



May 2025

INQUIRIES



CELEBRATING 25 YEARS OF UNDERGRADUATE RESEARCH & CREATIVE SCHOLARSHIP AT UMKC



“If you follow your curiosity—you’ll end up somewhere interesting. You might build something. You might connect something. You might even make something people didn’t know they needed. So keep chasing strange ideas. Keep asking questions that don’t have easy answers.”

~ **Steve Revare, keynote speaker**

Building on a quarter century of robust undergraduate research and creative scholarship at UMKC., students and faculty continue to take advantage of dynamic programming that continues to evolve. Provost Jenny Lundgren celebrated the 25th anniversary, highlighting how undergraduate research programs are “incredibly synergistic with UMKC’s campus-wide research and creative activities.” Lundgren also reminisced about her own experiences as an undergraduate researcher and how those connections have shaped her career as well as her enthusiasm for mentoring at UMKC.

(continued on page 3)



Undergraduate Research & Creative Scholarship

umkc.edu/undergraduate-research

The Office of Undergraduate Research & Creative Scholarship (UR&CS) supports high-impact learning opportunities by funding the work of undergraduate researchers, scholars, and artists; linking students with research opportunities; providing opportunities for students to enhance intellectual and career-building skills; and supporting faculty mentorship.

Staff

Jane Greer, Ph.D., Director
greerj@umkc.edu

Alicen Lundberg, Assistant Director
lundberga@umkc.edu

Laura Bohlman, Administrative Assistant
laurabohlman@umkc.edu

Faculty Advisory Board

Shuhao Cao, Mathematics

Alison Graettinger, Earth & Environmental Science

Jane Greer, English

Amanda Grimes, Health Sciences

Lani Hamilton, Music Education

Kimberly Johnson, Multicultural Student Affairs

School of Education, Social Work, & Psychological Sciences

Debra Leiter, Political Science

Jesse Lowe, Computer Science

Hillary McGraw, Biological Sciences

Zahra Niroobakhsh, Mechanical Engineering

Paul Rulis, Physics

Jeff Rydberg-Cox, Classical Studies

Maria Spletter, Biological Sciences

Westley Youngren, Psychology

Student Ambassadors

Fardowsa Ahmed, Health Sciences, '25

Julia Bruno, Environmental Science, '25

Yasmeen Hanon, Political Science/Environmental Studies, '25

David Keltner, Physics, '26

Isabelle Schroeder, English, '25

Plan Ahead for Fall 2025

Undergraduate Research Associates

Faculty interested in mentoring an Undergraduate Research Associate through the Federal Work-Study Program should email Alicen Lundberg at lundberga@umkc.edu. A call for projects will go out this summer with hiring of new Associates in August.

SUROP Poster Symposium

10:00 a.m.-2:00 p.m., Thursday, Sept. 4, 2025

Students with Summer Undergraduate Research Opportunity (SUROP) Grants will present posters in Miller Nichols Learning Center Lobby.

SEARCH Grant Funding

Students may apply for up to \$1,500 in reimbursable research expenses for student-led, faculty-mentored projects undertaken during the academic year.

Applications Due: Friday, Sept. 19, 2025 at 5:00 pm

Undergraduate Research Fellows

Students who have been deeply engaged in the process of research, scholarly, and artistic production from the point of inquiry to publication, presentation, or performance may apply to be recognized with this transcript designation. This is the last deadline for December 2025 graduation candidates.

Applications Due: Wednesday, Oct. 1, 2025

URD@C Nominations

Undergraduate Research Day at the Capitol highlights the unique opportunities available to students at Missouri's public research universities. Faculty may nominate undergraduate researchers, scholars, and artists to present at this event.

Nominations Due: Saturday, Nov. 1, 2025

Fall Symposium of Undergraduate Research & Creative Scholarship

10:00 a.m.-4:00 p.m., Thursday, Dec. 4, 2025

Undergraduate students are invited to share their research, scholarly, and creative projects at this poster symposium. The symposium will also feature work from students enrolled in Fall EUREKA! Classes.

