

undergraduate research  
**SYMPOSIUM**

MISSISSIPPI STATE UNIVERSITY®  
SPRING 2023



**MISSISSIPPI STATE UNIVERSITY™**  
UNDERGRADUATE RESEARCH  
AND CREATIVE DISCOVERY

# UNDERGRADUATE RESEARCH SYMPOSIUM

SPRING 2023 - TELLING OUR STORY

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## TABLE OF CONTENTS

Event Overview	3
Student Presenters	4
Project Evaluations	7
Special Area Competitions	8
Event Sponsors	10
More Information	10

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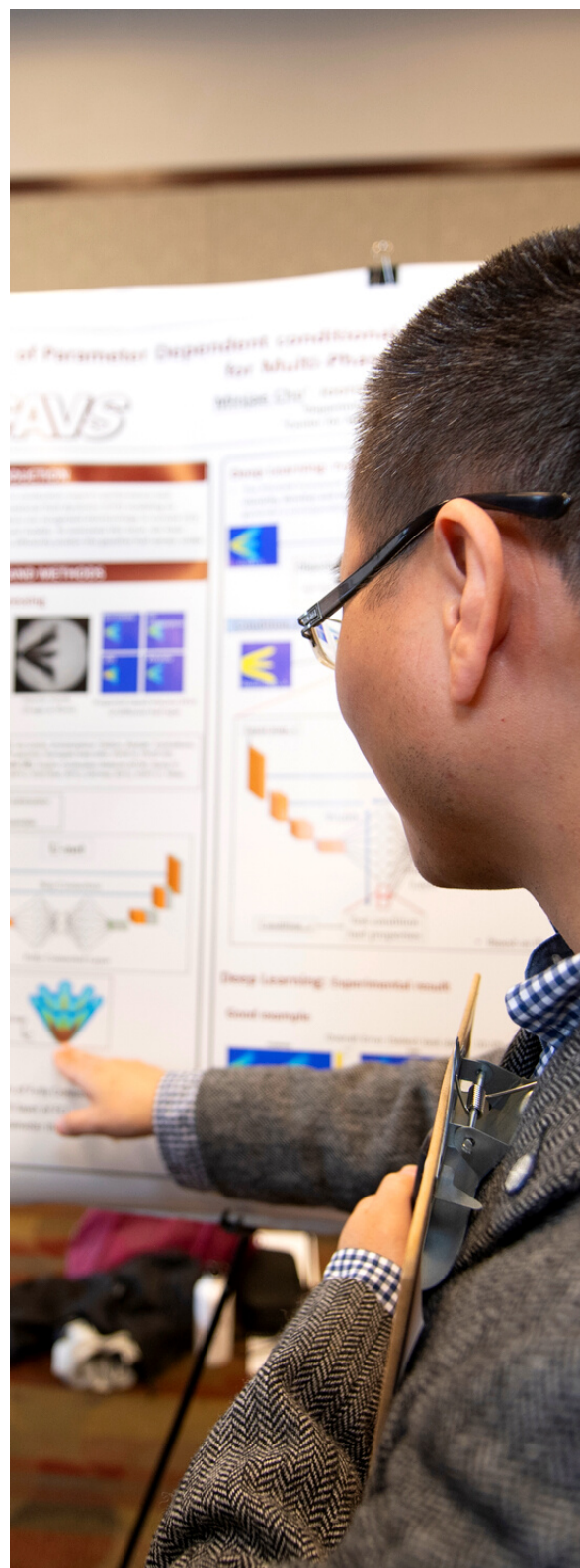
# WHAT IS THE UNDERGRADUATE RESEARCH SYMPOSIUM?

The Undergraduate Research Symposium (URS) allows students to showcase faculty-guided research and creative activity. In this bi-annual event, students from diverse departments, colleges, and other institutions participate in poster and oral presentation sessions. The URS provides a unique opportunity for students to share their research with the Mississippi State University community. In addition, student presenters are evaluated and provided feedback by graduate students, faculty, and staff evaluators. This feedback can be useful in improving students' current research projects and preparing them for future research endeavors.

The URS is hosted every year in the spring and has a sister event, The Undergraduate Research Showcase, in the summer. Both events are hosted by The Office of Undergraduate Research and Creative Discovery and the Shackouls Honors College with other undergraduate research sponsors.

