Sensors &amp; Control Systems – Award Presentations</li> </ul>   |
| <p>11:00 AM – 11:30 AM</p>  | <p>Awards Showcase – Fellows Awards</p>  |
| <p>12:00 PM – 1:00 PM</p>   | <p>Foundation Lunch – sponsored by CNH</p>   |
| <p>12:00 PM – 1:00 PM<br/> 1:00 PM – 2:00 PM<br/> <br/> 2:00 PM – 3:00 PM<br/> 3:00 PM – 4:00 PM<br/> 4:00 PM – 5:00 PM</p>                                     | <p>Live “Virtual” Technical Sessions – will be On Demand After the Live Presentation</p> <ul style="list-style-type: none"> <li>• Session 3 - Plant, Animal, &amp; Facility Systems Community Showcase</li> <li>• Session 4 - Education, Outreach, &amp; Professional Development – Becoming an Extension Engineer: How and Why the Profession Matters</li> <li>• Session 5 - Processing Systems</li> <li>• Session 6 - Applied Science &amp; Engineering Community Showcase</li> <li>• Session 7- Natural Resources &amp; Environmental Systems – NRES Career Paths-Research, Teaching, Extension, Government, and Industry</li> </ul>  |

WEDNESDAY, JULY 15

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|  | <p>Sponsor Showcase &amp; Virtual Expo Hall</p> |
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| <p>3:00 PM<br/>12:00 PM – 1:00 PM</p>   | <p>Full Virtual Meeting Available to Registered Attendees</p> <p>Technical Sessions – On Demand</p> <ul style="list-style-type: none"> <li>• ASE - Applied Science &amp; Engineering</li> <li>• E-2050 - Global Engagement</li> <li>• ES - Energy Systems</li> <li>• ESH - Ergonomics, Safety &amp; Health</li> <li>• EOPD - Education, Outreach, &amp; Professional Development</li> <li>• ITSC - Information Technology, Sensors &amp; Control Systems</li> <li>• MS - Machinery Systems</li> <li>• NRES - Natural Resources &amp; Environmental Systems</li> <li>• PAFS - Plant, Animal, &amp; Facility Systems</li> <li>• PRS - Processing Systems</li> </ul> <p>Poster Sessions – On Demand</p> <ul style="list-style-type: none"> <li>• ASE - Applied Science &amp; Engineering</li> <li>• E-2050 - Global Engagement</li> <li>• ES - Energy Systems</li> <li>• ESH - Ergonomics, Safety &amp; Health</li> <li>• EOPD - Education, Outreach, &amp; Professional Development</li> <li>• ITSC - Information Technology, Sensors &amp; Control Systems</li> <li>• MS - Machinery Systems</li> <li>• NRES - Natural Resources &amp; Environmental Systems</li> <li>• PAFS - Plant, Animal, &amp; Facility Systems</li> <li>• PRS - Processing Systems</li> </ul> <p>Special Meetings</p> <ul style="list-style-type: none"> <li>• ABET – Live Q&amp;A on Zoom</li> <li>• Grad Student Career Development Panel Lunch &amp; Learn</li> </ul> |
| <p>9:00 AM – 10:00 AM<br/>10:00 AM – 11:00 AM</p>   | <p>Live “Virtual” Technical Sessions – will be On Demand After the Live Presentation</p> <ul style="list-style-type: none"> <li>• Session 1 - Information Technology, Sensors &amp; Control Systems – Instructional Case Studies with Data Sets for YOUR Instruction</li> <li>• Session 2 - (session 1 continued)</li> </ul>  |
| <p>11:00 AM – 11:30 AM</p>  | <p>Awards Showcase – Student Awards</p>   |
| <p>12:00 PM – 1:00 PM<br/>1:00 PM – 2:00 PM<br/>2:00 PM – 3:00 PM<br/>3:00 PM – 4:00 PM<br/>4:00 PM – 5:00 PM</p> | <p>Live “Virtual” Technical Sessions – will be On Demand After the Live Presentation</p> <ul style="list-style-type: none"> <li>• Session 3 - Natural Resources &amp; Environmental Systems Distinguished Lecture Series-Emerging Technological Innovations in Water Resources Engineering</li> <li>• Session 4 - (session 3 continued)</li> <li>• Session 5 - Energy Systems – Biomass Bulk Flow Properties Measurement, Modeling and Application</li> <li>• Session 6 - Machinery Systems</li> <li>• Session 7 - Machinery Systems</li> </ul>   |
|   | <p>Committee Meetings – Zoom</p> <ul style="list-style-type: none"> <li>• See Schedule Online</li> </ul>  |

**THURSDAY, JULY 16**

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| <p>10:30 AM - 3:00 PM<br/>8:00 AM – 10:00 AM<br/>8:00 AM – 10:00 AM<br/>8:00 AM – 10:00 AM<br/>8:00 AM – 10:00 AM</p> | <p>Council Meetings – Zoom – By Invitation Only</p> <p>Board of Trustees<br/>Meetings Council<br/>Publications Council<br/>Standards Council<br/>Membership Council</p> |
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