

Boyd-Scott Graduate Research Award Winners Since 2004

2017

PhD Category

1st Place

Joe Sagues, University of Florida, *Production of Phenolic Monomers and Free Sugars from Sweet Sorghum Bagasse via Fenton Modification and Supercritical Ethanol*

2nd Place

Abhisesh Silwal, Washington State University, *Design, Integration, and Field Evaluation of a Robotic Apple Harvester*

3rd Place

Nuwan K. Wijewardane, University of Nebraska - Lincoln, *An Integrated VNIR Penetrometer System for High Resolution Vertical Soil Sensing*

MS Category

1st Place

Ryan McGehee, Auburn University, *Benchmarking Reliable Erosion Indices from Quarter-hour Station Data for Climate Studies in the Southeastern United States*

2nd Place

Katlyn DeVoe, Iowa State University, *Commissioning of a Segmented Wand for Evaluating Airflow Performance of Fans in Livestock and Poultry Housing*

3rd Place

Chongyuan Zhang, Washington State University, *Development of Automated High-Throughput Phenotyping System of Controlled Environment Studies*

2016

PhD Category

1st Place

Kevin Moore, Oklahoma State University
Grain Entrapment Pressure on the Torso – Can you Breathe While Buried in Grain

2nd Place

Suraj Amatya, Washington State University
Detection of Cherry Tree Branches for Automated Sweet-Cherry Harvesting

3rd Place

Rajendra Sishodia, University of Florida
Effects and Management of Future Irrigation Withdrawals in a Semi-Arid South Indian Watershed

MS Category**1st Place**

Devin Mangus, Kansas State University

Development of High Speed Camera Hardware and Software Package to Evaluate Real-Time Electric Seed Meter Accuracy of a Variable Rate Planter

2nd Place

Bjorn Sellner, South Dakota State University

Evaluating Filter Materials for Phosphate Adsorption from Agricultural Subsurface Drainage

3rd Place

Whitney Lisenbee, Oklahoma State University

Comparison of Field Jet Erosion Tests and WEPP-Predicted Erodibility Parameters for Varying Land Cover

2015**PhD Category****1st Place**

Hongchao Zhang, Washington State University

Quality Changes in High Barrier Polymeric Packages – A Shelf-Life Study for Microwave Assisted

2nd Place

Jessica Slutsky, The Ohio State University

Analysis of Natural Rubber Latex Thin Films

3rd Place

Vivek Sharma, University of Nebraska

Impact of Scale/Resolution on SEBS-Derived Evapotranspiration from Landsat and Modis Images

MS Category**1st Place**

Nathan Holt, University of Florida

Transforming Plasticulture Systems through Futuristic Bed Geometry Design: The Next Frontier of Environmental and Economic Assisted Sustainability

2nd Place

Rui Xu, University of Georgia

Development of the Second Generation Berry Impact Recording Device to Measure Mechanical Damage on Berry Fruit Packing Lines

3rd Place

Devon Mangus, Kansas State University

Deploying a Thermal Infrared Imaging System for High Spatial and Temporal Resolution Crop Water Stress Monitoring of Corn Within a Greenhouse

2014

PhD Category

1st Place

Fuqing Xu, Ohio State University

A Mass Diffusion-Based Interpretation of the Effect of Total Solids Content on Solid-State Anaerobic Digestion of Cellulosic Biomass

2nd Place

Krishnamoorthy Pitchai, University of Nebraska

Simulation of Microwave Heating of a Frozen Heterogeneous Meal Rotating on a Turntable

3rd Place

Jingjin Zhang, Washington State University

Mapping Interception of Photosynthetically Active Radiation in Sweet Cherry Orchards

MS Category

1st Place

Kristin Perano, Cornell University

Mitigating Heat Stress in Dairy Cattle via Conductive Cooling

2nd Place

Wan-Ting Chen, University of Illinois

Hydrothermal Liquefaction of Mixed-culture Algal Biomass from Wastewater Treatment System into Bio-crude Oil

3rd Place

Cynthuja Partheeban, South Dakota State University

Demonstrating the Nitrogen-removal Effectiveness of Denitrifying Bioreactors for Improved Drainage Water Management in South Dakota

2013

PhD Category

1st Place

Liangcheng Yang, University of Illinois-Champaign

Moisture Effects on Gas-Phase Biofilter Ammonia Removal Efficiency, Nitrous Oxide Generation and Microbial Communities

2nd Place

Abdul-Sahib Al-Madhhachi, Oklahoma State University

A Mechanistic Detachment Rate Model to Predict Soil Erodibility Due to Fluvial and Seepage Forces

