

# AGCO Student Design Competition Winners

## 2001 - Present

### 2023

1st Place

North Carolina State University: Grayson Averette, Lily Averette, Joseph Hanks, and Justin Raver

Improved Precision Sow Feeder with Mass-Based Measurement System

2nd Place

University of Tennessee, Knoxville : Robert Cowan, Cam Reynolds, Bailey Millsaps, and Darlene Player

PIPER: Pot-in-Pot Extracting Robot

3rd Place

University of Wisconsin, Madison : Gabby Whisler, Jenna Kouba, Micah Robinson, and Zach Jannusch

Machine Learning Models using Remote Sensing for County-Level Corn Yield Prediction in the Midwestern U.S.

### 2022

1st Place

Ohio State University: Emma Rand, Katelyn Sang, Lindsey Shimoda, Donald Smith

Transpiration Control for Sustainable Deep Space Food Production

2nd Place

Texas A&M University: Matthew Atkins and Michael Unterman

Vibration Monitoring for Predictive Maintenance

3rd Place

North Carolina State University: Elizabeth Beyer, Camryn Darragh, and Jake Jennings

The Incorporation of a Bird Deterrent System into Floating Bag Mariculture

### 2021

1st Place

University of Tennessee-Knoxville: Margie Peeler, Jim Roebuck, and Lewis Webber

Gradual Rotary Adjustment for Sloped Surfaces (G.R.A.S.S.)

2nd Place

University of Wisconsin-Madison: Kylie Callahan, Jacob Olivares, and Priyanka Patel

Portable Hemp Decorticator

3rd Place

University of Tennessee-Knoxville: Benjamin Cruz and Colby Gillmann  
Solid-State Microwave Control and Data Collection System

## **2020**

1<sup>st</sup> Place

University of Tennessee-Knoxville: Logan Ashworth  
Rapid Autonomous Corn Phenotyping – Data Acquisition System

2<sup>nd</sup> Place

University of Tennessee-Knoxville: McKensie Nelms and Mary Morris  
Poultry Farm Security Gate: Autonomous Vehicle Recognition System

3<sup>rd</sup> Place

Texas A&M University: Ana Chen Reyes, Jacy Gray, and Madison Hodges  
Rural Garden in a Food Desert

## **2019**

1<sup>st</sup> Place

Texas A&M University: Haley Forbes, Kendra Bailey, Martin Jeffers  
Black Soldier Fly Larvae Bio-Waste Treatment and Biomass Conversion System Design in Haiti

2<sup>nd</sup> Place

North Carolina State University: Lucas Mitchell, Hannah Monroe, Carrie Sanford  
Post Harvest Handling of Chopped Biomass Feedstocks through Desiccation for Long-Term Storage

3<sup>rd</sup> Place

North Carolina State University: Sam Beavans, Ryan Jackson, Ryan Phillips  
Position Enabled Section Control Benjamin Foote for Wildflower Planting

## **2018**

1<sup>st</sup> Place

North Carolina State University: Alex Greeson, Benjamin Cauthen, Benjamin Cranfill, Matthew Parker, William Marsh  
Aeromechanical Cleaning of Pine Straw

2<sup>nd</sup> Place

University of Wisconsin – Madison: James Dodge, Yash Mirchandani, Javier Castro Zachary Wilson, Jason Ha  
Prestressed Concrete Post Fabrication System

3<sup>rd</sup> Place

Oklahoma State University: Laymon Barnett, Caleb Curren, Bo Davenport  
Strongarm Systems: Windrower Three-Point Implement Mounting Attachment

## **2017**

1<sup>st</sup> Place

University of Wisconsin-Madison: Jared Francois, Melissa Gustafson, Grant Herrman, Josiah Zanghi  
Hazelnut Shell Fragment and Kernel Separator Exploiting Differences in Particle Rolling Ability

2<sup>nd</sup> Place

North Carolina State University: Emily DeHority and James Abdalla  
Improvements on a Direct Chemical Injection System

3<sup>rd</sup> Place

University of Tennessee-Knoxville: Madison Brummitt, David Gilliam, Garrett Froula  
The EZ-Lift: A Mechanical Lift-Assist for Rollover Protective Structures

## **2016**

1<sup>st</sup> Place

University of Tennessee: Hayden Jordan, Taylor Overton, Jonathan Yoder  
Integrated System to Monitor Dairy Calf Feeding Behavior for Pre-Clinical Detection of Disease

2<sup>nd</sup> Place

University of Wisconsin - Madison: Caynen Klessig, Kathleen Roush, Rebecca Smith, Haohua (Mandy) Wang  
Separation Device of Hazelnut Kernels and Shells

