

NEWS FROM THE UNDERGRADUATE RESEARCH CENTER

TABLE OF CONTENTS

SCHOLARS WEEK | P. 1 - 2

Important dates and deadlines for Scholars Week 2022

NCUR HIGHLIGHTS | P. 3 - 8

Congrats to our MTSU cohort of presenters

SUMMER URECA GRANTS | P. 9

New offerings & important deadlines

URECA HIGHLIGHT: JESSIKAH RILEY | P. 10

(dis)connected podcast

WHAT IS SOAR ? | P. 11

Join us for our spring meeting

FEATURED SOAR STUDENT | P. 12 - 13

Maria Clark

MTSU LAB DIRECTORY | P. 14

We want your input!

Scholars Week 2022

Mark your calendars! Middle Tennessee State University's 16th Annual Scholars Week will take place March 21-25, 2022.

Scholars Week is a week-long celebration of research, scholarship, and creative projects featuring a variety of events hosted by academic departments and colleges. Events for 2022 are currently in the planning phase and will be added to our website as they are confirmed. Previous activities have included talks, readings, performances, posters and multimedia presentations showcasing undergraduate, graduate, and faculty scholarship.

The week will culminate in a university-wide Research and Creative Activity Exposition event featuring student research posters and creative performances on March 25th in the Student Union Ballroom.

Be sure to check our [website](#) for the most up-to-date listing of events!

Special thanks to our [Scholars Week Committee](#). We are grateful for their time and commitment to this important showcase of scholarship, research, and creative activity.

More information continued on Page 2.



SCHOLARS WEEK 2022

URC'S MISSION

The Undergraduate Research Center's (URC) mission is to be the central hub for communication about undergraduate research grant programs and other related opportunities on and off campus, to distribute university funds for undergraduate research and creative projects, and to promote dissemination of results through travel grants and by offering opportunities for students to present their research findings.



MARK YOUR CALENDARS: UPCOMING DEADLINES

January 27: Abstract submission portal opens via Award Force

February 21: Deadline to submit abstracts by midnight

February 22-25: Committee reviews abstracts

February 25: Acceptance letters and revise/resubmit letters sent to students via email.

March 25: University-wide Research and Creative Activity Exposition, Student Union Ballroom

NEED HELP WRITING YOUR ABSTRACT?

Join us for an Abstract Writing Workshop!

Friday, February 4, 2022

1-2pm | Walker Library | Room 272

1:1 guidance from our experienced student abstract writers!

[REGISTER HERE](#)

Thank you to our Scholars Week Chairs!



Faculty Chair: Dr. Stacy Fields
College of Education



Student Chair: Miquellie Bonner
Forensic Science



What is NCUR?? The National Conference on Undergraduate Research (NCUR) is dedicated to promoting undergraduate research, scholarship, and creative activity in all fields of study by sponsoring an annual conference for students.

Through this annual conference, NCUR creates a unique environment for the celebration and promotion of undergraduate student achievement; provides models of exemplary research, scholarship, and creative activity; and helps to improve the state of undergraduate education.

Each conference hosts 3,500 to 4,000 students from across the globe, presenting their research through posters, oral presentations, visual arts, and performances. Their faculty mentors also attend, often presenting in the Faculty-Administrator Network (FAN) sessions.

CONGRATS TO OUR 2022 NCUR PRESENTERS!



Maddie Aadnes

Understanding Undergraduate Biology Students Current Communication Habits About Climate Change

Mentor: Liz Barnes



Ashton Bazzel

Environmental Temperature Effects on Milk Production and Daily Activity of Dairy Cows, with Respect to Different Breeds

Mentor: Jessica Carter



Alison Blanton

Effects of Heat Stress on Blood Metabolites and Milk Quality in Lactating Holstein and Jersey Cows

Mentor: Jessica Carter



Hunter Brady

Chlorine Dioxide Gas: Potential for Use as an Anti-viral Agent

Mentor: Anthony Newsome



Ha Bui

The Application of IRT in Analyzing K-8 Teachers' Responses about Computer Science Implementation

Mentor: Elizabeth Dyer



Allyson Campbell

The Effects of Oxytocin and Atosiban Infusions into the Nucleus Accumbens on Social Reward in Male and Female Adult Mice

Mentor: Tiffany D. Rogers



Logan Carver

The Interaction of N-MYC and WDR5: Therapeutic Potential in Neuroblastoma

Mentor: April Weissmiller



Maria Clark

Synthesis and Characterization of the Therapeutic Potential of Antifungal Peptoid β -5

Mentor: Kevin Bicker



Sarah Garris

Comparison of Media Components for Somatic Embryogenesis in Tissue Callus of Vitis aestivalis 'Norton/Cynthiana

Mentor: John Dubois



Luke Gormsen

READY to SOAR: A Pilot Outreach Program to Area High Schools

Mentor: Jamie Burriss



Shelby Howard

Does Religion Moderate the Influence of Sex on Emotional Intimacy?

