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.

Congrats, Seniors!

As the saying goes, all good things must come to an end. In this edition of our newsletter, we bid farewell to a truly exceptional group of students who are taking the next steps in making their dreams become a reality. Many are headed to top-notch grad schools and medical schools, while others are taking a gap year or entering the "real world" (check out their profiles on pages 2-8 to see where they are headed next). All the blood, sweat, and tears these seniors have put into their coursework, research, and extracurriculars have paid off exponentially, and we could not be more proud. Congratulations on all your accomplishments!

Seniors, it has been a sincere joy to watch you grow into such wonderful, young scholars who will persevere in making the world a better place. You will be missed tremendously, but we wish you great happiness and know you will be successful in the adventures that lie ahead.

And finally, a special thank you to our outstanding faculty mentors who invested massive amounts of time and energy into developing and mentoring these students. Without you, an exceptional undergraduate research experience would not be possible.

Farewell, seniors - onward and upward!

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CONGRATULATIONS GRADUATES!
HIGHLIGHTING GRADUATING SOAR MEMBERS AND RESEARCHERS

SOPHIA TAYLOR
Major: Chemistry, ACS Certified
Faculty Mentor: Dr. Scott Handy
Post-graduation plans: Sophie is planning to attend The Ohio State University to pursue her PhD in Chemistry.

DEVIN WEAVER
Major: Chemistry, ACS Certified
Faculty Mentor: Dr. Kevin Bicker
Post-graduation plans: Devin is planning to attend Wake Forest University to pursue his PhD in Chemistry.

MIQUELLIE BONNER
Major: Forensic Science
Faculty Mentors: Dr. Mengliang Zhang & Dr. Ngee Sing Chong
Post-graduation plans: Shadow pathologists' assistants and gain certification in a pathology lab. This work experience will add to her excellent academic background and strengthen her graduate applications.

Miquellie served as the first SOAR Scholars Week Ambassador.
CONGRATULATIONS GRADUATES!
HIGHLIGHTING GRADUATING SOAR MEMBERS AND RESEARCHERS

HANNA KOLWYCK
Major: Speech Language Pathology and Audiology
Faculty Mentor: Dr. Rebecca Fischer
Post-graduation plans: Hanna is planning to attend graduate school for a AuD in Audiology at the University of Memphis! Hanna then plans to become a practicing audiologist and to help people by diagnosing, treating, and managing their hearing loss. She hopes to improve her patients' quality of life and communication with others.

LOGAN CARVER
Major: Psychology
Faculty Mentor: Dr. April Weissmiller
Post-graduation plans: Gap year to study for the MCAT and then on to medical school.

DAVONTÉ LEWIS
Major: Physics
Faculty Mentor: Dr. Hanna Terletska
Post-graduation plans: DaVonté is planning to go to graduate school for a PhD in Physics at Johns Hopkins University.
CASSANDRA PERRONE
Major: Forensic Science
Faculty Mentor: Dr. John DuBois
Post-graduation plans: Cassandra is planning to go to graduate school in Biology at Middle Tennessee State University! She plans to go to medical school after graduating from graduate school. She eventually plans to become a forensic pathologist.

MARIA CLARK
Major: Biochemistry
Faculty Mentor: Dr. Kevin Bicker
Post-graduation plans: Maria is attending Medical School at The University of Kentucky.

MADELINE AADNES
Major: Biology
Faculty Mentor: Dr. Liz Barnes
Post-graduation plans: Graduate school for Marine Science at Nova Southeastern University. Madeline hopes to be a marine biologist and work to conserve the world's ecosystems.
HA BUI

Major: Chemistry  
Faculty Mentors: Dr. Elizabeth Dyer & Dr. Chengshan Wang  
Post-graduation plans: Ha is attending Rice University to pursue a PhD in Chemistry.

GAVIN STRAWN

Major: Theatre  
Faculty Mentor: Professor Lauren Shouse  
Post-graduation plans: Gavin is planning to attend UT Austin for an MFA in Lighting Design! He hopes to continue researching as much as possible while attending.

HANNAH HUDSON

Majors: Biochemistry & Psychology  
Faculty Mentors: Dr. Tiffany Rogers & Dr. Elizabeth Dyer  
Post-graduation plans: Hannah is attending Wake Forest University to pursue a PhD in Neuroscience.
CONGRATULATIONS GRADUATES!
HIGHLIGHTING GRADUATING SOAR MEMBERS AND RESEARCHERS

MERRY YOUNG
Major: Psychology
Faculty Mentor: Dr. Rebecca Oldham
Post-graduation plans: Merry is planning to attend graduate school in Social Work at the University of Kentucky! She hopes to provide mental health services to military members and their families.