## SPRING 2023 URS

The URS of Spring 2023 was held on April 13th and 14th in the ballrooms of the Colvard Student Union. This URS had the largest number of student presenters and attendees to date!



*Data for this report were taken from the abstract submission form and an optional satisfaction survey. Photographs were taken by Megan Bean, Photographer, Office of Public Affairs.*





# STUDENT PRESENTERS

Over the course of two days, **268 undergraduate students** presented their research at the URS. Research projects are divided into four categories: Biological Science and Engineering, Social Science, Humanities and Arts, and Physical Science and Engineering. In each of these categories, students presented posters that highlighted their research questions, methods, and conclusions to interested attendees and evaluators. Additionally, students in the Humanities and Arts category had the opportunity to give 10-minute oral presentations that showcased their research and creative endeavors.



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## STUDENT TESTIMONIALS

*"I have gained an appreciation of what research truly looks like and all the opportunities that research entails for undergraduate students. This was eye-opening and increased my excitement for future research opportunities if they present themselves."*

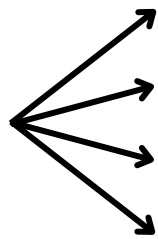
*"Extremely valuable experience for my future career in research, increased confidence in presenting my research and answering related questions, constructive feedback on the strengths of my project and presentation skills as well as areas in which I can improve"*

*"It was very fun! I was very nervous thinking about it since it was my first time presenting my research like this. However, I felt very relaxed and conveyed my research very well to others. I loved it"*

”

# 268

Total Student Presenters



109	Biological Sciences and Engineering
92	Social Sciences
44	Physical Sciences and Engineering
23	Humanities and Arts



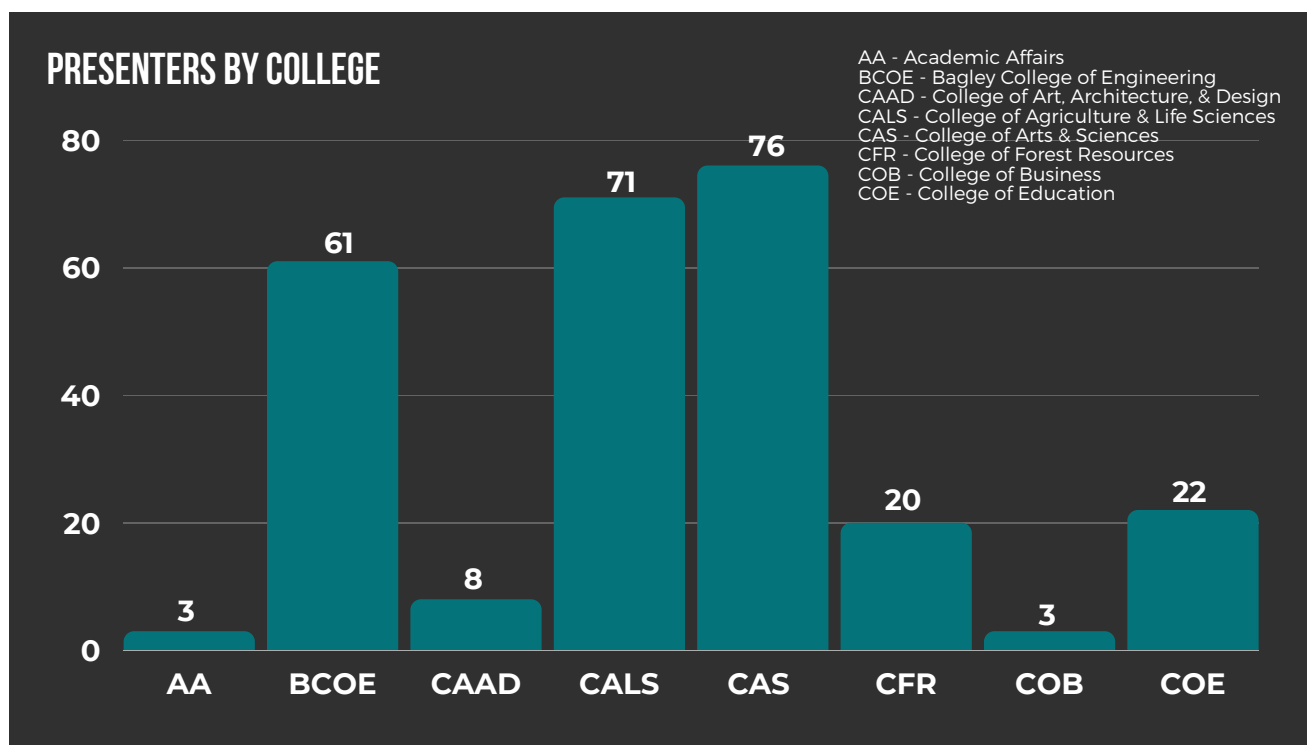
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# STUDENT PRESENTERS