3rd Place

Hongjian Lin, University of Minnesota

Modeling Single-Chamber Microbial Fuel Cells Based on Freter Equations

MS Category

1st Place

Tharun Kumar Konduru, University of Georgia

Development of Metal Oxide Semiconductor Based Customized Gas Sensor Array for Onion Post harvest Disease Detection

2nd Place

Rachel Felice, Oklahoma State University

Laboratory Soil Piping and Internal Erosion Experiments: Evaluation of a Deterministic Soil Piping Model

3rd Place

Gurdeep Singh, University of Arkansas

A Novel Simulation Approach for Biofuel Crop Production on Marginal Lands

2012

MS Category

1st Place

Taber Midgley, Oklahoma State University

Streambank Erosion and Instability Induced By Seepage: In-Situ Constant Head Seepage Experiments

2nd Place

Di Hu., North Carolina State University

Temporal and Spatial Variations of Bioaerosol Concentrations Emitted From an Egg Production Farm in Southeast U.S.

3rd Place

Manqing Ying, North Carolina State University

Measurements and Visualization of the Fluid Field of the Plume from an Animal Housing Ventilation Fan

PhD Category

1st Place

Laura Hill, Texas A&M University

Development of Beta-Cyclodextrin Inclusion Complexes Containing Essential Oils (Trans-Cinnamaldehyde, Eugenol, Cinnamon Bark and Clove Bud Extracts) Singly and in Combination for Antimicrobial Delivery Applications

2nd Place

Abdul-Sahib Al-Madhachi, Oklahoma State University

Deriving Parameters of a Fundamental Detachment Model for Cohesive Soils from Flume and Jet Erosion Tests

3rd Place

Ziyu Wang, North Carolina State University

Alkaline Pretreatment of Genetically-Engineered Switchgrass for Improved Carbohydrates Conversion Efficiency

2011

M.S. Category

1st

Taber Midgley - Oklahoma State University

Evaluation of the Bank Stability and Toe Erosion Model (BSTEM) for Predicting Lateral Streambank Retreat on Ozark Streams

2nd

Weilin Wang - University of Georgia

Shortwave Infrared Hyperspectral Imaging for Detecting Sour Skin (Burkholderia Cepacia) Infected Onions

3rd

Pengcheng Yu - University of Georgia

Quantitative Evaluation of a Blueberry Mechanical Harvester Using a Miniature Instrumented Sphere

PhD Category

1st

Xuan Li - University of California-Davis

Three Dimensional Geometric Modeling of Processing-Tomatoes

2nd

Derek Heeren - Oklahoma State University

Stage-Dependent Storage of Phosphorus in Alluvial Floodplains

3rd

Rabin Bhattarai - University of Illinois-Urbana

Development of a Process-Based Model to Understand Fate and Transport of Cryptosporidium Parvum in the Environment

2010

M.S. Category

Place Recipient, School and Project

1st

Haibo Huang – University of Arkansas

"Magnetic Nanoparticles Based Magnetophoresis for Efficient Separation of

- Foodborne Pathogens"
 Xiguang Chen – University of California - Davis
- 2nd "Anaerobic Digestion of Food Wastes for Biogas Energy Production"
- Tao Lin – University of Illinois - Urbana
- 3rd "Engineering Economic Analysis for the Sustainability of Quick Germ/Quick Fiber Modified Dry Grind Ethanol Fractionation Process"

PhD Category

Place Recipient, School and Project

- 1st Shawn E. Rosenquist – Virginia Tech
 "Facilitated Iron Reduction as a Means of Rejuvenating Phosphorus Removal Performance of Filtration Substrates "
- 2nd Sunil K. Mathanker – Oklahoma State University
 "Local Adaptive Thresholding of Pecan X-ray Images: Reverse Water Flow Method"
- 3rd Haiyan Cen – Michigan State University
 "Optimization of the Hyperspectral Imaging–Based Spatially-Resolved System for Measuring the Optical Properties of Biological Materials"

2009

M.S. Category

Place Recipient, School and Project

- 1st Ziyu Wang – North Carolina State University
 "Lime Pretreatment of Coastal Bermudagrass for Bioethanol Production"
- Akanksha V. Kanitkar – Louisiana State University
- 2nd "Batch type Microwave – Assisted Extraction (MAE) of Oil from Soybeans and Rice Bran"
- Fahimeh Yazdanpanah – University of British Columbia
- 3rd "Effect of Moisture Content and Fines on the Static Pressure Drop in Beds of Wood Pellets"

PhD Category

Place Recipient, School and Project

- 1st Deepak R. Keshwani – North Carolina State University
 "Microwave Pretreatment of Switchgrass for Bioethanol Production"
- 2nd Librada Chu-Agor – Oklahoma State University
 "Sediment Transport Function Predicting Seepage Erosion Undercutting"
- 3rd Zifei Liu – North Carolina State University
 "Modeling Ammonia Emissions from Broiler Litter at Laboratory Scale"

