# College of Agriculture and Human Ecology

## School of Agriculture

### Undergraduate (1st)
- **Primary author:** Chelsea Sanders
- **Title:** Greenhouse bioassay of squash bug preference within Cucurbita pepo
- **Research Advisor:** Brian Leckie

### Undergraduate (2nd) - TIE
- **Primary author:** Marissa Phelps
- **Title:** Important Employability Skills of University Graduates as Perceived by Industry Leaders
- **Research Advisor:** Dennis Duncan

### Undergraduate (2nd) - TIE
- **Primary author:** Sarah Harris
- **Title:** The Impact of a University Connections Course on Freshman Students in the School of Agriculture and Human Ecology
- **Faculty Collaborator:** Melinda Anderson
- **Research Advisor:** Dennis Duncan

## School of Human Ecology

### Undergraduate (1st)
- **Primary author:** Karly Higgins
- **Title:** How does maltreatment in childhood affect relationships in adulthood?
- **Research Advisor:** Rufaro Chitiyo

### Undergraduate (2nd)
- **Primary author:** Jordyn Blackwood
- **Title:** Effectiveness Psychosocial Care for Adolescents with Mental Illness
- **Research Advisor:** Rufaro Chitiyo

### Graduate (Masters)
- **Primary author:** Robin Neese
- **Title:** AAFCS Body of Knowledge Assessment and Implication Review
- **Research Advisor:** Melinda Anderson
# College of Arts and Sciences

## Biology Department

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate (Masters)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary author:</strong> Tyler Hendrick</td>
<td><strong>Primary author:</strong> Spencer Womble</td>
</tr>
<tr>
<td><strong>Co-authors:</strong> Adam Nakamoto, Sophia Ikomi, Jessica Smith, Collin Simmons</td>
<td><strong>Title:</strong> Distribution of Didymosphenia Geminata in Southern Appalachian Watersheds</td>
</tr>
<tr>
<td><strong>Title:</strong> Determination of the Species of Staphylococcus from Human Isolates</td>
<td><strong>Research Advisor:</strong> Justin Murdock</td>
</tr>
<tr>
<td><strong>Research Advisor:</strong> David Beck</td>
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## Chemistry Department

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<tr>
<th>Undergraduate (1st)</th>
<th>Undergraduate (2nd)</th>
<th>Undergraduate (3rd)</th>
<th>Graduate (Masters)</th>
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<tbody>
<tr>
<td><strong>Primary author:</strong> Mariah Tedder</td>
<td><strong>Primary author:</strong> Morgan Brown</td>
<td><strong>Primary author:</strong> Gabrielle Waters</td>
<td><strong>Primary author:</strong> Emily Rush</td>
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<tr>
<td><strong>Co-author:</strong> Zachary Gulledge</td>
<td></td>
<td></td>
<td><strong>Title:</strong> Heavy metal remediation from aqueous solutions by new silica-immobilized thiosemicarbazone materials</td>
</tr>
<tr>
<td><strong>Title:</strong> Frustrated Complexant Scaffolds of 2-(6-[1,2,4]triazin-3-yl-pyridin-2-yl)-1H-indoles Toward Minor-Actinide Separations</td>
<td><strong>Title:</strong> Investigation of N-Donor Organic Ligands for Selective Minor Actinide Separations</td>
<td><strong>Title:</strong> Ullman-Type Coupling of Functionalized 1,2,4-Bistriaizinyl-Bipyridines toward Strategic Complexants for Minor Actinide Separations</td>
<td><strong>Faculty Collaborator:</strong> Cory Hawkins</td>
</tr>
<tr>
<td><strong>Research Advisor:</strong> Jesse Carrick</td>
<td><strong>Faculty Collaborator:</strong> Jesse Carrick</td>
<td><strong>Research Advisor:</strong> Jesse Carrick</td>
<td><strong>Research Advisor:</strong> Ed Lisic</td>
</tr>
</tbody>
</table>
**Chemistry Department con’t**

