

NEWS FROM THE UNDERGRADUATE RESEARCH CENTER

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Submit your application for Spring 2023

JOIN US! Scholars Week 2023

Mark your calendars! Middle Tennessee State University's 17th Annual Scholars Week will take place March 20-24, 2023.

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 2023 include talks, readings, performances, a speech competition, keynote speakers, posters and multimedia presentations showcasing undergraduate and graduate scholarship.

The week will culminate in a university-wide Research and Creative Activity Exposition event featuring student research posters and creative performances on March 24th in the Student Union Ballroom.

More information about college-specific events can be found in the newsletter. 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 Pages 2-4



**SCHOLARS
WEEK 2023**

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.

SCHOLAR WEEK 2023

FEATURED EVENT: ***RESEARCH & CREATIVE ACTIVITY EXPOSITION***

Friday, March 24 | Student Union Ballroom | 10:30am - 2:30pm

The Scholars Week Committee was thrilled to receive over 150 applications from a wide variety of academic disciplines across the academic colleges.

We are looking forward to seeing many dynamic presentations including several hands-on experiences, multi-media presentations, an art exhibit, and a variety of creative performances from dance, theatre, recording industry, and English.

Schedule of Events:

10:30-12:00pm Poster Session #1
12:00-1:00pm Lunch & Half-Time Show
1:00-2:30pm Poster Session

More information regarding poster printing and presentation resources can be found on our website.

SHOUT OUT TO OUR AMAZING SCHOLARS WEEK CHAIR, CASEY TOMLIN!

We are very grateful to Casey for all her work on Scholars Week. She organized classroom "pop-ins", designed our SW t-shirt and yard signs, helped recruit volunteers for the Exposition, and so much more. Thanks for being a GREAT student chair, Casey!



Interested in volunteering? [Email Casey!](#)
We would love to have you join us.

College of Liberal Arts Day

SCHOLARS WEEK 2023

Wednesday, March 22
Simmons Amphitheater
MTSU Honors College
HONR 106

CALL FOR PARTICIPANTS

Students and faculty are invited to join us for CLA Scholars Day 2023. The event will feature scholarly and creative presentations as part of MTSU Scholars Week. Participation from all disciplines within the college is encouraged, as are interdisciplinary proposals.

Presentations will be made in the following categories:

- Individual Research Presentations by students and faculty (approx. 15 min.)
- Panel Presentations (30-60 minutes)
- MTSU Arts Projects – creative performances by students and/or faculty

To participate, please complete the online form:

[CLA Scholars Day Presentations.](#)

Submissions must be received by Friday, March 3.

CLA Scholars Day will also feature the MTSU Scholars Week Annual Speech Contest, hosted by the Department of Communication Studies. The event, co-hosted by the College of Liberal Arts, is open to any current MTSU student who has completed or is enrolled in COMM 2200 through the University. Additional information and applications for this event are online at www.mtsu.edu/speechcontest.

COLLEGE OF BASIC AND APPLIED SCIENCES DAY

Scholars Week

Tuesday, March 21st -
Science Building Atrium
11:00am-1:00pm

- **Poster session highlighting student research**
- **Refreshments**
- **Departmental Highlights**
- **Keynote Address by Dr. H. Philip Stahl, a Senior Optical Physicist at NASA Marshall Space Flight Center**
- **Poster Session Awards**

Students wanting to participate in the Poster Session should register through the Scholars Week submission portal by February 28th.

Additional information on CBAS Day can be found at: <https://www.mtsu.edu/cbas/scholars-day.php>

