

2025

# Undergraduate Scholars Showcase

Featuring:

URCA Associates and Assistants

Outstanding Senior Assignments

CODES Presentations

Friday, May 2, 2025  
9:00 am - 12:00 p.m.



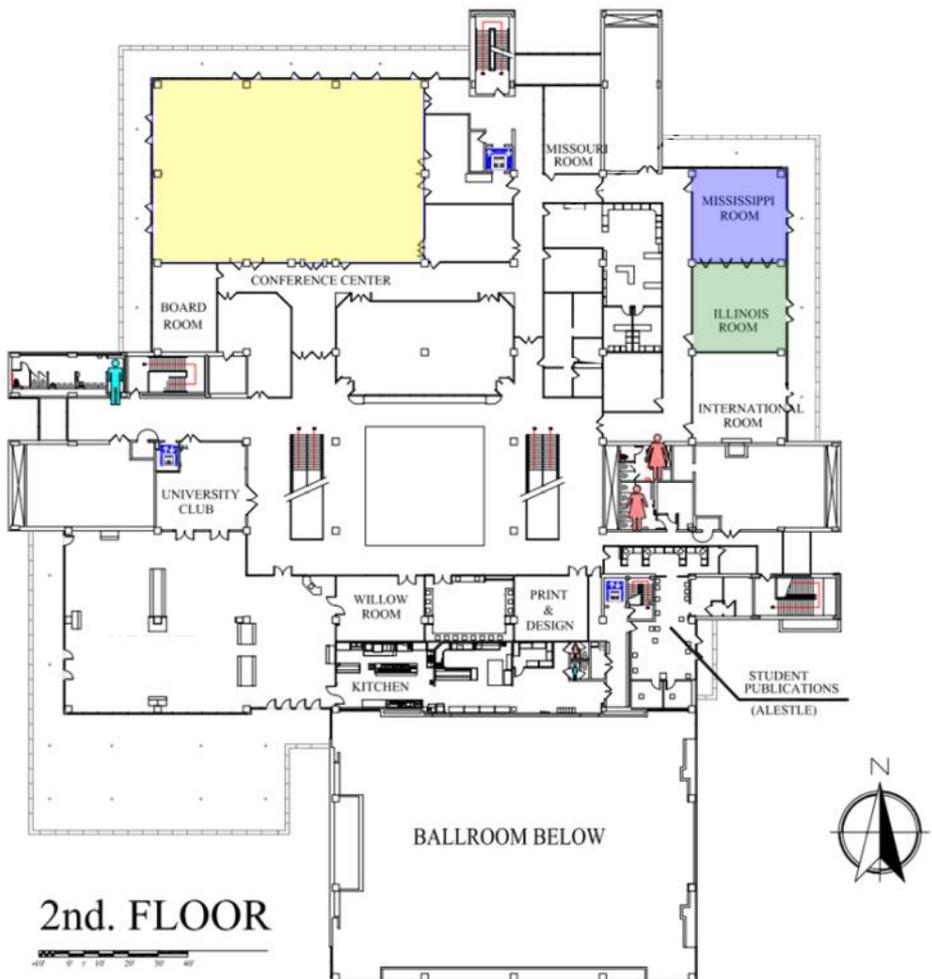
**COUGARS**

Morris University Center

**SOUTHERN ILLINOIS UNIVERSITY  
EDWARDSVILLE**

# Morris University Center

-  **Conference Center** - Poster Presentations and Project Demonstrations
-  **Mississippi Room** - Oral Presentations and Performances
-  **Illinois Room** - Oral Presentations



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# Plan of Events

**May 2, 2025, 9:00am to 12:00pm  
Morris University Center**

**Conference Center**      Poster Presentations and Displays  
Project Demonstrations  
Presentation of Certificates to Senior  
Assignment Participants, Senior URCA  
Assistants, and Senior URCA Associates

**Illinois Room**              Oral Presentations

**Mississippi Room**        Oral Presentations and Performances

Southern Illinois University Edwardsville is proud to celebrate our Undergraduate Research and Creative Activities (URCA) Associates and Assistants, our Outstanding Senior Assignments as nominated by their faculty mentors, and the Community-Oriented Digital Engagement Scholars (CODES) presenters as they share the results of their academic work.