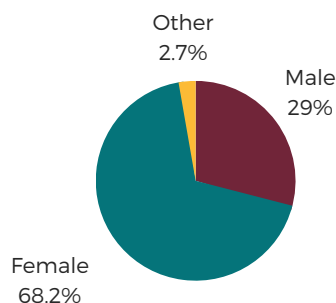
The students who participated in the Spring 2023 URS truly represented a wide range of interests and backgrounds.

Student presenters came from **46 different academic majors and 8 colleges.**

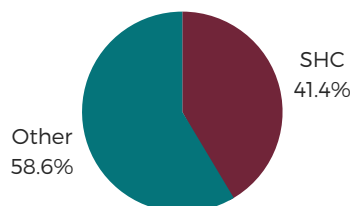
Student presenters represented **6 different schools** including Mississippi State University, Louisiana State University, Delta State University, Mississippi School for Mathematics and Science, Starkville High School, and the University of Mississippi High School.



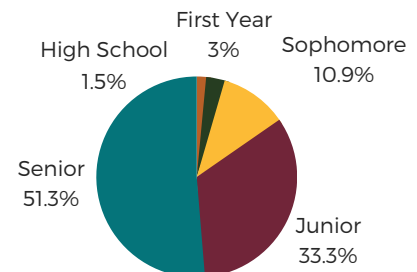
### PRESENTERS BY GENDER



### PRESENTERS BY SHACKOULS HONORS COLLEGE AFFILIATION



### PRESENTERS BY YEAR



## STUDENT PRESENTERS



52% of projects received funding

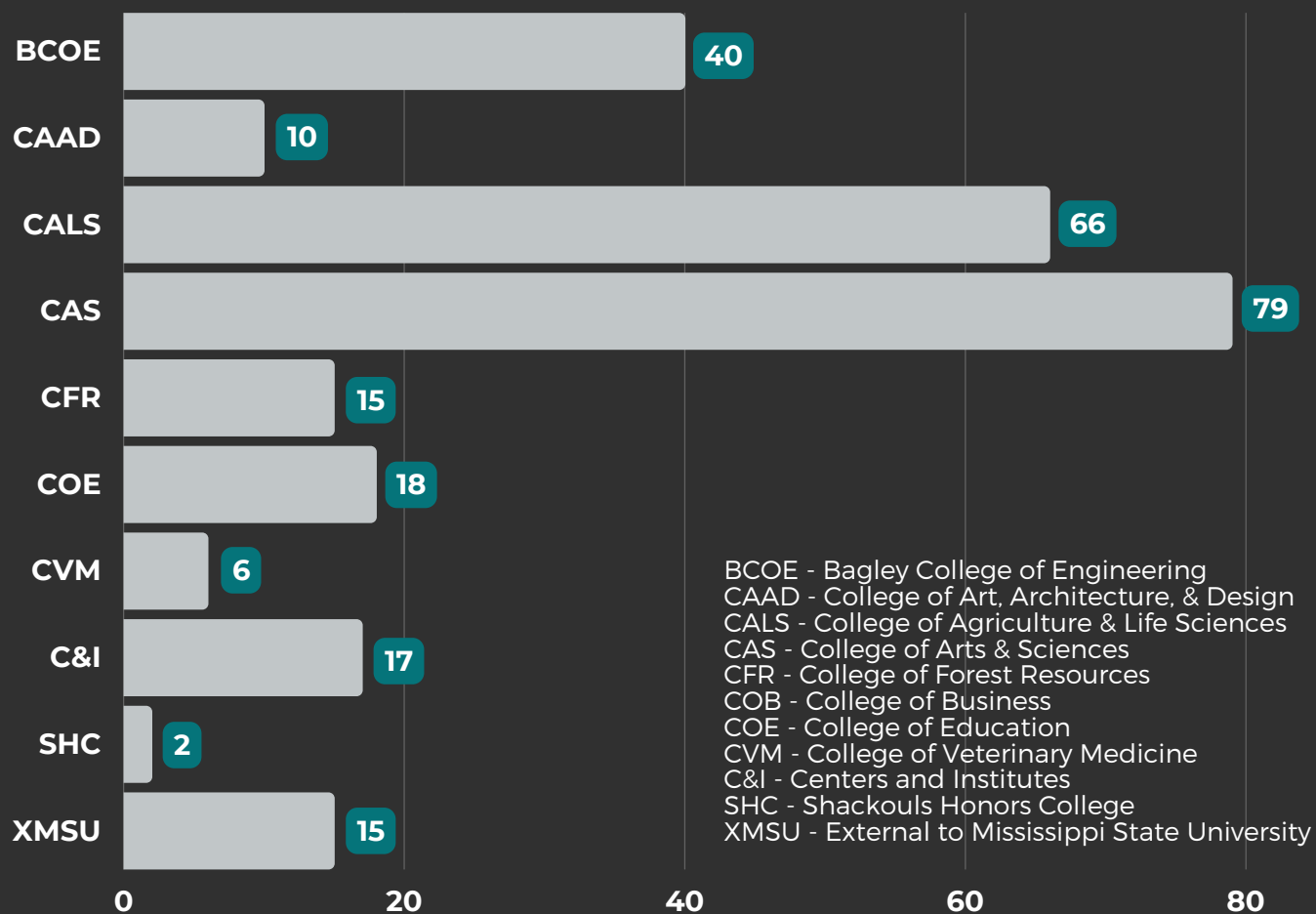


50% of projects were for class credit



91% of presenters have considered pursuing research in their future

## STUDENTS' FACULTY MENTOR AFFILIATION



# PROJECT EVALUATION

We recruited **93 faculty, staff, and graduate students** from Mississippi State University to serve as volunteer project evaluators at the URS. Evaluators provided useful feedback to student presenters in the form of written comments. This constructive feedback served to develop students' research communication skills and encourage future participation in research projects.

## 39

Participated in the  
Biological Sciences  
and Engineering  
Poster Session

## 28

Participated in  
the Social  
Science Poster  
Session

## 19

Participated in the  
Physical Science  
and Engineering  
Poster Session

## 7

Participated in the  
Humanities and Arts  
Poster Session/Oral  
Presentations

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 provided feedback on comment cards, writing both strengths and ideas for improvement for each of their assigned projects. Each student received several comment cards from evaluators coming from various academic backgrounds. We believe this helps students communicate their research to diverse audiences and think about their research in new ways.