POSTERS AT THE CAPITOL



Group Photo with Governor Bill Lee

Photo Credit: Theresa Montgomery/Office of Gov. Bill Lee

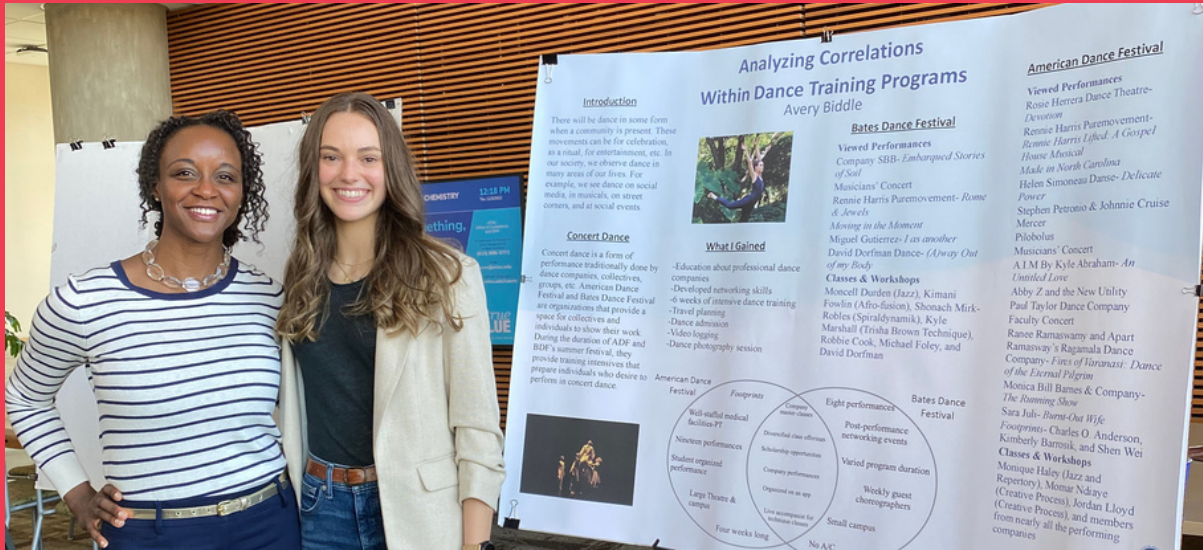


Posters at the Capitol 2023 kicked off with a greeting from Governor Lee and group picture. Afterwards, participants spent time with representatives and senators talking through their research, future career plans, and learning more about how to be engaged citizens. Thank you to MTSU's very own Tennessee STEM Education Center for hosting this wonderful annual event!

Be sure to check out this [article](#) for a deeper dive into the event.

SUMMER URECA GRANTS

APPLICATION DEADLINE:
THURSDAY, APRIL 6, 2023 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



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, Foram Patel at fp2n@mtmail.mtsu.edu. Foram can also help with proposal development, budget and justification, creating a timeline, and proposal review.

UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY AWARDS SPRING 2023

ASSISTANT AWARDS

Grayson Cunningham - Implementation of an Ideal Automotive Engineer Workstation
Faculty Mentor: Jorge Vargas, Engineering Technology

Aura Ganster - Study of *Saccharomyces boulardii* as a Probiotic Starter Culture in Makgeolli Production
Faculty Mentor: Seockmo Ku, Agriculture

Sammi Hamdan - Identifying Epileptic Seizures in EEG Signals Using Machine Learning
Faculty Mentor: Khem Poudel, Computer Science

Zakayla Thomas - Influence of Diet on Body Odor and Social Judgments
Faculty Mentor: Jessica Gaby, Psychology

Wisdom Thomas - The Cold War in the Caribbean
Faculty Mentor: Sekou Franklin, Political Science

SILVER AWARDS

Marzea Akter - EXAMINE THE EFFECT OF ACUTE OXYTOCIN ADMINISTRATION ON SOCIAL BEHAVIOR IN MALE AND FEMALE MICE
Faculty Mentor: Tiffany Rogers, Psychology

Steven Brown - Social motivation between different types of mice.
Faculty Mentor: Tiffany Rogers, Psychology

Jennifer Cunic - Sky Never Ends: Exploration of Shadow where Light and Darkness Dance
Faculty Mentor: Lauren Shouse, Theater

James Evans - Investigating a New Oncogenic Pathway in Rhabdoid Cancers
Faculty Mentor: April Weismiller, Biology

Josh Griggs - Measuring changes in CITED1 expression in THP-1 and FLAM cells in response to IFN γ treatment.
Faculty Mentor: David Nelson, Biology

UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY AWARDS SPRING 2023

SILVER AWARDS

Priscilla Hammermeister - Financial Success based on Maslow's Hierarchy of Needs: Evidence from a Survey of Tennessee University Alumni.
Faculty Mentor: Murat Arik, Business

Cheyenne Jones - Exposing New Oncogenic Pathways in Malignant Rhabdoid Tumor
Faculty Mentor: April Weissmiller, Biology

