ASABE Arkansas State Sectional meeting, Friday October 4, 2024

Venue: the Verizon Ballroom of the University of Arkansas student union, 435 Garland Ave, Fayetteville, AR 72701

8:00 **Continental breakfast and networking**

8:30 – 9:00 AM **Voices from the leadership**

Terry Howell (Department Head, Biological & Agricultural Engineering, University of Arkansas, Fayetteville)

Brian Haggard (Professor, Biological & Agricultural Engineering, University of Arkansas, Fayetteville, and ASABE state section president),

Sherry Hunt (Research Leader, Agroclimate and Hydraulics Research Unit, USDA ARS, Stillwater, OK and president-elect, ASABE)

9:00 – 9:50 AM **Voices from the field**

9:00 – 9:16

Tim Burcham, Engineer, Director at Northeast Rice Research and Extension Center University of Arkansas System Division of Agriculture

9:17-9:33

Elle Henson, Ph.D. student, University of Texas, Austin: Started off with a BENG! Modeling river systems across the U.S. with a recent Arkansas graduate

9:34-9:50

Michele Reba, Scientist, USDA ARS: Delta Water Management Research Unit: Agricultural water resources research in action

10:00 – 10:50 AM **Voices from the faculty**

10:00 – 10:16

Rebecca Muenich, Associate Professor, University of Arkansas, Fayetteville: Changing the paradigm of watershed-scale water quality modeling in the age of machine learning

10:17-10:33

Ajoy Saha, Assistant Professor, University of Arkansas, Pine Bluff: Climate-smart agricultural water management for sustainable agriculture

10:34-10:50

Jafaar Abdulridha, Assistant Professor, University of Arkansas, Pine Bluff: Apply Fewer Chemical Applications in Agriculture to Get Healthy Life – Precision Agriculture Tech

11:00 AM – 12:00 PM: **Voices from the future**

Student poster presentations and social

12:00 PM – 1:15 PM: **Lunch buffet & (12:50 pm) Business Meeting**

For business meeting agenda, 2023 minutes, and financial report, please use QR Code:

1:30 PM – 3:30 PM **Voices from the brook**

A guided tour of restoration impacts at the Mullins Branch Creek

ASABE Research and Design Poster Presentations

1. UAV-Assisted Blackberry Flower Quantification and Vegetation Coverage Assessment. **Akwasi Tagoe**, Cengiz Koparan, Aurelie Poncet, Dongyi Wang, Donald Johnson, and Margaret Worthington, University of Arkansas.
2. Quantification of Crop Coverage and Weed Pressure for UAV Computer Vision. **Avonelle Lindon**, Akwasi Tagoe, and Cengiz Koparan, University of Arkansas.
3. UAV Sensor Integration for *In-Situ* water Quality Measurement in Lakes. **Tyler Young**, Cengiz Koparan, Thi Hoang Ngan Le, Ben Runkle, Becca Muenich, and Donald Johnson. University of Arkansas.
4. Leveraging Machine Learning for Predictive Modeling of USDA Beef Grading through Marbling Assessment. **Samuel Vinson**, Bucky Gwartney, Willy Horne, and Dongyi Wang. University of Arkansas.
5. Automated Environmental Swabbing: A Robotic Solution for Enhancing Food Safety in Poultry Processing. **Siavash Mahmoudi**, Pouya Sohrabipour, and Dongyi Wang. University of Arkansas.
6. Synthetic Data Augmentation for Chicken Carcass Instance Segmentation with Mask R-CNN. **Yihong Feng**, Chaitanya Pallerla, Pouya Sohrabipour, Siavash Mahmoudi, Amirreza Davar, Ramesh Bahadur Bist, and Dongyi Wang. University of Arkansas.
7. Diffusion Policy-Based Imitation Learning for Gripping and Manipulation of Delicate and Irregularly Shaped Objects with a Customized Dual-Fingered End Effector. **Amirreza Davar**, Xu Zhengtong, and Dongyi Wang. University of Arkansas.
8. Automatic Labeling of Large-Scale Poultry Image Datasets Using Inductive Semi-Supervised Auto-Labeling Models. **Ramesh Bahadur Bist**, Lilong Chai, Shawna Weimer, Chantel Pennicott, Xiao Yang, Siavash Mahmoudi, Chaitanya Pallerla, Yihong Feng, Amirreza Davar, Pouya Sohrabipour, Jeyam Subbiah, and Dongyi Wang. University of Arkansas.
9. Ultra-High Sensitivity Wireless Piezoelectric Biosensor for Pathogen Detection. **Yang Tian**, Terry Howell, and Dongyi Wang. University of Arkansas.
10. Assessing the Potential Role that Integrated Agricultural-Reservoir Systems Have on Water Quality. **Danna Villarreal**, Ting Liu, Qi Deng, Todd Steissberg, John Sabo and Rebecca L. Muenich. University of Arkansas.
11. Understanding the Role of Environmental Drivers in Determining Methane Flux in Forested Wetlands. **Kabi Raj Khatiwada**, Rongyun Tang, Bassil El Masri, J.B. Moon, Gary Stinchcomb, and Benjamin Runkle. University of Arkansas.
12. Fish Cultivation in Fallow Season Rice Fields: Effects on CH_4 Emissions. **Sam R. Carroll**, Beatriz Moreno-Garcia, Riasad Bin Mahbub, Michele L. Reba, and Benjamin R.K. Runkle. University of Arkansas.
13. Estimation of Rice Photosynthesis and Canopy Traits with Ground-based Hyperspectral Sensing. **Will Richardson**, Kaiyu Guan, Michele Reba, and Benjamin R.K. Runkle. University of Arkansas.

14. Inferring Spatial Information of Rice Growing Season Length and Gross Primary Productivity from Space and Site-scale Instruments. **Riasad Bin Mahbub**, Michele L. Reba, and Benjamin R.K. Runkle. University of Arkansas.
15. Methane Emissions Dynamics in Arkansas Rice Production: Effects of Different Water Management Practices and Soil Texture Gradient. **Taiwo Osoko**, Beatriz Moreno-García, Arlene Adviento-Borbe, Michele Reba, and Benjamin Runkle. University of Arkansas.
16. Quantifying the Animal Count Using the Structural Attributes of the Animal Feeding Operations (AFOs). **Barira Rashid**, Aureliane Tchamdja, Arghajeet Saha, and Rebecca Muenich. University of Arkansas.
17. Logistics of Irrigation Pump Shut Off and Well-switching for a Groundwater-based Irrigation System: A Case Study of a 43-well Maize-rice-soybean Farm in Northeast Arkansas. **Joseph H. Massey**, Gustavo B. Lima, José H.N. Flores, Lessandro C. Faria, and Michele L. Reba. USDA ARS.
18. Hydrogel Microspheres from Cellulose Nanocrystals for Precision Delivery of Probiotics in the Gastrointestinal Tract. **Winfred Yeboah**, Nazim Uddin Emon, Akrip Jati, Joseph Batta-Mpouma, Jaspreet Kaur, Amiya M. Turner, and Jin-Woo Kim. University of Arkansas.
19. In Vitro Digestion of Starch and Protein Based Nanoporous Aerogels Generated from Defatted Rice Bran via Supercritical Carbon Dioxide Technology. **Sumanjot Kaur** and Ali Ubeyitogullari. University of Arkansas
20. Phosphorus Concentrations Reduced by Watershed Management in the Controversial, but Valued Illinois River, Arkansas and Oklahoma, USA. **Arkansas Water Resources Center**.