



SPRING 2024

UNDERGRADUATE RESEARCH SYMPOSIUM

REPORT



MISSISSIPPI STATE UNIVERSITY™
UNDERGRADUATE RESEARCH
AND CREATIVE DISCOVERY

UNDERGRADUATE RESEARCH SYMPOSIUM

SPRING 2024 - TELLING OUR STORY

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EVENT OVERVIEW

The Undergraduate Research Symposium (URS) offers students a platform to present faculty-guided research and creative projects. This bi-annual event brings together students from various departments, colleges, and institutions for poster and oral presentations. It serves as a distinctive opportunity for students to share their research within the Mississippi State University community.

Additionally, participants receive feedback from faculty, graduate students, and research staff through comment cards, aiding in the enhancement of their current projects and readiness for future research endeavors.

The URS occurs annually in the spring and is complemented by the Undergraduate Research Showcase in the summer. Both events are organized by The Office of Undergraduate Research and Creative Discovery and the Shackouls Honors College, alongside other sponsors supporting undergraduate research.



SPRING 2024 URS

The Spring 2024 Undergraduate Research Symposium took place on April 11th and 12th in the ballroom of the Colvard Student Union. This URS saw the highest number of student presenters and attendees!



STUDENT PRESENTERS

The event showcased 270 submissions that highlighted engaging projects with faculty mentors from various departments within the institution. These submissions were divided into eight categories: Arts, Music, & Design; Biological & Life Sciences; Business & Economics; Education; Engineering; Humanities; Physical Sciences; and Social Sciences. Throughout a span of two days, 256 undergraduate students shared their research and creative works through posters, performances, or oral presentations.



Students comments on what they gained from participating

"This was my first time presenting research, so I gained knowledge on presenting and confidence in sharing my project and data."

"Professional growth and public speaking skills."

"Experience, connections, networking opportunities and learning for the future."

"gave me a lot of confidence in my skills as a researcher and a presenter ... it makes me feel like I belong to a community of wonderfully bright and motivated scholars."

"Insight into how others approach challenges as well as experience communicating my project to others."

270

Total Submissions

- 105** Biological and Life Sciences
- 92** Social Sciences, Education, and Business & Economics
- 17** Physical Sciences
- 35** Engineering
- 21** Humanities and Arts, Music, & Design