As the URS is often a student's first time presenting research to a public audience, we are proud that the current project evaluation format provides critiques in a way that encourages continued growth and fosters excitement for future involvement in research and creative endeavors.



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## SPECIAL AREA COMPETITIONS

The Spring 2023 URS featured **12 Special Area Competitions**, designed to provide discipline and category-specific recognition of excellence in student scholarship. The Special Area Competitions were sponsored by a variety of undergraduate research partners across Mississippi State University.

# 12

Special Area Competitions were held by campus-wide research partners

# 44

Student projects received recognition from Special Area Competitions

# 78

Faculty members served as Special Area Competition Judges

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

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- 3Minute Research Pitch
- Biomedical Research
- CALS & MAFES Undergraduate Research Scholars Program
- Community-Engaged Research
- Data Science Research
- Education Research
- Engineering Research
- Forestry and Wildlife Research
- Humanities Research
- Movement Sciences & Health Research
- Public Health Research
- Tomorrow Builder Award

*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 Center for Community Engaged Learning, the Data Science Program, the College of Education, the Bagley College of Engineering, the College of Forest Resources and the Forest & Wildlife Research Center, The Institute for the Humanities, the Department of Kinesiology, the Department of Food Science, Nutrition, & Health Promotion, and Theta Tau Professional Engineering Fraternity.*





# SPECIAL AREA COMPETITION FEATURE STORY

## 3Minute Research Pitch - Sponsored by the Graduate School

The 3Minute Research Pitch (3MRP) is a competition that challenges students to present a compelling verbal presentation of their research topic and its significance in just three minutes. Modeled after the Three Minute Thesis (3MT) graduate competition, the goal of this program is to practice research communication skills. The following are student participants, who in addition to presenting in the URS, competed in the 3MRP in the afternoon of April 14th.