**Graduate (PhD/Post Doc)**

Primary author: Giri Babu Veerakanellore

**Title:** DBU-Assisted Intermolecular [3 + 2] Dipolar Cycloaddition of Terminal Alkynes with Tosylhydrazones Towards the Synthesis of Frustrated Pyrazolyl-Pyridine-1,2,4-Triazine Complexant Scaffolds for Minor Actinide Separations

**Research Advisor:** Jesse Carrick

**Earth Sciences**

**Undergraduate**

Primary author: Stone McCoy

**Title:** Comparison of the Chattanooga Shale Formation Inside and Outside the Flynn Creek Crater, Jackson County, Tennessee

**Research Advisor:** Jeannette Wolak

**English**

**Undergraduate**

Primary author: Kinsey Potter

**Title:** Toxic Attitudes: Martineau's "Criticism on Women" and the Rhetoric of Shame

**Research Advisor:** Kristin Pickering

**Graduate**

Primary author: Lyndsey DeBoard

**Title:** Championing the Female Body: An Investigation into the Rhetoric of Design in League of Legends

**Research Advisor:** Mari Ramler

**Foreign Languages**

**Undergraduate (TIE)**

Primary author: Jordan Wright

**Title:** Children's Literature and Its Use to Control Girls

**Co-author:** Katrina Mauk,

**Research Advisor:** Julia Gruber

**Primary Author:** Ian Ilgnor

**Title:** The effect of Der Struwwelpeter’s Illustrations on Children’s Literature through Time

**Co-author:** Joseph Hunt

**Research Advisor:** Julia Gruber
**History**

**Undergraduate**

Primary author: Kaitlynn Marshall

**Title:** K-Pop Evolution

**Research Advisor:** Edward Driggers

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**Mathematics**

**Undergraduate**

Primary author: Seth Agee

**Title:** On the Location-Scale Gaussian Mixture of the Laplace Distribution with Applications

**Research Advisor:** David Smith

---

**Physics**

**Undergraduate**

Primary author: Benjamin Luna

**Title:** The Structure of 34Mg

**Research Advisor:** Mustafa Rajabali

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**Sociology and Political Science**

**Undergraduate**

Primary author: Presley Alford

**Title:** Homans' Exchange Theory and Gang Violence

**Research Advisor:** Shelley Brown
### College of Business

#### Accounting

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate (Masters 1st)</th>
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<tbody>
<tr>
<td><strong>Primary author:</strong> Brandon Cravens</td>
<td><strong>Primary author:</strong> Christian Webster</td>
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<tr>
<td><strong>Co-author:</strong> Sundar Krishnamoorthy</td>
<td><strong>Title:</strong> Cloud Services – Silver Lining</td>
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<tr>
<td><strong>Title:</strong></td>
<td><strong>Research Advisor:</strong> Sid Bundy</td>
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<th>Graduate (Masters 2nd)</th>
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<tr>
<td><strong>Primary author:</strong> Jacob Phillips</td>
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<tr>
<td><strong>Co-authors:</strong> Jacob Donegan</td>
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<tr>
<td><strong>Title:</strong> Survival of the Fittest: Financial Analysis of Barnes &amp; Noble’s Survival Strategy</td>
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<tr>
<td><strong>Research Advisor:</strong> Sid Bundy</td>
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### College of Education

#### Counseling and Psychology

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<th>Graduate (Masters)</th>
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<tbody>
<tr>
<td><strong>Primary author:</strong> Mason Doss</td>
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<tr>
<td><strong>Title:</strong> College students’ contingent self-esteem: The effects of mental stress and substance abuse on undergraduates in Tennessee.</td>
</tr>
<tr>
<td><strong>Research Advisor:</strong> Anthony Michael</td>
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**Curriculum and Instruction**

**Undergraduate**
- **Primary author:** Haley Vandergriff
  - **Title:** Social Justice in Contemporary Young Adult Literature

**Graduate (Masters)**
- **Primary author:** Erin Stratton
  - **Co-author:** Allen Mathende
  - **Title:** Flipped Versus Face-to-face Classrooms and Science Achievement in Middle School