Mentor: Rebecca Oldham



Hannah Hudson

The Effects of Oxytocin and Atosiban Infusions into the Nucleus Accumbens on Social Reward in Male and Female Adult Mice

Mentor: Tiffany Rogers



Saman Kittani

Reports of Self-Talk when recalling disruptive, anxious, and sad events: Novel experimental design in the study of self-talk.

Mentor: Tom Brinthaup



DaVonte Lewis

From Superconductor to Anderson Insulator: Harnessing Disorder in Quantum Materials

Mentor: Hanna Terletska



Jack Maxwell

Investigating the Significance of SWI/SNF on MYCdependent Transcription in Malignant Rhabdoid Tumor

Mentor: April Weissmiller



Nash Meade

The Creature from the British Isles: The Historical and Contemporary Importance of Thomas Hobbes' Political Philosophy

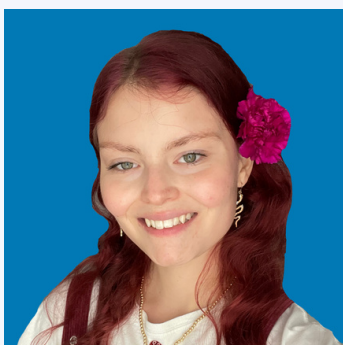
Mentor: Ron Bombardi



Isaiah Osborne

K2-Reduction and Invertibility of Unicyclic Graphs and Bicyclic Graphs

Mentor: Dong Ye



Kap Paull

READY to SOAR: A Pilot Outreach Program to Area High Schools

Mentor: Jamie Burriss



Cassandra Perrone

*Cloning Successive Generations of Industrial Hemp (*Cannabis sativa*) to Assess Cannabinoid Profiles*

Mentor: John Dubois



Isabela Ramos

The Effects of Oxytocin and Atosiban Infusions into the Nucleus Accumbens on Social Reward in Male and Female Adult Mice

Mentor: Tiffany Rogers



Pranathi Shankar

Can priming information about body odor affect perceptions of competence in a virtual interview?

Mentor: Jessica Gaby



Alexa Summersill

Understanding Undergraduate Biology Students Current Communication Habits About Climate Change

Mentor: Liz Barnes



Sophia Taylor

Synthetic Organic Electrochemistry in Deep Eutectic Solvents

Mentor: Scott Handy



Carina Vazquez

Experimental Composition of Two Systems: Ring Resonator Structures and an Acoustic Demultiplexer

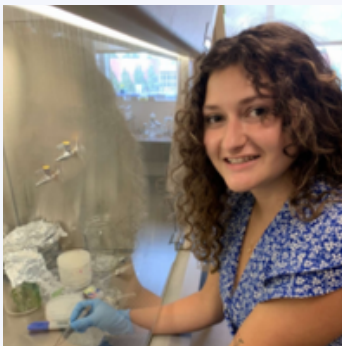
Mentor: William Robertson



Merry Young

The Sacred Bed Phenomenon: Which Sexual Attitudes Mediate the Association between Fundamentalism and Sex Guilt?

Mentor: Rebecca Oldham



Anna Yugas

*Initiation and Cannabinoid Assessment of Trichomes on Industrial Hemp (*Cannabis sativa*)*

Mentor: John Dubois

**WE ARE SO PROUD OF
OUR STUDENTS!**



SUMMER URECA GRANTS

**APPLICATION DEADLINE:
THURSDAY, APRIL 7, 2022 BY 4:30PM**



*Want to get paid to do research
or work on a creative project?*

THEN CHECK OUT OUR
UNDERGRADUATE RESEARCH AND
CREATIVE ACTIVITY GRANTS



STUDENTS MAY
APPLY FOR THE
FOLLOWING
LEVELS:

Assistant - beginners,
one semester
project, \$500 stipend

Silver Scholar -
experienced student
researcher, one
semester project,
\$1000 stipend

Gold Level -
experienced student
researcher, 2
semester project (fall
& spring), \$2,400
stipend

Platinum Level -
experienced student
researcher, full-time
summer project, \$3,500
stipend

To support our vision of nurturing a culture of research and creative activity at MTSU, the URC offers Undergraduate Research Experience and Creative Activity (URECA) grants to students three times a year. Awards range from \$500 for beginners to \$3,500 for experienced researchers.