Christopher Meherg - Applications and Experimentation of New Algorithm for the Discrete Gauss Transform?
Faculty Mentor: Jing Kong, Mathematics

Isaiah Osborne - Study of Sign-Invertibility of Graphs with many Cycles
Faculty Mentor: Dong Ye, Mathematics

Ross Sibley - Therapeutic Characterization of Cyclic Peptoids Against Cryptococcus neoformans and Candida albicans
Faculty Mentor: Kevin Bicker, Chemistry

Garrett Tessmer - Investigating the Effect of Colchicine Inhibitors in Cancer
Faculty Mentor: April Weismiller, Biology

Weston Williams - Rapid foodborne pathogen Detection via Tangential Flow Nano/Microfilter Bioseparation System
Faculty Mentor: Seockmo Ku, Agriculture

Gold Awards

Eden Anderson - Detecting Estrogen Pollution in the Stones River Watershed
Faculty Mentor: Rebecca Seipelt-Thiemann, Biology

Audrey Lauerhass - Analysis of Artifact Distribution to Determine the Final Resting Place of a World War II B-17G Airplane Crash in France using ArcGIS
Faculty Mentor: Tiffany Saul, Forensic Science

UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY AWARDS SPRING 2023

TEAM AWARDS

Christopher Cooper, Makenzie Johnson, and Lillian Reid - Spring Festival of New Plays
Faculty Mentor: Claudia Barnett, English

Brooks Leyhew and Skylar Carson-Reynolds - Exploring Genetic Diversity and distribution of Freshwater spongers in Tennessee
Faculty Mentors: Cole Easson, Biology

Victoria Trevino and Alexandria Hamilton - The Comparison of Two Different World-Learning Strategies in Undergraduate University Students
Faculty Mentors: Kathryn Blankenship, Health and Human Performance

Xintong Cao, Pengyu Zhu, and Minyuann Zhao - Tree-Based Machine Learning Algorithms for Analytics of Online Shopper's Purchasing Intention
Faculty Mentors: Lu Xiong, Mathematics

Chelsea Rolle and Kadence Riggs - Exploring the Relationship between STEM Graduate Teaching Assistants' Perceived Teaching Autonomy and Pedagogical Discontentment: An Explanatory Mixed Methods Study
Faculty Mentor: Grant Gardner, Biology



Thank you...

to Luke Gormsen & Marzea Akter for helping greet potential and future students at the Honors College Open House.

And, shout out to Rob Patterson in Student Services & Admissions for allowing us to join in on the fund!



FEATURED SOAR STUDENT

Student Organization for
the Advancement of Research

LESLIE GONZALEZ SALAZAR

Major: Forensic Science

Faculty Mentor: Dr. Yangseung Jeong

Current Research Focus:

sex estimation of Korean population using CT images. Additional Interests: Biology, Chemistry, Crime Scene Investigation, Anthropology, Psychology

Project Description:

Forensic anthropologists reconstruct the biological profile of the skeletal remains recovered from a crime scene. Traditionally, sex estimation of an adult has been conducted using the morphological differences observed on the cranium and pelvic bone. However, in a real forensic context, the preservation state of these bones is often compromised due to various taphonomic factors such as animal scavenging. The past two decades have seen a drastic growth of the 3D imaging technology in the field of forensic anthropology as a promising non-invasive method. This project aims to develop a quantitative method toward the sex estimation of Korean population based on the difference of relative bone density using three-dimensional (3D) computed tomography (CT) images and multiple 3D image processing software.

Why does this topic interest you?

I am hopeful that someday forensic anthropologists will be able to use other methods such as three-dimensional (3D) computed tomography (CT) images and 3D image processing software to supplement the current sex estimation methods by demonstrating the possibility of bone density as a useful sex indicator and enhancing the accuracy of sex estimation.



What are your professional aspirations?

As a Forensic science major, I aspire to work as a Special Agent /Criminal Investigator for the Federal Bureau of Investigation (FBI). However, before applying to the FBI, I would like to work in a local crime lab to develop relevant experience.

Do you have any advice for future researchers?

My advice is to go for it! Do not be intimidated to share your ideas and step out of your comfort zone. MTSU is full of wonderful faculty members and students that are willing to collaborate with you and help you succeed! Being able to conduct research is truly a unique experience and I would advise all students to at least give it a chance, because at the end of the day "you miss 100% of the shots you don't take."

