List of Winners – by College and Department

In each category, posters/papers were grouped in categories for undergraduate, graduate Masters, and graduate PhD and a winner was selected based on the highest average score. In categories with more than 10 entries, an additional winner(s) was selected.

**COLLEGE OF AGRICULTURE AND HUMAN ECOCOLOGY**

**School of Agriculture**

<table>
<thead>
<tr>
<th>Undergraduate winner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary author: Lisa Ellis</td>
</tr>
<tr>
<td>Project title: The Impact Social Capital has on Communication within Extension Education</td>
</tr>
<tr>
<td>Research advisor: Dr. Dennis Duncan</td>
</tr>
</tbody>
</table>

**School of Human Ecology**

<table>
<thead>
<tr>
<th>Undergraduate (1st)</th>
<th>Undergraduate (2nd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary author: Lydia Smith</td>
<td>Primary author: Kaylee Case</td>
</tr>
<tr>
<td>Project title: Reducing Textile Water Waste</td>
<td>Project title: The Benefits of Increased Funding for the National School Lunch Program in Elementary Schools</td>
</tr>
<tr>
<td>Co-authors: Emily Price</td>
<td>Research advisor: Dr. Hannah Upole</td>
</tr>
<tr>
<td>Research advisor: Dr. Hannah Upole</td>
<td>Research advisor: Dr. Rufaro Chitiyo</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Undergraduate (3rd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary author: Aston Brown</td>
</tr>
<tr>
<td>Project Title: Food Insecurity on Adolescent Development</td>
</tr>
<tr>
<td>Research advisor: Dr. Rufaro Chitiyo</td>
</tr>
</tbody>
</table>
### Biology Department

#### Undergraduate

**Primary author:** Salem Sullivan  
**Project title:** The Impact of a Large Surface Rock on Temperature and Decay Rate  
**Faculty Collaborator:** Dr. Lauren Michel (Earth Science)  
**Research Advisor:** Dr. David Beck

#### Graduate (Masters - TIE)

**Primary author:** Morgan Michael  
**Project title:** Spatial Variation of Nutrient Uptake in a Restored Agricultural Wetland  
**Research Advisor:** Dr. Justin Murdock

#### Graduate (Masters - TIE)

**Primary author:** Adam Walker  
**Project title:** Development of an environmental DNA (eDNA) assay to delineate the distribution of the imperiled Striated Darter (Etheostoma striatum, Page and Braasch 1977) in the Duck River, Tennessee  
**Co-authors/faculty collaborators:** Emma Barnett, Connor Lee, Dr. Kit Wheeler  
**Research Advisor:** Dr. Carla Hurt

#### Graduate (PhD)

**Primary author:** Shrijana Duwadi  
**Project title:** The relation of microbial biomass carbon with denitrification and nutrient retention in restored floodplain wetlands  
**Co-authors:** Spencer Womble, Robert Brown  
**Research Advisor:** Dr. Justin Murdock

### Chemistry Department

#### Undergraduate (TIE)

**Primary author:** Allison Adams  
**Project title:** Computational Design of Novel Inhibitors of Dihydrofolate Reductase in Three Bacterial Species  
**Research advisor:** Dr. Derek Cashman

#### Undergraduate (TIE)

**Primary author:** Shawna Grey Coulter  
**Project title:** Creating Color Flame Candles as an Alternative to the Rainbow Flame Test  
**Research advisor:** Dr. Amanda Carroll
**Undergraduate (TIE)**

Primary author: Bailey Talent

**Project title:** Synthesis of INAP-ETSC and INAP-tButyl

Research advisor: Dr. Ed Lisic

---

**Graduate (Masters)**

Primary author: Zachary Gulledge

**Project title:** Metal-free, microwave-assisted oxidative cyclization of 2-pyridyl N-tosylhydrazones toward unsymmetric 1,2,3-triazole complexants

Research advisor: Dr. Jesse Carrick

---

**Graduate (PhD)**

Primary author: Lesta Kocher

**Project title:** A study on the Spectrophotometric Analysis of Hg(II) using Dithizone under Conditions Pertinent to Hg(II) Reduction in Aquatic Systems

Collaborator: Stephen Okine

Research advisor: Dr. Hong Zhang

---

**Earth Sciences**

**Undergraduate**

Primary author: Jason Gentry

**Project title:** Flash Flooding Prediction of Cummins Falls State Park.

Research advisor: Dr. Evan Hart

---

**English**

**Undergraduate**

Primary author: Linda Stegall

**Project title:** Sharing Stories: Recording Stories that Change in Tracks

Research advisor: Dr. Brian Williams

---

**Graduate (Masters)**

Primary author: Lalonie McCarter

**Project title:** The Mirrored Self: Fragmented Narrative in Tim O’Brien’s In the Lake of the Woods

Research advisor: Dr. Brian Williams
Foreign Languages

**Undergraduate (1st)**

Primary author: Lena Albro

**Project title**: Communicating Corona: How Science Can Harness New Media during a Pandemic

Research advisor: Dr. Martin Sheehan

**Undergraduate (2nd - TIE)**

Primary author: Lena Hildebrand

**Project title**: 'Hansel & Gretel' and 'Gretel & Hansel' - A comparison of the Brothers Grimm fairytale and Oz Perkins movie