ALISON BLANTON
Major: Animal Science
Faculty Mentors: Dr. Jessica Carter & Dr. Maegan Hollis
Post-graduation plans: Alison is planning on attending The University of Tennessee College of Veterinary Medicine! She plans to pursue a research or lab position in the teaching hospital to continue doing research.

JIALIN ZHANG
Major: Actuarial Science
Faculty Mentor: Dr. Don Hong
Post-graduation plans: Jialin is planning to attend graduate school in Actuarial Science at University of Illinois at Urbana-Champaign. Jialin then plans to acquire an industry position.
KAP PAULL

**Major:** Allied Health Science Pre-Pharmacy  
**Faculty Mentor:** Dr. Margaret Brooker  
**Post-graduation plans:** After graduation, she plans on attending pharmacy school, and has already been accepted at UNC-Chapel Hill.

Kap served as the READY to SOAR Ambassador!

PRANATHI SHANKAR

**Major:** Psychology  
**Faculty Mentors:** Dr. Jessica Gaby  
**Post-graduation plans:** Pranathi is planning to attend Tennessee State University to pursue her Masters in Counseling Psychology.

ANIKA CHOWDHURY

**Major:** Biology  
**Faculty Mentor:** Dr. John DuBois  
**Post-graduation plans:** Anika is planning to apply to medical school this summer.
CONGRATULATIONS GRADUATES!
HIGHLIGHTING GRADUATING SOAR MEMBERS AND RESEARCHERS

DARA ZWEMER

Major: Pre-Graduate Psychology
Faculty Mentor: Dr. Emily Farris, Dr. Tim Odegard, and Dr. John Pennington

Post-graduation plans: Dara is planning to attend graduate school for their PhD in Experimental (Cognitive) Psychology at Oklahoma State University! They will be working on a grant to study memory errors related to eyewitness memory. After graduate school, she aspires to be a professor and to lead her own research lab studying law and policing relative to processes of memory and attention.

Dara served as the URC Communications and Social Media SOAR Ambassador.

We are so proud of you and all that you have accomplished during your time at MTSU! You will be sincerely missed, but we know you will be successful in the adventures that lie ahead.
Major: Chemistry

Faculty Mentor: Scott Handy

Current Research Focus:
Synthetic Organic Electrochemistry in Deep Eutectic Solvents

Project Description:
We combine the analytical method of electrochemistry with physical and organic chemistry to create sustainable methods of organic synthesis. We are the first lab to combine Deep Eutectic Solvents - recyclable ionic liquids at room temperature - and the process of organic electrosynthesis to produce a highly sustainable and recyclable allylation reaction, which could be applied to both the pharmacological and materials industries in the future.

Why does this topic interest you?
I really love sustainability and organic chemistry, and this project combines the two! It feels great to do research that benefits both the organic synthesis community and the planet.

What are your professional aspirations?
I'm on track to start my Ph.D. in August. Eventually, I would like to work for a company developing sustainable methods of materials synthesis.
State of the Art MTSU Laboratories, all in one place.

The URC is proud to announce our new laboratory directory. This resource will allow students to learn about excellent MTSU labs across several disciplines. Both new and experienced student researchers can utilize this document to find research positions, set up collaborations with other labs, or to establish a specific thesis mentor.

This directory is also a resource for faculty members seeking student researchers. Each lab's accomplishments, publications, and goals are detailed within the pages of this directory.

This directory contains laboratory descriptions, the key skills necessary for each lab position, and semester openings for several labs, divided by specific college. To access the directory, click the button on the right or scan the QR code.

PDF copies of the directory are also available to print.

Email Dara Zwemer, the URC Secretary and Social Media Ambassador, with questions about the directory or for a PDF: duz2a@mtmail.mtsu.edu
ASSISTANT AWARDS

Selena Casey - Kefir Grain Growth: Milk vs Whey (Sweet, Neutral, Acidified)
Faculty Mentor: Keely O'Brien, ABAS

Valerie Davis - How do darters adapt to fast waters? A surface texture analysis of scale morphology in Etheostoma blennioides and Nothonotus rufilineatum
Faculty Mentor: Jessica Arbour, Biology

Kendra Givens - Gated Set Transformer XL with Variable Length Set Output
Faculty Mentor: Joshua Phillips, Computer Science

Dalton Lewis - Evaluation of Microplastic Contamination in Food Waste Composts and Anaerobic Digestates
Faculty Mentor: Mina Mohebbi, Engineering Technology and Industrial Studies

Kate Matthews - What Leads to Productive Procrastination in Salespeople?
Faculty Mentor: Diane Edmondson, Business

Benjimen Neal - Bringing 16th Century Music to 21st Century Audiences: Three Madrigals for Reed Quintet
Faculty Mentor: David Cyzak, Music