3<sup>rd</sup> Place

Kansas State University: Austin Schmitz, Peter Masters, Davie Leiszler  
Mechanical Net Wrap Remover for Large Round Hay Bales

## **2015**

1<sup>st</sup> Place

University of Wisconsin – Madison: Jennifer Sanford, Travis Schumacher, Jenelle Selig, Lindsay Shewchuk, Trever Meyer  
Small-Scale Hazelnut Cracker

2<sup>nd</sup> Place

Ohio University – Athens: Devon Baum, David D’Agostino, Corey Deeter, Eric Tolar, Ryan Radecki  
Bean Bagging System

3<sup>rd</sup> Place

University of Tennessee: Chance Frana, Cole Stonebrook, Sam Tabor  
The Squeaver

## **2014**

1<sup>st</sup> Place

University of Wisconsin – Lucas Sisler, Shengzhhi He, Ned Ahlberg  
Batch – Type Barrel Washer for Root Crops

2<sup>nd</sup> Place

University of Wisconsin – Joseph Treinen, Nolan Lacy  
A Scale Attachment for a Tractor Front End Loader

3<sup>rd</sup> Place

Iowa State University – Andrew Verhasselt

Automated Wire Feeder Add-on to Mechanical Transplanter's Model 95 Tunnel Layer

## 2013

1st Place

University of Wisconsin – Brandon Nigon, Scott Dietsche, Christopher Strehmel BADGER DYNO: An Easily Adopted Tractor Hitch Dynamometer

2nd Place

University of Tennessee – Dillon Avans, Robert Baldus, Andrew Veeneman

A Systematic Approach to the Improvement of High Tunnels with Regards to Their Ability to Withstand Wind

3rd Place

University of Tennessee – Ryan Hodges, Chanci King, Brandon Massengill, Brittani Pere  
Subclinical Mastitis Inline Detection System (S.M.I.D.S.)

## 2012

1st Place

University of Tennessee - Chris Drinnon, Tyler Pannell, Steven Pickett

Where the Rubber Leaves the Road: Designing a Single Turf Tire Test Unit for Traction Performance

2nd Place

Oklahoma State University - Scott Clark, Eric Lam Automated Chemical Injection System - N2 Line Solutions

3rd Place

Kansas State University - Jacob Nagely, Lisa Hillstock Measure Ear Drooping to Detect Cattle Illness

## 2011

**Place**

**Name(s), School and Project**

1st

Fernando Aristizabal - University of Florida  
Big Cypress Seminole Indian Reservation: Carl Baxley's Seepage Irrigation and Drainage System Design

2nd

James Bevington, Joseph Freeman, Benjamin Hoptroff, Clayton Parsons - University of Tennessee  
Design of a Blue Crab Nursery System for Stock Enhancement

3rd

Tai-wen (Debby) Chou, Nathan Holeman, Haley Malle, Jeff Welch - University of Arkansas  
Remote Bidirectional Bump Gate for a Disabled Cattle Farmer

## 2010

**Place**

**Name(s), School and Project**

- 1st Heath Duncan, Lori Gibson, Alexander McLemore, Rebecca Messer –  
University of Tennessee  
"CROPP – Cryogenic Reduction of Organic Pest Plants"
- 2nd Keith Connolly, Tatjana Trebic – McGill University  
"Optimization of a Backyard Aquaponic Food Production System"
- 3rd Joel Jagodinsky, Luke Melchior, Jesse Smith, Andrew Van Hoorn -  
University of Wisconsin  
"Small Engine Dynamometer"

## 2009

- | <b>Place</b> | <b>Name(s), School and Project</b>  |
|--------------|---|
| 1st          | Peter Harris, Pao Her, Andrew Holstein, Kyle Nelson – University of Wisconsin<br><u>"Knuckle-Boom Crane Attachment for Skid Steer Loaders"</u>  |
| 2nd          | Kody Habeck, Shane Williams – University of Wisconsin<br><u>"Badger Bale Borer: A Hay, Forage, and Biomass Sampling Device"</u>                 |
| 3rd          | Mitchell Groothuis, John Kruckeberg, William Nichols, Abdoulaye Samba, Chase Shaver – University of Tennessee<br><u>"Powered Foldable ROPS"</u> |