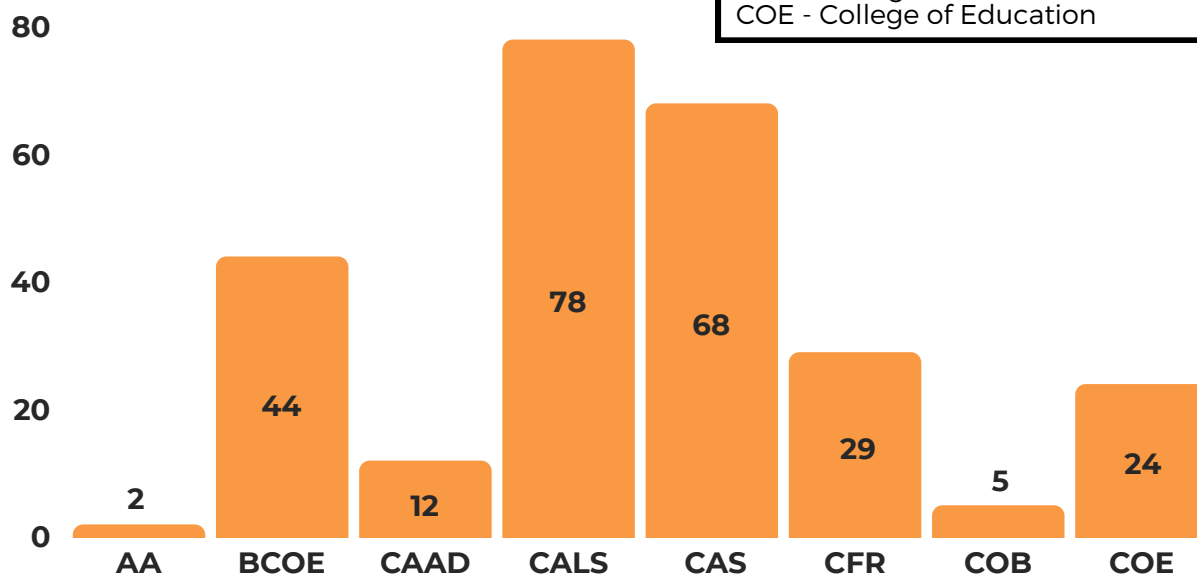


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STUDENT PRESENTERS

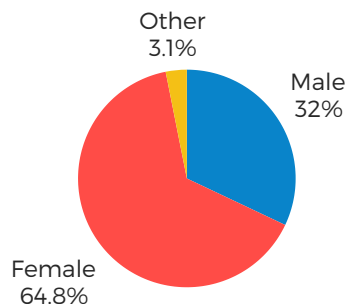
The Spring 2024 URS saw a diverse group of students participating, showcasing a wide array of interests and backgrounds. Student presenters hailed from 51 distinct academic majors and 8 colleges. Notably, Psychology (30) and Biochemistry (27) had the highest student participation rates. Additionally, there were participants from two area high schools and two other SEC universities.

PRESENTERS BY COLLEGE

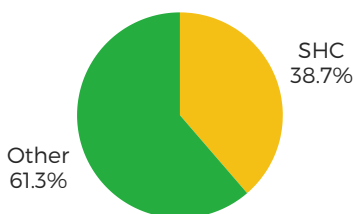


AA - Academic Affairs
BCOE - Bagley College of Engineering
CAAD - College of Art, Architecture, & Design
CALS - College of Agriculture & Life Sciences
CAS - College of Arts & Sciences
CFR - College of Forest Resources
COB - College of Business
COE - College of Education