2008

M.S. Category

Place Recipient, School and Project

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| 1st | John W. Fuchs – Oklahoma State University
"Subsurface Transport of Phosphorus in Riparian Floodplains: Tracer and Phosphorus Transport Experiments" |
| | Ryan W. Woolbright – Oklahoma State University
"Model Study of RC Stepped Spillways with Sloped Converging Training Walls" |
| 2nd | |
| | Chetan Maringanti – Purdue University |
| 3rd | "Development of a Multi-Objective Optimization Tool for the Selection and Placement of BMP's for Pesticide Control" |

PhD Category

Place Recipient, School and Project

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| 1st | Mark A. Thomas – Purdue University
"Water Quality Impacts of Corn Production to Meet Biofuel Demands" |
| 2nd | Nalladurai Kaliyan – University of Minnesota
"Roll Press Briquetting and Pelleting of Corn Stover and Switchgrass" |
| 3rd | Kaushlendra Singh – University of Georgia
"Screening and Pyrolysis of Poultry Litter" |

2007

M.S. Category

Place Recipient, School and Project

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| 1st | Yulin Lu, Purdue University
"Biomimetic Catalysis for Hemcellulose Hydrolysis in Corn Stover" |
| | Laura E. Christianson, Kansas State University
"Management Implications for a Poplar Phytoremediation Plantation" |
| 2nd | |
| | Matthew F. Digman, University of Wisconsin |
| 3rd | "Real-Time Moisture Measurement on a Forage Harvester using Near Infrared Reflectance Spectroscopy " |

PhD Category

Place Recipient, School and Project

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| 1st | Maria Librada Chu-Agor, Oklahoma State University
"Numerical Modeling of Bank Instability by Seepage Erosion" |
| 2nd | Kaushlendra Singh, University of Georgia |

- 3rd "Effect of Factionation on Fuel Properties of Poultry Litter"
Vyknadeshwari Ganesan, South Dakota State University
"Flow Properties of DDGS with Varying Soluble and Moisture Contents Using Jenike Shear Testing "

2006

M.S. Category

Place Recipient, School and Project

- 1st Jessica L. Kozarek, Virginia Tech
Sorption of Estrogen to Three Agricultural Soils from Virginia, USA "
Bernard Cardenas-Lailhacar, University of Florida
"Rain Sensor Performance and Potential Irrigation Water Savings"
- 2nd
- 3rd Deisy Y. Corredor, Kansas State University
"Effect of Decorticating Sorghum on Ethanol Production and Composition of DDGS"

PhD Category

Place Recipient, School and Project

- 1st Kyeonghwan Lee, Kansas State University
"A Dielectric Permittivity Sensor for Simultaneous Measurement of Multiple Soil Properties"
- 2nd Jianwei Qin, Michigan State University
"Measurement of the Optical Properties of Apples Using Hyperspectral Diffuse Reflectance Imaging"
- 3rd Dawn M. Reinhold, Georgia Institute of Technology
"Phytoremediation of Fluorinated Pollutants by Duckweed"

2005

M.S. Category

Place Recipient, School and Project

- 1st Rachel N. Cook, Iowa State University
"Effects of Cage Stocking Density on Feeding Behaviors of Group-Housed Laying Hens"

PhD Category

Place Recipient, School and Project

- 1st Wenqiao Yuan, University of Illinois
"Computational Modeling of NO_x Emissions from Biodiesel Combustions"

- Based on Accurate Fuel Properties"
- 2nd Ganesh C. Bora, Kansas State University
"Pulse Width Modulation (PWM) Technique in Precision Anhydrous Ammonia Application and its Valve Durability"
- 3rd Pedro Andrade-Sanchez, University of California - Davis
"Development Construction and Field Evaluation of a Soil Compaction Profile Sensor"

2004

M.S. Category

Place Recipient, School and Project

- 1st Angela R. Green, University of Kentucky, "Measurement of Horse Core Body Temperature" (MS Word file).
- 2nd Michelle I. Soupir, Virginia Tech, "Release and Transport of Nutrients and Bacteria from Livestock Manure Applied to Pastureland" (Word document).
- 3rd Hong Young Jeon, University of Tennessee, "Sprayer Boom Dynamic Effects on Application Uniformity" (Word).

PhD Category

Place Recipient, School and Project

- 1st Zhongchao Tan, University of Illinois, "Mechanisms of Particle Separation in Aerodynamic Air Cleaning" (Word).
- 2nd Lingjuan Wang, Texas A&M University, "Correcting PM10 Over-Sampling Problem for Agricultural Dust" (PDF document).