Team applications are now being offered during the fall, spring, and summer semester. More information about the team structure can be found [here](#).

To learn more about URECA grants and how to submit proposals, check out our [website](#).

NEW!! Need assistance finding a mentoring or figuring out which level grant is best for you?

Contact our Peer Mentor Scholar, Jared Frazier, at jf5s@mtmail.mtsu.edu. Jared can also help with proposal development, budget and justification, creating a timeline, and proposal review.

More info on the next page about our new SOAR Ambassadors!

Also, check out our virtual workshop! This YouTube video features several of our undergraduate researchers and provides an overview of the services we provide in the URC. It also walks students through the necessary steps to apply for a URECA grant.

CLICK HERE

to access the video.

URECA Spotlight: (dis)Connected Podcast

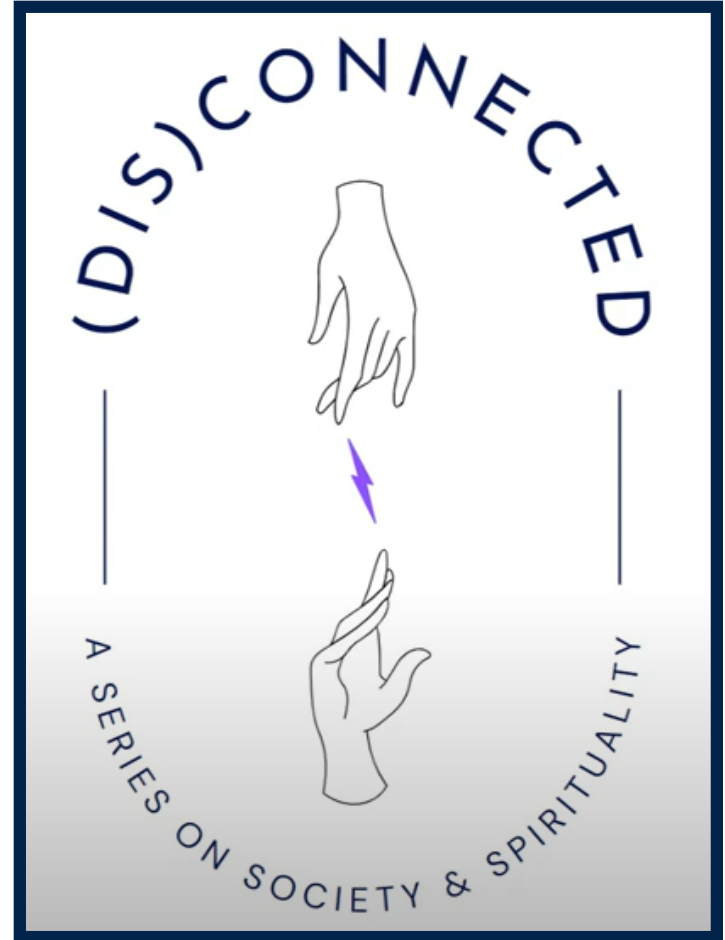
Jessikah Riley

Faculty Mentor: Dr. Rebekka King

How do people form and perceive relationships? What allows us to have relationships with supernatural agents, such as the deities we believe in?

Jessikah Riley explores these ideas by interviewing experts on her podcast, (dis)Connected. Some of the interviewed experts include psychologists, religious leaders, and professors. Funded by a Silver URECA grant, this project seeks to examine how spirituality works in the modern world.

The first eleven episodes are available on the (dis)Connected channel on YouTube.



[Click Here: \(dis\)Connected YouTube Channel](#)

"The purpose of this project is to gather information about the factors that influence how people form relationships with one another and if those factors diverge when people form relationships with religious practices and invisible supernatural agents. The beauty of this type of project and its format is that it allows a wide expanse of information to be covered that is unlikely to be tied together in another format or discipline. Information from psychology, social work, neuroscience, religious studies, religious practices, and linguistics will be presented in a way that any non-expert can easily understand."

JESSIKAH RILEY

What is the Student Organization for the Advancement of Research? AKA "SOAR"



SOAR is a student organization comprised of students who are committed to developing and sustaining an active and successful undergraduate research environment at MTSU.