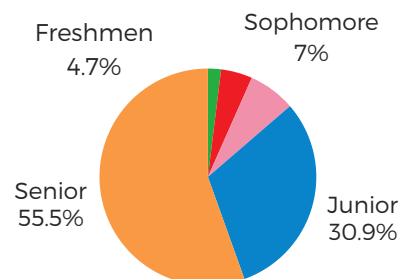
PRESENTERS BY GENDER



PRESENTERS BY SHACKOULS HONORS COLLEGE AFFILIATION



PRESENTERS BY YEAR



STUDENT PRESENTERS



57% of projects received funding

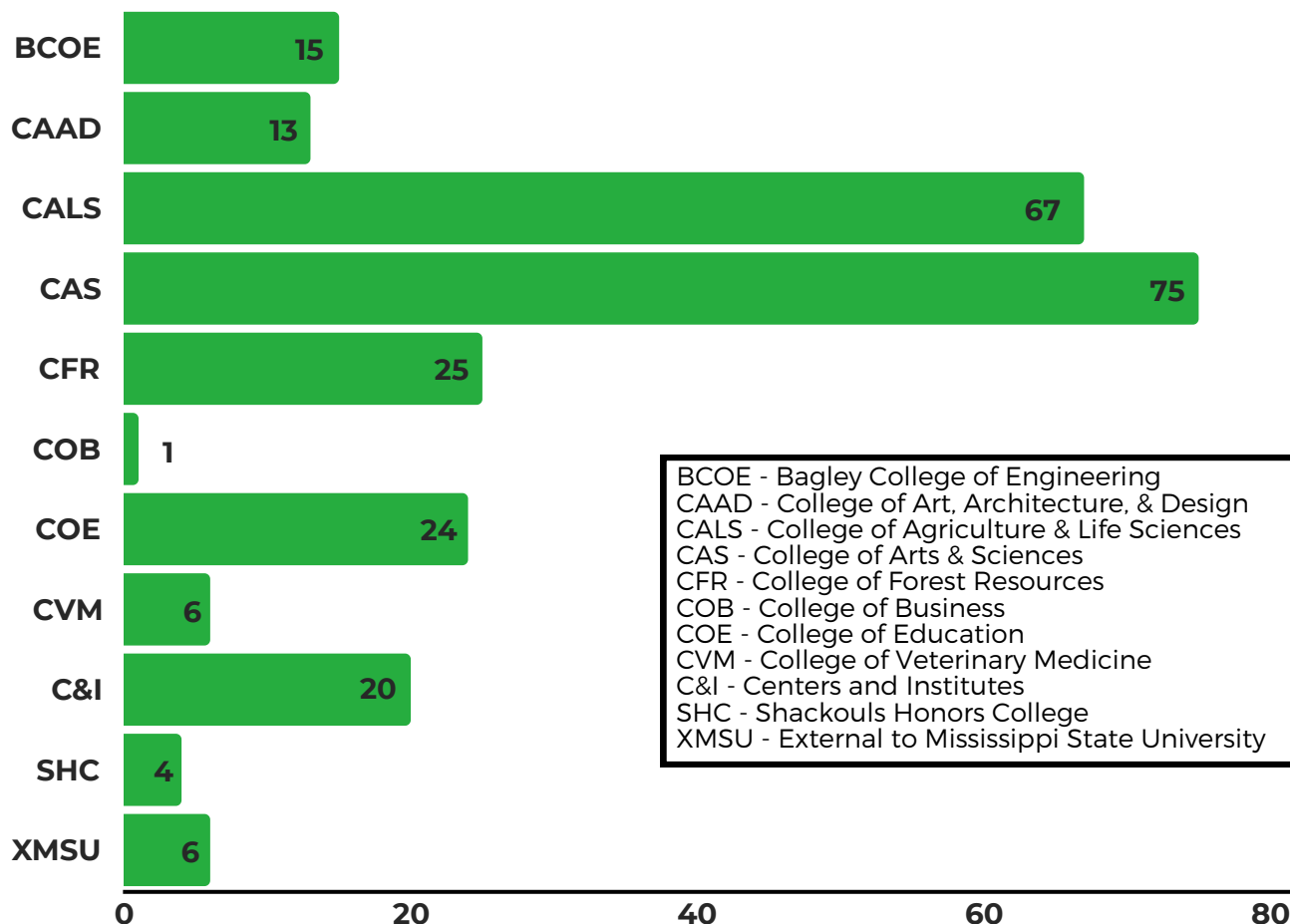


45% of projects were for class credit



91% of presenters are considering research in their future

STUDENTS' FACULTY MENTOR AFFILIATION



PROJECT EVALUATION

We enlisted 92 faculty, staff, and graduate students from different departments at Mississippi State University to volunteer as project evaluators. These evaluators offered valuable feedback to student presenters through written comments. This constructive feedback aimed to enhance students' research communication skills and motivate them to engage in future research projects.

20

Participated in sessions for Engineering and Physical Sciences

35

Participated in sessions for Humanities, Arts, Music, & Design, Education, Business and Social Sciences

37

Participated in session for Biological and Life Sciences

A complete list of evaluators is available at <https://www.urcd.msstate.edu/symposium/spring>.

UNDERGRADUATE RESEARCH SYMPOSIUM

Comment Card

Please provide comments about student performance based on research quality, communication, and visual design.

Project Number _____

Student Name _____

STRENGTHS

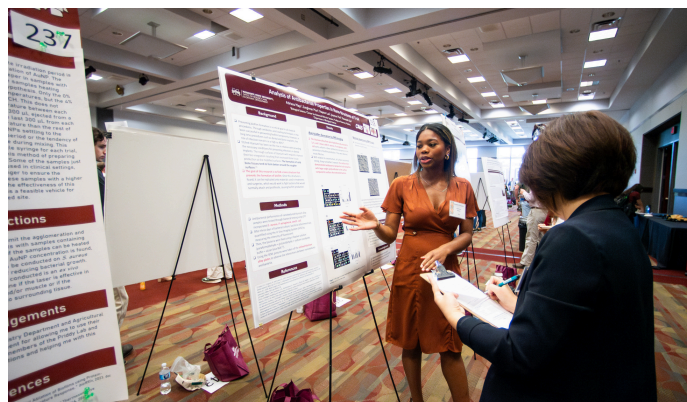
IDEAS FOR IMPROVEMENT

Name/Signature (optional) _____

Please return this card directly to the student.

Project evaluators offered feedback on comment cards, noting both the strengths and areas for improvement in the assigned projects. Students received multiple comment cards from evaluators from diverse academic backgrounds. This approach aims to assist students in effectively communicating their research to a wide range of audiences and encourages them to view their research from different perspectives.