Research advisor: Dr. Julia Gruber

Primary author: Jordan Wright

**Project title**: Public Health, Private Data, and the International Economy: A German Perspective

Research advisor: Dr. Martin Sheehan

Physics

**Undergraduate**

Primary author: Chris Swindell

**Project title**: Further Optimization of an Ultracold Neutron Spin Dynamics Simulation Code

Research advisor: Dr. Adam Holley

Sociology and Political Science

**Undergraduate**

Primary author: Grady Hicks

**Project title**: Examination of a Bottle Bill in Tennessee

Research advisor: Dr. Lachelle Norris

Women and Gender Studies

**Undergraduate**

Primary author: Katrina Mauk

**Project title**: Saint Radegund: The Portrayal of a Female Saint's Body

Research advisor: Dr. Nicole Cook
# College of Business

## Accounting

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate (Masters)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Kassaundra Copas</td>
<td><strong>Primary author:</strong> McKenzie Viau</td>
</tr>
<tr>
<td><strong>Project title:</strong> The Economic Effects of COVID-19 on Medical Research</td>
<td><strong>Project title:</strong> Car Crash: The effect of COVID-19 on Supply and Demand in the Automotive Industry</td>
</tr>
<tr>
<td><strong>Co-authors:</strong> Jeel Patel</td>
<td><strong>Co-authors:</strong> Neal Reagor, Ting Lu</td>
</tr>
<tr>
<td><strong>Research advisor:</strong> Dr. Sid Bundy</td>
<td><strong>Research advisor:</strong> Dr. Sid Bundy</td>
</tr>
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</table>

## College of Education

## Counseling and Psychology

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate (PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Nooshin Younesi</td>
<td><strong>Primary author:</strong> Corrin Brown</td>
</tr>
<tr>
<td><strong>Project title:</strong> Stress Resistance As a Potential Mediator for the Effect of Self-Efficacy on Depression</td>
<td><strong>Project title:</strong> Complex Trauma and Attachment: Patterns Associated with Maladaptive Development in Adulthood</td>
</tr>
<tr>
<td><strong>Research advisor:</strong> Dr. Nicole Henniger</td>
<td><strong>Research advisor:</strong> Dr. Tony Michael</td>
</tr>
</tbody>
</table>

## Curriculum and Instruction

<table>
<thead>
<tr>
<th>Graduate (Masters)</th>
<th>Graduate (PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Goodson Dzenga</td>
<td><strong>Primary author:</strong> Marlana Smith</td>
</tr>
<tr>
<td><strong>Project title:</strong> Special Education Teachers’ Perspectives on Leisure Activities Participation by Adults with Developmental Disabilities</td>
<td><strong>Project title:</strong> The Relationship Between Physical Abuse and Childhood Problem Behaviors, Moderated by Gender and Ethnicity</td>
</tr>
<tr>
<td><strong>Research advisor:</strong> Dr. Holly Anthony</td>
<td><strong>Research advisor:</strong> Dr. George Chitiyo</td>
</tr>
</tbody>
</table>
Exercise Science, Physical Education and Wellness

Undergraduate

Primary author: Mikayla Lovin

Project title: What is the Relationship Between Balance and Core Strength?

Co-authors: Molly Topping, Katelyn Lancaster

Research advisor: Dr. Michael Phillips

COLLEGE OF ENGINEERING

Chemical Engineering

Undergraduate (1st)

Primary author: Chase Yancey

Project title: Structure and Dynamics of hBD-2 mimetic Interaction with CoV-2 RBD

Research advisor: Dr. Liqun Zhang

Undergraduate (2nd)

Primary author: Phoebe Dawson

Project title: Electrotherapeutic Assisted Wound Healing: Modelling of the Electrostatic Field in a Porous Gel or Healing Media

Co-author/collaborators: Steffano Oyanader, Dr. Stephanie Jorgensen and Dr. Robby Sanders

Research advisor: Dr. Pedro Arce

Graduate (Masters)

Primary author: Varsha Balram

Project title: Modeling the Removal of Cosmetic Dyes by Using Hydrogel Materials in a CSTR

Research advisor: Dr. Pedro Arce

Graduate (PhD)

Primary author: Abdul Salam Mohammad

Project title: Computational printing of rheological changes with setting time of cement-based pastes in 2D geometry