**Laura Alvarez Rios** - Exploring the Link between Readiness for Change and Hoarding Symptoms in Rural-Dwelling Older Adults

**Rachel Adair** - Using Diffusion of Innovation Theory Attributes to Predict Intention to Click, Make, and Share HappyHealthy Recipes on Facebook

**Addison Black** - How Does Being a Musician Affect Self-Perception?

**Juliet Buckholdt** - Picket Fences: How Alphabets Influence Design And Identity

**Elisa Castañeda** - Medellín and Its Social Urbanism Practices

**Caitlyn Fischziur** - Adversity and Resilience Training (ART) 2.0

**Cameron Fowler** - Understanding Body Composition Metrics in NCAA Division 1 Athletes

**Gabriela Gomez** - Computational Modeling of High Temperature Moving-bed Oxidation Reactor for Thermochemical Energy Storage

**Caroline Haley** - Monitoring Brain Activity During Table Tennis

**Sally Hatten** - Characterizing Neuromuscular Effort in Primary Ankle Stabilizers in Soccer Players When Performing a Dynamic Balance Test

**Clark Hensley** - ODBPlotter: An Open Source Data Processing and Visualization Tool for Wire Arc Directed Energy Deposition

**David Heson** - Developing a Python Pipeline to Process Keck Observatory Archive NIRC2 Data

**Jennifer Kemp** - Analyzing Brain Activity While Playing ESports

**Laura Grace King** - Examining Curriculum Requirements of Undergraduate Teacher Preparation Programs to Gauge Educator Knowledge of Trauma-Informed Education Frameworks

**Leon Koehler** - Hyperspectral Classification of Invasive Species by using Uncrewed Aerial Systems

**Wilson Martinez Diaz** - Modular Framework for Finite Element Analysis of Lattice Structures and Application to Post-Lumbar Interbody Fusion Cage Design

**Madeline McKnight** - Antibiotics in College Kids & Cows: It's Not as Effective as You Think

**Josie Nasekos** - Food Insecurity: Paying the Price During the COVID-19 Pandemic

**MacKenzie Paul** - Issues Affecting Cross-referrals between Oktibbeha County Clergy and Mental Health Professionals

**Evelyn Ramirez** - Latin America's Ever Growing Housing Crisis

**Thomas Roverly** - Survival and Recruitment of an Adaptive Songbird in an Urbanized Landscape

**JaKara A. Singleton** - World Building: Exploring the Didactic Relationship Between Reality and Video Games



## 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.

SHACKOULS HONORS COLLEGE

OFFICE OF RESEARCH AND ECONOMIC DEVELOPMENT

OFFICE OF THE PROVOST AND EXECUTIVE VICE PRESIDENT

CENTER FOR COMMUNITY-ENGAGED LEARNING

THE GRADUATE SCHOOL

STUDENT ASSOCIATION

THE HONOR SOCIETY OF PHI KAPPA PHI



## MORE INFORMATION

FOR MORE INFORMATION ABOUT THE URS, PLEASE VISIT  
[HTTPS://WWW.URCD.MSSTATE.EDU/SYMPOSIUM/SPRING.](https://www.urcd.msstate.edu/symposium/spring)

TO ACCESS THE SPRING 2023 ABSTRACT BOOKLET, PLEASE VISIT  
[HTTPS://WWW.URCD.MSSTATE.EDU/SYMPOSIUM/PAST-SYMPOSIA](https://www.urcd.msstate.edu/symposium/past-symposia)

FOR MORE INFORMATION ABOUT THE URCD, PLEASE VISIT  
[HTTPS://WWW.URCD.MSSTATE.EDU/](https://www.urcd.msstate.edu/)



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UNDERGRADUATE RESEARCH  
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