Faculty Mentor: Kahler Stone, Health and Human Performance

Sydney Scott - Exploring the prevalence of Bovine leukemia in the MTSU beef and dairy herds
Faculty Mentor: Jessica Carter, Agriculture

Michael Tonos - The Recording and Manipulation of Natural Sound Sources into a Musical Work.
Faculty Mentor: Michael Fleming, Recording Industry

Lindsey Tran - Ionization of 4T1 Breast Cancer Cells using Laser-Trapping Technology to Improve Efficiency of Breast Cancer Treatment
Faculty Mentor: Daniel Erenso, Physics
SILVER AWARDS

**Charlotte Daigle** - Through a Different Eye: An Honors Creative Thesis  
*Faculty Mentor: Rhonda McDaniel, English*

**Sara Hauver** - Analyzing the Interaction between Fentanyl and Eosin Y using GC-MS and FTIR to Refine Colorimetric Method for Detecting Fentanyl  
*Faculty Mentor: Ngee Chong, Chemistry*

GOLD AWARDS

**David Bobick** - Analysis of Hemp Specific Nutrient Solutions  
*Faculty Mentor: Nate Phillips, Agriculture*

**Dominic Marcoaldi** - Prescriptive to Descriptive: The Role of Philosophy of Language in Building Epistemic Community  
*Faculty Mentor: Mary Magada-Ward, Philosophy*

PLATINUM AWARDS

**Karolin Abouelyamin** - Student Discourse Networks and Group Composition in a POGIL-based General Chemistry Class  
*Faculty Mentor: Joshua Reid, TSEC*

**Avery Biddle** - Analyzing Correlations Within Educational Dance Training Programs  
*Faculty Mentor: Jade Treadwell, Theatre*

**William Lickman** - Recovering a Fortress: Photo and Video Support to MTSU’s Forensic Aviation Archaeology Program  
*Faculty Mentor: Tiffany Saul, Sociology*

**Foram Patel** - Validating the 1GB1 folding pathway using Greedy-Proximal A*  
*Faculty Mentor: Joshua Phillips, Computer Science*

**Sylvia Zakher** - Student Discourse Networks and Group Composition in a POGIL-based General Chemistry Class  
*Faculty Mentor: Joshua Reid, TSEC*
TEAM AWARDS

**Hannah Bates and Kathryn Baumann** - A Mineralogical and Geochemical Study of Metamorphic Rocks at Glade Gap in the Blue Ridge Mountains, North Carolina  
*Faculty Mentors: Warner Cribb, Geosciences*

**Garrick McGee, Alden McGinnis, Sara Mashburn, and Autumn Hubbard** - Word Learning in Undergraduate Students  
*Faculty Mentors: Kathryn Blankenship, Health and Human Performance*

**Fatima Razzaq, Steven Brown, and Kyle Hensley** - Exploring the Role of Mesolimbic Nuclei in Social Motivation in Mice  
*Faculty Mentors: Tiffany Rogers, Psychology*

**Claire Matzek and Clay Stalzer** - Host skin chemistry drives fungal-fungal interactions in a host-mycobiome-pathogen system  
*Faculty Mentors: Donald Walker, Biology*

**Skylar Carson Reynolds and Molly Cooper** - Effects of Pregnancy on the Common Watersnake in Tennessee  
*Faculty Mentors: Vincent Cobb, Biology*

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**Thank You to our 2021-22 URECA Committee**

Justin Miller, Chair, Chemistry  
Margaret Brooker, Theatre and Dance  
Sean Foley, History  
Hanna Terletska, Physics and Astronomy  
Misty Jones-Simpson, Recording Industry  
Tiffany Rogers, Psychology  
Keely O'Brien, Agriculture  
Anne Anderson, Finance  
Yixiang Wu, Mathematics  
Kim Evert, Educational Leadership
Looking to start your student research journey?

The URC's guide for upcoming student researchers, *Research Guide: How to Start your Student Research Journey*, is a great resource for undergraduates seeking to enter the world of research! This guide covers when to start research, how to find a project, student experiences, helpful advice, URC resources, and SOAR resources at MTSU.

The next time you are asked how to get involved in research, direct that student to this resource!

**Click Here to View the Student Research Guide**

This guide was initiated, compiled, and formatted by current SOAR Secretary and URC Communications and Social Media Ambassador, Dara Zwemer.

Stories were provided by SOAR students, including Cassandra Perrone, Leah Piccirillo, Javier Hernandez, Robert Conner, Charlotte Daigle, Madeline Aadnes, Maria Fernanda Clark, Kylie C. Moe, Miquellie Bonner, Merry Young, Kaitlyn Berry, Zachary Sanchez, Kap Paull, and Christopher Hall.

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