Research advisor: Dr. Joseph Biernacki
<table>
<thead>
<tr>
<th>Civil and Environmental Engineering</th>
<th>Computer Science</th>
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</thead>
<tbody>
<tr>
<td><strong>Undergraduate</strong></td>
<td><strong>Undergraduate (TIE)</strong></td>
</tr>
<tr>
<td>Primary author: Hugh Harris</td>
<td>Primary author: Maddison Davenport</td>
</tr>
<tr>
<td>Co-author: Tyler Wright</td>
<td>Co-authors: Kaitlyn Carroll, Alison Rust, and Sina Sontowski</td>
</tr>
<tr>
<td>Research advisor: Dr. Tania Datta</td>
<td>Research advisor: Dr. William Eberle</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Computer Science</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Undergraduate (TIE)</strong></td>
</tr>
<tr>
<td>Primary author: Jeffrey Kimmell</td>
</tr>
<tr>
<td>Project title: Analyzing Machine Learning Approaches for Online Malware Detection in Cloud</td>
</tr>
<tr>
<td>Co-author: Andrew McDole</td>
</tr>
<tr>
<td>Collaborator: Mahmoud Abdelsalam (Manhattan College)</td>
</tr>
<tr>
<td>Research advisor: Dr. Maanak Gupta</td>
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<tr>
<th><strong>Computer Science</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Graduate (Masters)</strong></td>
</tr>
<tr>
<td>Primary author: Kendall Land</td>
</tr>
<tr>
<td>Project title: Farm-to-Fork Supply Chain Tracking using Blockchain</td>
</tr>
<tr>
<td>Research advisor: Dr. Ambareen Siraj</td>
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</table>

<table>
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<tr>
<th><strong>Computer Science</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduate (PhD)</strong></td>
</tr>
<tr>
<td>Primary author: Md. Ahsan Ayub</td>
</tr>
<tr>
<td>Project title: Understanding Ransomware Behavior using Time Series Analysis for Early Detection</td>
</tr>
<tr>
<td>Research advisor: Dr. Ambareen Siraj</td>
</tr>
</tbody>
</table>
### Electrical and Computer Engineering

#### Undergraduate
- **Primary author:** Weston Beebe
  - **Project title:** Optimal Fredkin Gate Designs for Logical Operations with Two and Three Inputs

- **Research advisor:** Dr. J.W. Bruce

#### Graduate (Masters)
- **Primary author:** Webster Adepoju
  - **Project title:** Novel Ferrite-core Metamaterial and AI-based Coil Parameter Optimization for Efficient Wireless Power Transfer
  - **Co-author:** Muhammad Bima
  - **Research advisor:** Dr. Indranil Bhattacharya

#### Graduate (PhD)
- **Primary author:** Mahmoud Badr
  - **Project title:** Efficient and Privacy-Preserving Contact Tracing System for Covid-19 using Blockchain
  - **Collaborators:** Seham Alansari
  - **Research advisor:** Dr. Mohamed Mahmoud

### Manufacturing and Engineering Technology

#### Undergraduate
- **Primary author:** Ethan Guinn
  - **Project title:** Decarbonization of Transport Sector Using Hydrogen Fuel – An Overview

- **Co-authors:** Dillon Cranford, Ryan Benton
  - **Research advisor:** Dr. Avinash Paruchuri

#### Graduate (Masters)
- **Primary author:** Tyler Edwards
  - **Project title:** Efficiency and Print Quality Benchmarking Between Fused Filament Fabrication and Stereolithography Processes
  - **Co-authors/Collaborators:** Sorayo Olvera, Justin Willingham, and Dr. Avinash Paruchuri
  - **Research advisor:** Dr. Ismail Fidan

#### Graduate (PhD)
- **Primary author:** Seymour Hasanov
  - **Project title:** Experimental and numerical characterization of functionally graded materials fabricated by the fused filament fabrication process
  - **Research advisor:** Dr. Ismail Fidan
### Mechanical Engineering

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate (Masters)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Andrew Gothard</td>
<td><strong>Primary author:</strong> William Rogers</td>
</tr>
</tbody>
</table>

- **Project title:** Dynamic Characterization of Fully 3D Printed Capacitive Sensors for Footbed Pressure Sensing Applications  
  **Research advisor:** Dr. Steve Anton
- **Project title:** Investigation of Coinciding Orthogonal Two-Dimensional Structure-borne Traveling Waves  
  **Research advisor:** Dr. Mohammad Albakri

<table>
<thead>
<tr>
<th>Graduate (PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Peter Oyekola</td>
</tr>
</tbody>
</table>

- **Primary title:** Impedance-based NDE through Instrumented Fixtures; Effects of Clamping Force on Defect-detection Capabilities  
  **Co-author:** Mehedi Barkat  
  **Research advisor:** Dr. Mohammad Albakri

### College of Interdisciplinary Studies

#### Environmental Studies

<table>
<thead>
<tr>
<th>Undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Mikala Wood</td>
</tr>
</tbody>
</table>

- **Project title:** Providing Resources for Female Forestland Owners  
  **Co-authors/Collaborators:** Caroline Curtis, Jamie Ownby, Kitty Philips, and Kyle Evans  
  **Research advisor:** Dr. Steven Sharp

### Whitson-Hester School of Nursing

<table>
<thead>
<tr>
<th>Undergraduate</th>
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<tbody>
<tr>
<td><strong>Primary author:</strong> Alison Bean</td>
</tr>
</tbody>
</table>

- **Project title:** Would Annual A1C Testing Decrease Mortality in Undiagnosed Type 1 Diabetic Children?  
  **Research advisor:** Dr. Dolores Bowman