

## 2020 Superior Paper Award Winners Presented in 2021

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### ESH - Ergonomics, Safety, & Health

#### [Body Orientation and Points of Contact during Laboratory-Based Machinery Egress: Investigating Adherence to Safety Guidelines](#)

*D. C. Kingston, B. Bashiri, A. Omoniyi, C. M. Trask*

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### ITSC – Information Technology, Sensors, & Control System

#### [A Portable Biosensing Device with Magnetic Separation and Quantum Dot Bead Labeling for Simple, Rapid, and Quantitative Detection of Salmonella Typhimurium](#)

*X. Xi, R. Wang, P. Yao, L. Yao, S. Tung, Y. Li*

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#### [Evaluation of Two Recurrent Neural Network Methods for Prediction of Irrigation Rate and Timing](#)

*A. F. Jiménez, B. V. Ortiz, L. Bondesan, G. Morata, D. Damianidis*

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## **MS – Machinery Systems**

### **[Quantifying Spray Deposition from a UAV Configured for Spot Spray Applications to Individual Plants](#)**

*B. Richardson, C. Rolando, M. Kimberley*

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### **[Development of Prediction Model for Axle Torque of Agricultural Tractors](#)**

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### **[Hardware and Software Design for Premixing In-Line Injection System Attached to Variable-Rate Orchard Sprayer](#)**

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## **NRES – Natural Resources & Environmental Systems**

### **[Impact of Riparian and Stream Restoration on Denitrification in Geomorphic Features of Agricultural Streams](#)**

*M. K. Welsh, S. K. McMillan, P. G. Vidon*

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### **[Assessing the Climate Change Impacts on Grain Sorghum Yield and Irrigation Water Use under Full and Deficit Irrigation Strategies](#)**

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### **[Potential Suitability of Subirrigation for Field Crops in the U.S. Midwest](#)**

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### **[Evaluation of Cotton Establishment Strategies Using Subsurface Drip Irrigation \(SDI\) in the Southern High Plains of Texas](#)**

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### **Innovative Extension Methods in the U.S. to Promote Irrigation Water Management**

*D. R. Rudnick, M. Stockton, S. Taghvaeian, J. Warren, M. D. Dukes, A. Kremen, C. G. Henry, J. Aguilar, B. Ortiz, A. Andales, C. A. Burr, X. Qiao, W. Liang, S. Walthour, S. H. Amosson*

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## **PAFS - Plant, Animal, & Facility Systems**

### **Effects of Elevated Platform and Robotic Vehicle on Broiler Production, Welfare, and Housing Environment**

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## **PRS - Processing Systems**

### **Characterization of Zein Extracted from Wet Distillers Grains**

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### **Deterrence of Aspergillus Flavus Regrowth and Aflatoxin Accumulation on Shelled Corn Using Infrared Heat Treatments**

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