FEATURED FACULTY MENTOR

DR. REBEKKAH KING

Department: Philosophy and Religious Studies

Bio: Dr. King is an Associate Professor in the Department of Philosophy and Religious Studies. She holds a Ph.D. in Religious Studies from the University of Toronto. She teaches courses on global Christianity, Judaism and Islam, comparative religions, religion and film, the figure of Jesus, and the academic discipline of religious studies. Before coming to MTSU in the fall of 2013, she held a postdoctoral fellowship at the Candler School of Theology, Emory University. Trained as a cultural anthropologist, Dr. King's research looks at the negotiation of boundaries within contemporary North American Christianity. Her first book (under contract with New York University Press) outlines the development of progressive Christianity as a variety of Christianity that is simultaneously secular and religious. Her second major project which has received funding from the American Academy of Religion Individual Research grant and MTSU's FRCAC program explores the syntheses of Judaism, indigenous religions, and Christianity within a movement known as Jewish Affinity Christianity. Dr. King currently serves as the Vice President of the North American Association for the Study of Religion, Co-chair of the Sociology of Religion program unit of the American Academy of Religion, and is one of the editors of Critical Research on Religion.

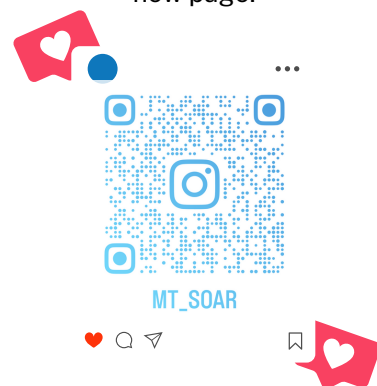
Research Interests: Global Christianity, North American religions, anthropology of religion, secularism, Bible and its reception, method and theory in the study of religion, ethnographic field methods, religion and the public sphere, teaching for civic engagement



URECA Projects:

- (dis)Connected: A Series of Interviews on Society and Spirituality in the Modern World (Fall 2021);
- Non-Christian and Immigrant Christian Communities and the Programs Available to their Youth in Middle Tennessee (Spring 2019)

Follow us @mtsoar
and let others know about our
new page!



**Check out more
SOAR profiles here!**

[MTSU.EDU/URC/SOAR-
PROFILE/](https://www.mtsu.edu/urc/soar-profile/)

INTERNSHIPS & RESEARCH OPPORTUNITIES

Check out the following opportunities for spring & summer research !

[2023 Summer Scholars Program](#)

- This 10-12 week, funded program gives students research-intensive training, in the field of anti-aging and rejuvenation biology at our Research Center in Mountain View, CA and in labs all over the country. Eligibility details are available [here](#), and placements are listed [here](#).

[2023 -2024 Postbaccalaureate Fellowship](#)

- This 10-month, funded program gives students the opportunity to conduct research in a gap year format, in the field of anti-aging and rejuvenation biology at our Research Center in Mountain View, CA and in labs all over the country. Eligibility details are available [here](#), and placements are listed [here](#).

[Summer REU in Sensing and Smart Systems-Florida Atlantic University](#)

- Florida Atlantic University's Institute for Sensing and Embedded Network Systems Engineering (I-SENSE) hosts an intensive summer research program in sensing and smart systems for talented undergraduate students across the country. Closely related to the Internet of Things, smart systems represent an emerging class of distributed systems that provide real-time awareness of conditions, trends, and patterns to support improved decision-making, and often, automation. The on-campus research will focus on I-SENSE's three main program areas: Infrastructure Systems, Marine and Environment and Health and Behavior.

[Claudine K. Brown Internship in Education - Smithsonian](#)

- The internships are intended to increase participation of underserved students who are under-represented in the education and museum leadership field. Interns experience opportunities in the central education office and collaborate with offices, museums, and research centers throughout the Smithsonian Institution where they help to create, develop, and disseminate innovative educational programs and resources at the Smithsonian, online, in the classroom and in communities. Each year, the Office of the Under Secretary for Education (OUSE) identifies new projects for the Claudine K. Brown Internship awardees. In 2023, the Claudine K. Brown interns will have an opportunity to learn through engagement with mentors at the OUSE central education office. In Summer 2023, internships will be offered remotely for 8 weeks.