# Undergraduate Scholars Showcase

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**Conference Center 9:00am-12:00pm**

## URCA Associate Poster Presentations

1. Blake Abernathy, *Physics*

"Laser Induced Persistent Change in the Index of Refraction in Praseodymium-doped Zinc-Tellurite Glass Using the X-Scan Technique"

2. Julia Armbruster, *Exercise Science*

"Comparing Student Perceptions and Performance in the Flipped Classroom in Undergraduate and Graduate Settings"

3. Alexandra Bequette, *Chemistry*

"Exploring the Structure and Stability of DNA/RNA Hybrids"

4. Samuel Bickford, *Chemistry*

"Reaction Monitoring and Catalyst Exploration for oxa-Michael Ugi-Smiles Reactions"

5. Riley Brown, *Biological Sciences*

"Lyme Disease in Field Mice in the Edwardsville Area"

6. Milena Di Blasi, *Chemistry*

"Securing Safe Drinking Water in Illinois: A Geospatial and Chemical Investigation of Agricultural and Pharmaceutical Contaminants"

7. Kaz Isibue, *Geography*

"Rockford Matters: A History of Racial Segregation in Rockford Illinois"

8. Allison Mettenburg, *Biological Sciences*

"Road Salt Effects on a Fall Breeding Salamander, *Ambystoma opacum*"

9. Laura Tayon, *Biological Sciences*

"The effect of incubation temperature on incubation time in *Ambystoma annulatum*"

10. Zackary Woodall, *Biological Sciences*

"Determining the Effect of Falling Chloroplasts on the Gravitropic Response in *Arabidopsis thaliana*"

## URCA Assistant Poster Presentations

11. Yassine Ndiaye, *Chemistry*

"Analysis of Asphalt Binder Aging through Molecular Spectroscopy"

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### URCA Assistant Poster Presentations

12. Grace Karolewicz, *Psychology* and John Western, *Biological Sciences*  
“Auditing the Representation of Female Basketball Athletes in Sports Medicine Research: Ankle Injury”
13. Bree Cunningham, Alyssa Gerstenecker, Victoria Phelps, and Nicholas Young,  
*Psychology*  
“Caffeine and Academic Stress in College Students”
14. Dirk Tecson, *Nursing*  
“Childhood Obesity Trends during the COVID-19 Pandemic”
15. Sam McNamee, *Geography*  
“County-Level Water Use Efficiency and Demand Projection in Illinois”
16. Sylvia Lopshire, *Biological Sciences*  
“Creation of a National Wellness Index to Assess the Implications of Maternal Health and Child Mortality on Public Health”
17. Kunal Singh, *Computer Science*  
“Distinguishing Synthetic and Real Images using Deep Neural Networks”
18. Kashish Tandon, *Business Administration*  
“Do All Degrees Signal Equality? Analyzing Employer Perceptions of Institutional Prestige in Hiring Decisions”
19. Maxwell Hardiek, *Biological Sciences* and Isabelle Melton, *Exercise Science*  
“Effects of Sleep Quantity and Quality on Volleyball Performance: A Systematic Review”
20. Gregory Wilson, *Physics*  
“Electro-physical Properties of a Nematic Liquid Crystal Dispersed with Silver Nanoparticles”
21. Mads LaBotte, *ACS Biochemistry* and Maria Poston, *Biological Sciences*  
“Exploring Bacterial Replication and Survival Dynamics under Oxidative Stress Conditions at the Single-Bacterium Level”
22. Drake Crider, Kylie Raasch, *Chemistry, Chemistry*  
“Exploring Electrochemistry In Pseudouridine Modified RNA”

# Undergraduate Scholars Showcase

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## Conference Center 9:00am-12:00pm

### URCA Assistant Poster Presentations

23. Milan James, *Chemistry*

“Exploring the Potential Application of Natural Organic Matter Capped Silver Nanoparticles in Antimicrobial Photodynamic Therapy”

24. Laini Bock, *Elementary Education*

“Finding the Sweet Spot: The Intersection of Technology, Pedagogy, and Mathematics in Preservice Training”

25. Abdulsalam Odojin-Kamorudeen, *Physics*

“Investigating Fluorescence and Absorption Properties of Rare-earth Doped Tellurite Glass Before and After Exposure to Intense Laser Radiation”

26. Jesus Gudino, *Biological Sciences*

“Knockout of a Kynureninase-Coding Gene Does Not Lead to a Nicotinic Acid Requirement in *Schizopyllum Commune*”

27. Giavanna Cabrera, Brittany Fiechtl, Alyssa Gerstenecker, and Alexandria Helling,  
*Psychology*

“Learning is Awesome! The Effect of Inducing Awe on Learning and Love of Learning”