**Research Advisor:** Julie Stepp

**Graduate (PhD)**
- **Primary author:** Allen Mathende
  - **Title:** Analyzing observational strategies using the Kirkpatrick model: Insight from a curricular redesign earmarked to promote student-centered learning in postsecondary education.
  - **Faculty Collaborators:** Stephanie Jorgensen, Robby Sanders, Pedro Arce

**Research Advisor:** Andrea Arce-Trigatti

**Exercise Science, Physical Education and Wellness**

**Undergraduate**
- **Primary author:** Carly Payne
  - **Co-authors:** Kayla Langford, Kylee Parrott
  - **Title:** The Effect of Static vs. Dynamic Warm-Up on Flexibility

**Research Advisor:** Michael Phillips
<table>
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<tr>
<th>College of Engineering</th>
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<tr>
<td><strong>Chemical Engineering</strong></td>
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</table>
| **Undergraduate (1st)***  
  Primary author: Katherine Finks |
| **Title**: Where did the notes go? A Literature Review of Relevant Topics for Notetaking Strategies in Active-Based Learning. |
| **Faculty Collaborators**: Andrea Arce-Trigatti and Pedro Arce |
| **Research Advisor**: Stephanie Jorgansen |
| **Undergraduate (2nd)***  
  Primary author: Rylee Smith |
| **Title**: Partition Factor for a Drug in PNIPAm Hydrogel and Water |
| **Research Advisor**: Holly Stretz |
| **Graduate (Masters)***  
  Primary author: Jackson Penfield |
| **Title**: Molecular dynamics simulation on human beta defensin type 3 binding with CXCR4 receptor |
| **Research Advisor**: Liqun Zhang |
| **Graduate (PhD-1st)***  
  Primary author: Haley White  
  **Co-authors**: Shelby Jones and Leif Templeton |
| **Title**: Use of desalination brine for low-energy concentration of orange juice via forward osmosis |
| **Research Advisor**: Laura Arias Chavez |
| **Graduate (PhD-2nd-TIE)***  
  Primary author: Abdul Salam Mohammad |
| **Title**: Computational printing of cement-based pastes in 2D and 3D geometry – a fluid dynamics study |
| **Research Advisor**: Joseph Biernacki |
| **Graduate (PhD-2nd-TIE)***  
  Primary author: Babajide Onanuga |
<p>| <strong>Title</strong>: Advancing 3D printing construction through the development of new cement-based materials |
| <strong>Research Advisor</strong>: Joseph Biernacki |</p>
<table>
<thead>
<tr>
<th>Civil and Environmental Engineering</th>
<th>Graduate (Masters) TIE</th>
</tr>
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<tbody>
<tr>
<td><strong>Undergraduate (1st)</strong></td>
<td><strong>Primary author:</strong> Godson Ebenezer Adjovu</td>
</tr>
<tr>
<td>Primary author: Alec Brenner</td>
<td><strong>Co-author:</strong> Rex Gamble</td>
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<tr>
<td>Co-author: Jacob Thompson</td>
<td><strong>Title:</strong> Development of HEC-HMS Model for the Cane Creek Watershed</td>
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<tr>
<td><strong>Title:</strong> Development of a soil compaction method for non-standardized energy levels</td>
<td><strong>Research Advisor:</strong> Alfred Kalyanapu</td>
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<td>Research Advisor: Daniel VandenBerge</td>
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<tr>
<td><strong>Graduate (Masters) TIE</strong></td>
<td><strong>Primary author:</strong> Prince Turkson</td>
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<tr>
<td>Primary author: Joseph Brockwell</td>
<td><strong>Title:</strong> Effect of levee foundation conditions on the saturated zone during flooding for rapid drawdown analysis</td>
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<tr>
<td><strong>Title:</strong> Performance Evaluation of Vegetated Swales for Highway Runoff Reduction Based on Site Characteristics and Meteorological Influences</td>
<td><strong>Research advisor:</strong> Daniel VandenBerge</td>
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<td>Research Advisor: Tania Datta</td>
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<th>Computer Science</th>
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<tr>
<td><strong>Graduate (Masters)</strong></td>
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<tr>
<td>Primary author: Joe Bivens</td>
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<tr>
<td><strong>Co-author:</strong> Moumita Kamal</td>
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<tr>
<td><strong>Title:</strong> NELMA: Never-Ending Learner for Malware Analysis</td>
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<td>Research Advisor: Douglas Talbert</td>
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<tr>
<th><strong>Graduate (PhD) TIE</strong></th>
<th><strong>Primary author:</strong> Ramesh Paudel</th>
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<tbody>
<tr>
<td>Primary author: Katherine Brown</td>
<td><strong>Title:</strong> An Approach For Concept Drift Detection in a Graph Stream Using Discriminative Subgraphs</td>
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<tr>
<td><strong>Title:</strong> Estimating Uncertainty in Deep Image Classification</td>
<td><strong>Research Advisor:</strong> William Eberle</td>
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<tr>
<td>Research Advisor: Douglas Talbert</td>
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</table>
### Electrical and Computer Engineering