Registrations Due: Friday, Nov. 14, 2025

Celebrating 25 Years

Visionaries like Drs. Jim Murowchick, Diane Filion, and Bibie Chromwell created the SEARCH grant program to fund student-led, faculty-mentored research projects after a series of conversations in 2000. Through all those who have believed in and invested time, energy, and funding in undergraduate research, the current efforts have been made possible. Programs like Undergraduate Research Day at the Capitol, the Fellow honorary transcript designation, and SEARCH and SUROP research grants have been consistent ways for students to develop and be recognized as researchers.

There are several areas of growth, too. This year, nearly 30 students worked with faculty mentors as Undergraduate Research Associates—allowing students with federal work-study funding to learn research methods and skills in their fields of study. This program provides opportunities for faculty to connect students early in their time at UMKC with the amazing breadth of research happening at UMKC as a newly designated R1 institution.

More EUREKA! students participated in campus Symposia this year than ever before. Dr. Spencer Keralis, who has taught two different EUREKA! classes since coming to UMKC as Director of Digital Collaboration Services at Miller Nichols Library, has found the research-infused classroom to be some of the most meaningful teaching experiences they have ever had. Keralis found the EUREKA! classroom to be full of possibilities, a space to try new things, and to support students in discovering potentials. One SUROP awardee sparked their project in the Literary Monstrosities class with Keralis.

First-year student Emily Shoemake, who took two of her general education classes as EUREKA! designated sections. She shared, “If English 225 with Dr. Jane Greer taught me new passions for writing and research then Dr. Julia Snyder’s science critical thinking course about viruses and the immunity arms race taught me the value of research-based collaboration and communication. These two EUREKA! courses truly added a valuable base to my understanding of undergraduate research and inspired me to pursue opportunities related to my future career field.”

Thank you to all of the amazing faculty mentors and engaged students who have made the last 25 years possible and to all of you who will be part of future endeavors in undergraduate research.

New Visual Identity



The logo features the text 'UMKC' in a large, bold, blue sans-serif font. To its right, the words 'UNDERGRADUATE' and 'RESEARCH' are stacked vertically in a smaller, blue sans-serif font. A large, stylized blue ampersand (&) is positioned between 'RESEARCH' and the words 'CREATIVE' and 'SCHOLARSHIP', which are also stacked vertically in the same blue sans-serif font.

The Office of Undergraduate Research & Creative Scholarship has a new visual identity thanks to Elizabeth Porritt (Media, Art & Design, '25), with mentorship from Zach Frazier, Assistant Professor of Graphic Design. The ampersand represents how so many components of undergraduate research are connection points — between students and faculty mentors, across disciplines, linking research and practice...& so much more...

Porritt presented early concepts at the spring Lightning Talks! and surveyed undergraduate researchers to get a sense of the values they connect to undergraduate research — the top responses were curiosity, critical thinking, and problem solving.

The next step is to integrate the new identity into different print and digital materials, to create a consistent, reliable visual to go alongside undergraduate research’s programs and resources. What a wonderful way to highlight creative scholarship as an integral part of undergraduate research!

Meet Undergraduate Research Advisory Board Member

Dr. Kimberly Johnson

As strong advocates for undergraduate research across the university, the advisory board members are vital to the success of Office of Undergraduate Research & Creative Scholarship programs. They provide constructive feedback to continually evaluate and improve the research experience for students and faculty mentors.



Kimberly Johnson is the Senior Program Manager in Multicultural Student Affairs and teaches in the School of Education, Social Work and Psychological Sciences. She is an experienced educational leader passionate about

social justice, leadership development, mentoring, and professional development.

What were some of your early experiences with research?

My early experiences in research consisted of research papers and independent study projects that I had to complete for class. I had a passion for learning more about women and non-traditional students in higher education and their experiences.