28. Ray-Ann Cook, Taylor Hopkins, Alecsya Price, Samiratu Shaibu, *Psychology*,  
Mustafa Ihsan, *Biological Sciences*, Hannah Labby, *Nursing*, and Mirella Eldridge,  
*Industrial Engineering*

“Pillars of Wellness and their Importance to Student Life”

39. Allie Fishing and Hayden Trezek, *Biological Sciences*

“Real-Time Imaging of Bacterial Predation Highlights Variability in Prey Survival Times”

30. Paris Kinsley, *Nursing*

“Student Perceptions of a New Open Educational Resource Nurse Anesthesia Physiology Textbook”

31. Benjamin Cole and Nathan Oliveira, *Physics*

“Studying the Formation of Persistent Holographic Grating in Tellurium Barium Glass”

32. Viola Stangle, *Biological Sciences*

“Synthesis and Characterization of NOM-induced Silver Nanoparticles for Contaminant Degradation Studies”

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### **URCA Assistant Poster Presentations**

33. Megan You, *Economics and Computer Management Information Systems*  
“The Human Capital Impact of Losing a Child”

34. Emily Rosenthal, *International Studies and Sociology*  
“Understanding Health through Oral Histories at Matany Hospital, Uganda”

35. Adrien Rose, *Integrative Studies*  
“Visualizing Illinois Legislative Data”

### **Outstanding Senior Assignment Poster Presentations**

36. Aleks Stricker, *Anthropology*  
“Analysis of Population Structures in Early Modern Central Europe”

37. Kush Patel, *Mathematical Studies*  
“Collective Risk Models in Short Term Policies”

38. April Downs, *Anthropology*  
“Composing Sustainability at SIUE”

39. Shaayla Hill, Jacob Karolczak, Liam McKilliop, *Applied Communication Studies*  
“Exploring Code-Switching Behaviors among International Students in the United States”

40. Owen Abbigail, Katelynn Grimsley, Olivia Hazen, Jasmine Johnson, Kareem Mateen, and Cayden Quick, *Applied Communications Studies*  
“Generational Differences in Conceptualizing Work/Life Balance within the Workplace”

41. Blake Abernathy and Marissa Feldhake, *Physics*  
“Investigating the Thermo-Optical Coefficient of Telluride Glass with Different Concentrations of Praseodymium”

42. Morgan Petry, *Criminal Justice Studies*  
“Madison County Probation Practices”

43. Lucia Gomez and Brooke Harms, *Biological Sciences*  
“Single-cell Imaging Reveals Phage-induced Bacterial Heterogeneity in Membrane Lysis”

44. Giselle Vital, *Political Science*  
“The Correlation Between Prior Experience of Abuse and Increased Susceptibility to Online Radicalization”

# Undergraduate Scholars Showcase

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## Conference Center 9:00am-12:00pm

### Outstanding Senior Assignment Poster Presentations

45. Thy Do, *Physics*

"Tunable Polarization-Entangled Photon Pairs for Testing Bell's Inequalities and Demonstrating Quantum Nonlocality"

46. Ethan Nugen, *Chemistry*

"Using Dry ATR-FTIR Spectroscopy to Identify 1,4-Butanediol in Alcoholic Beverages"

47. Jeremy Brincken, *Chemistry*

"Investigation of Phosphate Leaving Groups in Sialylation Reactions"

48. Chloe Kendall, *Political Science*

"Who is Impacted by Celebrity Political Endorsements?"

49. Maya Nieters, Matthew Paschedag, Victoria Phelps, and Lexi Taylor, *Psychology*

"Does Academic Stress Affect the Relationship Between Self-Enhancing Humor and Satisfaction with Life?"

50. Sophia Arnold, Emma Cacciatori, and Adria McConaughay, *Psychology*

"The Influence of Family Disengagement, Active Recreational Family Style & Permissive Parenting Style on Adolescent Alcohol Use"

51. Kylie Erwin, Brooke Haas, Hannah Pettit Amber Siatkowski, *Nutrition*

"Improving Lasting Results in Glucagon-like Peptide Receptor Agonists through a Nutrition Focused Multidisciplinary Approach"

52. Zoe Dilks, Madelyn Segovia, Madelyn Vaughan, and Hallie Winstead, *Nutrition*

"Nutrition, Gut Health and Emotional Wellbeing"