**Undergraduate**
- **Primary author:** Samuel Hollifield
- **Collaborator:** Miki Verma, ORNL

**Title:** Cybersecurity Implications of Modern Automobiles

**Research Advisor:** Stacy Prowell (ORNL)

**Graduate (Masters)**
- **Primary author:** Wesam Al Amiri

**Title:** Blockchain-based privacy-preserving and secure smart parking system

**Research Advisor:** Mohamed Mahmoud

**Graduate (PhD)**
- **Primary author:** Devendrasinh Darbar

**Title:** High energy density Cobalt free cathode for Na-ion battery.

**Research Advisor:** Indranil Bhattacharya

### Manufacturing and Engineering Technology

**Undergraduate**
- **Primary author:** Kevin Goodwin
- **Co-authors:** Thomas Houston, Gary Harris, Connor Welcome, Daulton Russell

**Title:** NASA Human Exploration Rover Challenge Senior Design Team

**Research Advisor:** Ahmed Elsawy

**Graduate (Masters) TIE**
- **Primary author:** Aslan Nasirov

**Title:** Prediction of Mechanical Properties of Fused Deposition Modeling made Parts using Computational Tools

**Research Advisor:** Ismail Fidan

**Graduate (Masters) TIE**
- **Primary author:** Shane Terry

**Title:** Innovating the FDM Process - Metal Powder PLA Printing

**Research Advisor:** Ismail Fidan

**Graduate (PhD)**
- **Primary author:** Mahdi Mohammadizadeh

**Title:** Thermomechanical investigation of continuous fiber reinforced additively manufactured components

**Research Advisor:** Ismail Fidan
Mechanical Engineering

**Undergraduate**

Primary author: Nathan Ghattas  
Co-author: Robert Ponder  

Title: Investigation of mechanical boundary conditions on impedance based structural health monitoring in a biomedical environment  

Research Advisor: Steven Anton

---

**Graduate (Masters)**

Primary author: Farzin Mashali  

Title: A particular nanodiamond suspension for thermal management  

Research Advisor: Ethan Languri

---

**Graduate (PhD)**

Primary author: Mohsen Safaei  
Co-authors/Collaborators: Eric Nolan  

Title: Finite element simulation of high frequency electromechanical impedance measurements for structural health monitoring  

Research Advisor: Steven Anton

---

College of Interdisciplinary Studies

Environmental Studies

**Undergraduate**

Primary author: Melody Culver  
Co-author: Jordan Durham, Savannah Shanklin, Mike Bolan, Phillip Fox  

Title: GIS Analysis of Illegal Dumping in the Upper Cumberland and Recommendations for Abatement  

Research Advisor: Steve Sharp
**Undergraduate**

**Primary author:** Taylor Summers

**Title:** The Lost Male Partner in the Post Abortion Experience

**Research Advisor:** Susan Piras