## 2008

- | <b>Place</b> | <b>Name(s), School and Project</b>  |
|--------------|---|
| 1st          | Thomas Fortin-Chevalier, Pénélope Thériault – McGill University<br><u>"Design of a Continuous Flow Biodiesel Production Research Unit in India"</u>                         |
| 2nd          | Erin E. Byers, Kimberly N. Geary, Boone S. Hillenbrand, Andrew O. Smith - University of Tennessee<br><u>"Biomass Automated Densification Device – B.A.D.D.!"</u>            |
| 3rd          | Michael A. Hagan, Steven J. Yaste, Charles A. Masterson, Matthew T. Ballard - University of Kentucky<br><u>"Agricultural Implement Guidance System – Dream Engineering"</u> |

## 2007

<b>Place</b>	<b>Name(s), School and Project</b>
1st	Clint T. Cosgrove, Matthew L. Lemmons, Kevin D. Taylor, Lance P. Klement - Oklahoma State University <u>"Redesign of a Tree Shear"</u>
2nd	Grant J. Wonderlich and Andrew M. Goodall - University of Kentucky <u>"Single Wheel Tester for Small Agricultural, Construction and ATV Tires"</u>
3rd	Eric Krogh and Justin Jackson - University of Kentucky <u>"Equine Mobile Feeder"</u>

## **2006**

<b>Place</b>	<b>Name(s), School and Project</b>
1st	Joe M. Biggerstaff, William R. Haar, Matt S. Kilker, Taylor F. Miller - Oklahoma State University <u>"Design of a Manual Cattle Chute"</u>
2nd	Aaron R. Flouro, Kyle P. Bunnow - University of Wisconsin <u>"Moment Resisting Wood-to-Concrete Pier Connection"</u>
3rd	Garrett L. Anderson, John P. Lyons, Joshua B. Meuth, Joshua L. Mosley - Texas A&M University

## **2005**

<b>Place</b>	<b>Name(s), School and Project</b>
1st	Brent C. Jessop, Krista L. Sider, Tom Lee, University of Guelph <u>"Acoustic/EMG System for the Analysis of Food Texture"</u>
2nd	Matthew J. McDonald, University of Wisconsin <u>"Quick-Attach Grapple System"</u>
3rd	Katherine Q. Christian, Benjamin B. Clark, Ester V. Dittert, Brian D. Luck, University of Kentucky <u>"Precision Sprayer Control System Design"</u>

## **2004**

<b>Place</b>	<b>Name(s), School and Project</b>
1st	Kody R. Featherston, Candice L. Johnson, J. Kent Evatt, and Monica L. Johnston, Oklahoma State University, <u>Effective Means of Silt Fence Installation</u> Additional files from the OSU team: <u>OSU Silt Fence Installer</u> ; and <u>n Brochure</u>
2nd	Tyler G. Gipson, Elizabeth Kaufman, Brian K. Shcaffer, and Derek A. Schluterman, University of Arkansas, <u>The Design of a System for the Rapid Pasteurization of Animal Carcasses Contaminated with High Risk Pathogens</u>

## **2003**

<b>Placement</b>	<b>Name, School and Project</b>
1st	Amber D. (Hasche) Widman - Iowa State University. Title of Paper: "Model for Testing Greenhouse Ventilation Logic." Link to paper (pdf; 1,269 kilobytes): <u>Model for Testing Greenhouse</u> .
2nd	Vincent L. Stout - Iowa State University. Title of Paper: "Swine Methane Emissions Using the Tracer Gas Ratio Method."
3rd	James A. Koch - South Dakota State University. Title of Paper: "Low Pressure Sprinkler Distribution." Link to paper (pdf, 2,163 kb): <u>Low Pressure Sprinkler Distribution</u>

## **2002**

<b>Placement</b>	<b>Name, School and Project</b>
1st	Nicholas A. Krueger - Iowa State University Title of paper: <u>Gravity Table Separation of Commodity Corn</u> .
2nd	Timothy J. Van Pelt - Iowa State University Title of paper: <u>Biomass Densification</u> .
3rd	Nathan E. Isaac - Kansas State University Title of paper: <u>Using Cone Index Data to Explain in Field Yield Variation</u>

## **2001**

**Placement Name, School and Project**

- 1st Laura K. Doud, Daniel P. Grant, David C. Smith  
Michigan State University  
"Trim EZ Pruner D.D.L. Equipment Solutions" (pdf file).
- 2nd Jamie D. Foote, Samuel J. Ray, John S. Young, III  
University of Tennessee  
"Environmental Control in Hydroponic Tomato Greenhouses"
- 3rd Ryan E. Nelson, Tyler G. Gipson, Christopher M. Long, Gloria B. Hebert, Clay W. McDaniel, Ray S. Avery, Johnny M.L. Mason, Mark E. Orlicek, University of Arkansas  
"Design of an Aeroponic Plant Growth Chamber"