53. Lucas Fischer, Cole Frensko, Brandon Schneider, Cameron Stephens, and Olivia Winkeler, *Civil Engineering*

"12th Street Intersection Redesign"

54. Aleks Stricker, Hans Gruben, Edgar McClintock, Sushil Poudel, Brannon Schwartz, and Kali Stewart, *Mechanical Engineering*

"Backpack Bike"

55. Dylan Halley, Andrew Krows, Abram Smith, and Jackson Wooten, *Mechanical Engineering*

"Design, Assembly, and Testing of a Static Fire Test Stand for Solid Rocket Motor Evaluation"

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### **Outstanding Senior Assignment Poster Presentations**

56. Isabella Auer, Dagan Barnett, Brady Dillon, Emily Jones, Brock Kleiboeker, and Isaiah McNeese, *Civil Engineering*  
"IL64 Kishwaukee River Bridge Replacement Oates Associates"
57. Isaac Bradley, Benjamin Lambert, Gerardo Lopez, and Kyle Smith, *Construction Management*  
"Lincoln High School Renovation East St Louis Illinois"
58. Oyeyemi Efunkoya, Kasey Neidhardt, William Schlepper, and Hannah Warner, *Construction Management*  
"Lincoln High School Renovation Project East St. Louis"
59. Isabel Patten, Brianna Schorfheide, and Hanna Ziemann, *Nursing*  
"Increasing Vaccine Compliance in the Outpatient Setting"

### **Outstanding Senior Assignment Demonstrations**

60. Andrew Cole, Gavin Coplea, Gavin Johnson and Aiden Kocher, *Electrical Engineering*  
"Auto Chess (Induction-based Chess Board)"
61. Grant Linton, Riley Middendorf, Steven Nungesser, and Alex Strebler, *Construction Management*  
"Fuller Dome Green Energy Renovation"
62. Christobol Alvarado, Reno Hoffman, Liam McGuire, and Andrew Schalk, *Mechatronics and Robotics Engineering*  
"LibrePrint XL"
63. Alyssa Irvin, *Theater and Dance*  
"One Man Two Guvnors Costume Design"
64. Shuo Huang, Iretomiwa Idowu, Wisdom Omodiagbe, and Yilin Wang, *Mechatronics and Robotics*  
"Open House Robot"
65. Sylvie Kessler, *Integrative Studies*  
"Soozie the Sloth's Zoo Review"
66. Nathan Garnett, Kyle Hall, Luke Head, and Benjamin Miller, *Electrical Engineering*  
"The Sound of Engineering"

# Undergraduate Scholars Showcase

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## Mississippi Room 9:00 - 12:00

### Outstanding Senior Assignment Presentations

9:00 Willow Bowald, Megan Herzing, Haleigh McCune, Callie Reynolds, Alyssa Wilken, *Applied Communications Studies*

“Organizing and Awareness Campaign and Special Event for Flance Early Learning Center in Saint Louis, Missouri”

9:15 Makiah Lewis, Emily Luck, Cassidy Moss, and Lydia Schorfheide, *Applied Communications Studies*

“Organizing an Awareness Campaign and Behind the Curtain Event for the Opera Theater of Saint Louis”

9:30 Giselle Krikorian, *History*

“The Armenians of Istanbul: A Story of Resilience, Survival, and Identity”

9:45 Liv Bushue, *History*

“Sacred Authority, Silenced Voices: The Manipulation and Popular Representation of Priestesses in Classical Athens”

10:00 Brandi Spann, *English*

“The Language of the Ethnic Heirloom”

10:15 Jerrica Asbeck, *English*

“Sentenced to Second Death: The Erasure and Excavation of Ethnic American Stories”

10:30 Tucker Brown, *History*

“Native Americans and the Great War”

10:45 Riley Mitchell, *English*

“Skin in the Game: Perceived Participation in Nope”

### Outstanding Senior Assignment Performances

11:00 Margaret Beekman, *Music*

“Musical Theater Showcase”

11:15 Isaac Border, *Music*

“Senior Recital”

11:30 Justin Campbell, Ezra DeBoise, Tressel Eckman, Raina Heberer, *Theater*

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# Illinois Room

# 9:00 - 11:00

## Outstanding Senior Assignment Presentations

9:00 Emily Kuehnel, *English*

“Playing with Language: Vulgarization and Reclamation”

## Community-Oriented Digital Engagement Scholar (CODES) Presentations

9:30 Jay'len Alcin, *Mechatronics and Robotics Engineering*, Sophia Overturf, *Integrative Studies*, and Jaidyn Sibaja, *History*