Why Join?

1. It is a super cool group of students!
2. Sometimes we have snacks. If we are really lucky, we get lunch.
3. We host fun and educational events.
4. You will meet other students who are passionate about research and creative activity at MTSU.
5. Lots of opportunities for growth and professional development.
6. The option to graduate with distinction in undergraduate research!
7. And many more reasons....

Join Us

SPRING SOAR MEETING & LUNCH

**TUESDAY,
FEBRUARY 15**

11-12PM

SUB 220

[CLICK HERE TO REGISTER](#)



FEATURED SOAR STUDENT



MARIA CLARK

Major: Biochemistry

Faculty Mentor: Dr. Kevin Bicker and Dr. Charles Chusuei

Current Research Focus: Synthesis and Characterization of the Therapeutic Potential of Antifungal Peptoid β -5

Project Description: Cryptococcus neoformans is a pathogenic yeast species that is one of the leading causes of Cryptococcal meningitis. This form of meningitis, which begins with the inhalation of yeast spores, has a significant mortality rate of 81% percent, with high incidence in those who are immunocompromised. Current antifungal treatments such as fluconazole and amphotericin B have detrimental side effects, leaving a significant need for better alternative treatments. Peptoids, which are mimics of the natural peptides found in living organisms, exhibit beneficial characteristics such as protease degradation evasion and therefore longer half-lives, offer an alternative route for antifungal compound development. Peptoid compounds discovered in our own lab, such as β -5, must be characterized by determining efficacy against pathogenic species such as C. neoformans as well as the toxicity of the compounds in the presence of mammalian cells. Herein, assays for determining these factors have shown that β -5 has low toxicity in several mammalian cell lines and significant and rapid inhibition of C. neoformans.



These characteristics, which are linked to the compound's structure, suggest that future investigation can focus on working to further enhance the compound's overall efficacy through structural modification.

Why does this topic interest you?

Treatments for patients at any level should aim to offer the most benefit and the least possible detriment to a patient's health. As a researcher, it is therefore the goal to assess aspects that can be improved on to achieve this goal. In our case, this means focusing on the development of an antifungal compound that is effective while inducing minimal toxicity. This type of research epitomizes the overarching goal of science to continuously develop and improve as our understanding and knowledge of systems expands over time. Personally, the drive to keep seeking better alternatives is one of the greatest aspects of compound development research.

Additional Interests:

Blood Brain Barrier Permeability of Antifungal Compounds

FEATURED SOAR STUDENT



MARIA CLARK

What are your professional aspirations?

I currently plan to attend medical school after graduation, and ultimately specialize in neurodegenerative medicine and research. My experience with undergraduate research has helped me realize I want to continue doing research during medical school and as a component of my career as a physician. I believe building a background in research will allow me to develop research projects centered around the needs of my patients and subspecialty, in a more hands on capacity.



Do you have any advice for future researchers?

No matter what your career goals are, what you think you might be interested in doing, TRY RESEARCH! Some people find out it is an aspect of education that is fascinating and exciting to be a part of during your undergraduate years. This can open up a lot of new pathways, and can maybe even help you narrow down what you might be interested in pursuing after graduation. On the other hand, it can be enlightening to find out that you don't see yourself wanting to do research as a significant part of your career in the future. I think this is equally as important to learn about yourself, as it can make a big impact on your career choices and finding something you enjoy doing. Overall, exploring this option during your undergraduate degree, where you have strong mentorships available as well as the support of fellow students in research is an amazing way to build your resume and explore your personal interests.

check out more SOAR profiles here

MTSU.EDU/URC/SOAR-PROFILE/

Coming Soon! MTSU Lab Directory

Attention Faculty:

Do you have a laboratory on campus?

Are you accepting individual students for research projects?

The Undergraduate Research Center is creating the *URC Lab Directory* to inform potential researchers of laboratories and research opportunities across campus! This directory and the individual labs within it will be promoted through the URC's social media accounts and during URC and SOAR events! Please fill out the survey by clicking the button below. Feel free to reach out to our Social Media Ambassador, Dara Zwemer, with any questions at duz2a@mtmail.mtsu.edu

CLICK HERE



Tell Us About Your Publication!

Have you recently published your research?

Get the recognition you deserve!

CLICK HERE

To Submit Your Work!

Publications will be featured on the Undergraduate Research Center's website! View our students' prior publications by [clicking here](#).