[2023 DOE Scholars Program - Department of Energy](#)

- The DOE Scholars Program is designed to attract talented undergraduate and graduate students, and recent graduates to research, technical and professional opportunities within U.S. Department of Energy (DOE) and organizations that support the DOE mission. • Energy Sources and Security • Clean Energy • Energy Efficiency • Climate Change • Environmental Management • Nuclear Security • Artificial Intelligence • Emergency Response • Management and Operations • Cyber Security • Safeguards and Security As a participant in the DOE Scholars Program you will have the opportunity to explore a federal career with DOE and gain a competitive edge as you apply your education, talent and skills in a variety of settings within the DOE complex.

INTERNSHIPS & RESEARCH OPPORTUNITIES

Check out the following opportunities for spring/summer research !

[AHA Supporting Undergraduate Research Experiences - Boston University](#)

- The AHA SURE Summer Program is an excellent way for undergraduate students to garner research experience under guided mentorship from experts in the field of cardiovascular research. Through a partnership with the American Heart Association, mentored 10- to 12-week summer research experiences are available for at least three students from racial/ethnic or LGBTQ+ groups under-represented in science.

[Astrophysics REU - West Virginia University](#)

- This is a 10-week summer program for undergraduate student research, funded by the National Science Foundation (NSF). West Virginia University is proud to host a REU site focused on astrophysical research. Research projects will focus on the Milky Way interstellar medium, transient astrophysical phenomena, pulsars, supermassive black holes, planetary atmospheres, young stellar clusters, and gravitational waves. Each student will be associated with a specific research project, where they will work closely with their faculty research mentor and other researchers. Students receive a \$5,000 stipend, \$300 in travel expenses, meals, and lodging.

[Cancer Research Summer Internship Program - University of Michigan - University of Michigan](#)

- As part of its Cancer Biology Training Program, the University of Michigan Rogel Cancer Center provides exposure to cancer research for highly motivated and talented college undergraduates. This program gives the successful applicants an opportunity to explore potential careers in the field of cancer research. Internships are aimed at students who are completing their sophomore or junior undergraduate year this spring. Applications are encouraged from individuals from minority groups that are currently underrepresented in biomedical and behavioral research. The program will run for a ten-week period in summer 2023 (May 24 - August 2). Students selected are matched with an appropriate U-M faculty. Interns are paid a stipend of \$5,500 and are responsible for their own housing and travel arrangements. Interns work directly in a cancer laboratory setting. Program mentors give presentations on their work in cancer every other week at an informal luncheon that interns are required to attend. At the end of the internship program, each intern will be asked to give a short presentation on their work.

Interested in more opportunities? [Click here](#) to explore more internship/research opportunities!

UNDERGRADUATE RESEARCH GRADUATION DISTINCTION



LEVELS OF RECOGNITION

Distinction in Undergraduate Research

- Students receive a dark blue, light blue, and white cord

Scholar Distinction in Undergraduate Research

- Students receive a dark blue, light blue and white cord
AND a medallion (see image to the right)

[VISIT OUR WEBSITE TO](#)

[SUBMIT YOUR APPLICATION!](#)

DISTINCTION CRITERIA

Distinction in Undergraduate Research

*Students must fulfill all requirements

- 1 Successful completion of an Assistant level URECA project - 50 hours of research or more.
- 2 Poster presentation or creative performance at one of the URC's signature events: Fall Open House, Scholars Week, or Summer Research Celebration.
- 3 Active participation for at least one academic year in the Student Organization for the Advancement of Research (SOAR).
- 4 Confirmation of support from URECA faculty mentor.

Scholar Distinction in Undergraduate Research

*Students must fulfill all requirements

- 1 Successful completion of a Scholar level URECA project - 100 hours of research or more.
- 2 Poster presentation or creative performance at one of the URC's signature events: Fall Open House, Scholars Week, or Summer Research Celebration.
- 3 Active participation for at least one academic year in the Student Organization for the Advancement of Research (SOAR).
- 4 Poster or presentation at the National Conference on Undergraduate Research or published in a peer-reviewed academic journal.
- 5 Confirmation of support from URECA faculty mentor.