Since the Undergraduate Research Symposium (URS) is frequently a student's initial experience presenting research to the public, we take pride in the current project evaluation method. It offers constructive criticism that promotes ongoing development and nurtures enthusiasm for future participation in research and creative ventures.



SPECIAL AREA COMPETITIONS

In Spring 2024, the URS included 11 Special Area Competitions intended to acknowledge excellence in student scholarship within specific disciplines and categories. These competitions were supported by various undergraduate research partners at Mississippi State University.

11 41

Special Area Competitions
were held by campus-wide
research partners

Student projects received
recognition from Special
Area Competitions

More information is available at <https://www.urcd.msstate.edu/symposium/spring>.



- 3 Minute Research Pitch
- Biomedical Research
- CALS & MAFES Undergraduate Research Scholars Program
- Data Science Research
- Engineering Research
- Forestry and Wildlife Research
- Gulf Coast Research
- Humanities Research
- MSU Libraries Research
- Movement Sciences & Health Research
- Public Health Research

The Special Area Competitions were sponsored by: The Graduate School, the Departments of Agricultural & Biological Engineering and Comparative Biomedical Sciences, the College of Agriculture & Life Sciences and the MS Agriculture & Forestry Experiment Station, the Data Science Program, the Bagley College of Engineering, the College of Forest Resources and the Forest & Wildlife Research Center, the Gulf Scholars Program, The Institute for the Humanities, the Mitchell Memorial Library, the Department of Kinesiology, and the Department of Food Science, Nutrition, & Health Promotion.



3 MINUTE RESEARCH PITCH

Sponsored by the Graduate School

The 3 Minute Research Pitch (3MRP) competition tasks students with delivering a concise verbal presentation of their research and its importance within a three-minute timeframe. Inspired by the Three Minute Thesis (3MT) graduate competition, this initiative aims to enhance research communication abilities. Listed below are the student participants who not only presented during the URS but also took part in the 3MRP competition on the afternoon of April 12.



Jennifer Bittner - Laboratory Studies of Movement and Microenvironment Choices of Engorged Adult Female Gulf Coast Ticks, *Amblyomma maculatum*

Logan Carlson - A Cost-Effective AtHome Raman Spectroscopy Setup in Comparison with Commercial Alternatives

Jacqueline Enriquez - Indigenous Technologies in Architecture

Lana Evans - Time Restricted feeding reduces progressive proteinuria in obese Dahl salt-sensitive rats prior to puberty

Naoufel Ghannami - Resilience Quantification of Space Habitats through Virtual Testing

Daniel Hogan - A redesign of the Omnipod Automated Insulin Delivery Device

Deja Howard - FirshFirst! Zambia: ComFA+Fish: A Innovative Solution Addressing Childhood Malnutrition in Zambia and Beyond

Madelyn Hunter - Circadian locomotor activity patterns exhibit sexual dimorphism in a *Drosophila* model of *Spinocerebella ataxia Type 1*

Kyla Hunter - Expanding Horizons: Exploring Sparrowhawk Marine Radar's Potential in UAS Operations

Catherine Kalmbach - Solubility and degradation of human fertility-promoting molecules in a rumen environment

Tony Owens - An investigation into Social Vulnerability and Flood Risks in the Yazoo-Mississippi Delta

Emma Palmer - Increased levels of MMPs impair motor function in a fly model of *spinocerebella ataxia type 1*

Elena Palomino - Hail State and Tip Your Server: The interplay between tip framing techniques and social identity to influence restaurant tip choices

Jillian Robinette - Improved Herbicide Selectivity in Tomato by Safening Action

Tyrus Smith - Individual Difference in Strategy Selection



EVENT SPONSORS

We would like to extend a thank you to our sponsors! The contributions of these partners enable The Office of Undergraduate Research and Creative Discovery to successfully host the URS.

Judy and Bobby Shackouls Honors College
Office of Research & Economic Development
College of Arts & Sciences
James Worth Bagley College of Engineering
College of Education
College of Agriculture and Life Sciences / MAFES
College of Forest Resources
The Honor Society of Phi Kappa Phi
The Graduate School
Student Association



MORE INFORMATION

For more information about the event,
listing of Evaluators,
Special Area Competition winners,
the copy of the digital booklet,
and photo gallery of the event,
visit the Spring symposium page on our website:

<https://www.urcd.msstate.edu/>



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