“Plants and Extractive Colonialism in the Missouri Botanical Gardens”

9:45 Jada Fryer, *Cybersecurity*, Britney Lewis, *Social Work*, Bryana Nichelson, *Elementary Education*, and Brandon Underwood, *Computer Science*

“Young Botanists' Club”

10:00 Evitt Nashed, *Applied Communications Studies*, Kadynce Sanders, *Pharmacy*, Troy Shaffer, *English*, and Kasey Tipton, *Speech and Language Pathology*

“Rooted in Knowledge”

10:15 Priscilla Kincanon, *Early Childhood Education*, Aydien Noel, *Electrical Engineering*, and Terrell Shelby, *Computer Science*

“Beyond the Garden: The Hidden Histories of the Enslaved”

10:30 Alejandra Beltran, *Political Science*, Hunter Cummins, *Computer Science*, Juan Espericueta, *Business Administration*, and Zachary Tobias, *Mass Communications*

“History of the Soil: A Journey Through Time”

10:45 Jonathan Brown, *Applied Communications Studies*, TaKara Gilbert, *Speech-Language Pathology and Audiology*, Cullen Krieg, *Construction Management*, Zina Kuebee, *Criminal Justice Studies*, and Karmen Thornton, *Dance*

“Creating a Lesson Plan for 9-12th Grade Students about Legacies of Enslavement at MOBOT”

# URCA Associates

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An URCA Associate position is a year-long position in which a student designs their own research or creative activity project and then works with a mentor to see it through. Associates are required to attend monthly meetings and to present their scholarly work at the Spring Symposium. Associates earn a stipend and can also receive money for project-related equipment and travel.

A maximum of 10 students are accepted into this program each year.

## **2024-2025 Associate Class**

**Blake Abernathy**

*Physics*

Mentor: Dr. Abdullatif Hamad

**Julia Armbruster**

*Exercise Science*

Mentor: Dr. Chaya Gopalan

**Alexandra Bequette**

*Chemistry*

Mentor: Dr. Mina Sumita

**Samuel Bickford**

*Chemistry*

Mentor: Dr. Sarah Luesse

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**Riley Brown**  
*Integrative Biology*  
Mentor: Dr. Danielle Lee

**Milena Di Blasi**  
*Biochemistry*  
Mentor: Dr. Carolyn Butts-Wilmsmeyer

**Kaz Isibue**  
*Geography*  
Mentor: Dr. Stacey Brown Amillian

**Allison Mettenburg**  
*Integrative Biology*  
Mentor: Dr. Thomas Anderson

**Laura Tayon**  
*Biological Sciences*  
Mentor: Dr. Thomas Anderson

**Zachary Woodall**  
*Biology*  
Mentor: Dr. Darron Luesse

# URCA Award Winners

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These awards are given each semester to students and faculty in the Undergraduate Research Creative Activity Assistant Program. The winners for the awards for the Fall 2024 and Spring 2025 semesters are as follows:

## **Fall 2024 Winners**

### **URCA Research-Based Mentor of the Semester**

Dr. Sarah Conoyer  
*Department of Psychology*

### **URCA Creative Activity-Based Mentor of the Semester**

Dr. Thad Duhigg  
*Department of Art and Design*

### **URCA Research Assistant of the Semester**

Dirk II Tecson  
*Nursing*

### **URCA Creative Assistant of the Semester**

Hannah Weck  
*Art and Design*

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## **Spring 2025 Winners**

### **URCA Research-Based Mentor of the Semester**

Dr. Joshua Wooten

*Department of Exercise, Sport, and Nutrition Science*

### **URCA Research Assistant of the Semester**

Liezel Lindo

*Psychology*

### **URCA Creative Assistant of the Semester**

Sydney Williams

*Art and Design*





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The Office of the Provost and Vice Chancellor of Academic Affairs is proud to sponsor the Undergraduate Scholars Showcase. The Showcase was designed to highlight the depth and variety of the Senior Assignment program at Southern Illinois University Edwardsville. Each department or program was asked to award its top Senior Assignment projects with the Outstanding Senior Assignment Award. Students receiving this honor were asked to participate in the 2024-2025 Undergraduate Scholars Showcase.

Thank you for your support of the Southern Illinois University Edwardsville Undergraduate Scholars Showcase!

**SOUTHERN ILLINOIS UNIVERSITY  
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