What advice do you have for students about getting started in doing research?

Start with a topic they are passionate about as this will help them get started on the journey with research. If they are invested in the study topic this will enhance the work they are doing and keep them motivated to see it through. Also, connect with a mentor or someone who can provide guidance and encouragement along the way.

What do you enjoy about supporting students at UMKC?

I enjoy being a resource to students and motivating them to achieve their goals. When they are met with challenges, I encourage students to celebrate each milestone along with way as this will help them when they feel like giving up.

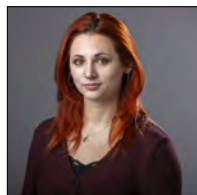


Spotlight on Emerging Research Scholars

The Emerging Research Scholars program offers undergraduate students research opportunities with faculty mentors in their field of study. Managed by Dr. Kimberly Johnson in the Office of Multicultural Student Affairs, the program offers students academic, social, and financial support as they become integrated into the intellectual climate of the university. Over the last four years, the Emerging Research Scholars program has supported more than 40 students conducting research with faculty in a wide range of academic disciplines. Emerging Research Scholars have presented their work here on campus, at the state Capitol, and at regional conferences.

Students Represent UMKC in Jefferson City

UMKC students presented their research in Jefferson City at UM System's Undergraduate Research Day at the Capitol in March 2025. State senators, representatives, legislative staff, and members of the public who attended this poster session learned how participating in research contributes to students' academic success as well as to positive outcomes for the state's economy, technological advancement, public health outcomes, and cultural opportunities.



Kailynn Romy Barnt
Computer Science, '25
"Custom-Trained AI for substance abuse prevention"
Faculty Mentor: Dr. ZhiQiang Chen



Sudhiksha Kumar
Mathematics & Statistics, '25
"Habitat relationship between *Sigmodon hispidus* and *Microtus ochrogaster*"
Faculty Mentor: Dr. Aaron Reed



Kayla Bushart
Biomedical Engineering, '27
"The Vortex Funnel Elimination System and its Effect on Microsphere Production"
Faculty Mentor: Dr. Stefan Lohfeld



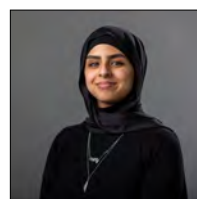
Savanah Manion
Biomedical Engineering, '27
"The Effect of Alginate Beads on the Flow of PLA Microspheres During 3D-Printing"
Faculty Mentor: Dr. Stefan Lohfeld



Emmanuel Fabian
Professional Communication / Spanish, '26
"Oral Literature In Modern Day Cusco: Language and Cultural Attitudes in Two Generations"
Faculty Mentor: Dr. Alberto Villamandos



Nina Mitchell
Biology, '25
"Appetitive Olfactory Short-Term Memory Detection Utilizing Y-Maze Paradigm in *Drosophila melanogaster*"
Faculty Mentor: Dr. Stephane Dissel



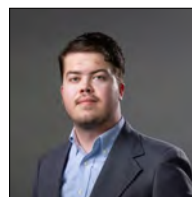
Yasmeeen Hanon
Political Science / Environmental Studies, '25
"The Political Economy of Critical Material Acquisition: Regime, State, and Society"
Faculty Mentor: Dr. Mona Lyne



Iyanna Moss
Psychology, '25
"Insomnia & Nightmares: Effects on Suicide"
Faculty Mentor: Dr. Westley Youngren



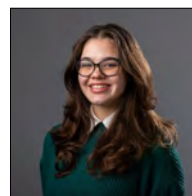
Ruweyda Hassan
Chemistry / Political Science, '25
"The Political Economy of Critical Material Acquisition: Regime, State, and Society"
Faculty Mentor: Dr. Mona Lyne



Theo Raitzer
Economics, '25
"Monetary Sovereignty during the Debt Crisis: The Latin American Lost Decade"
Faculty Mentor: Dr. Zhongjin Li



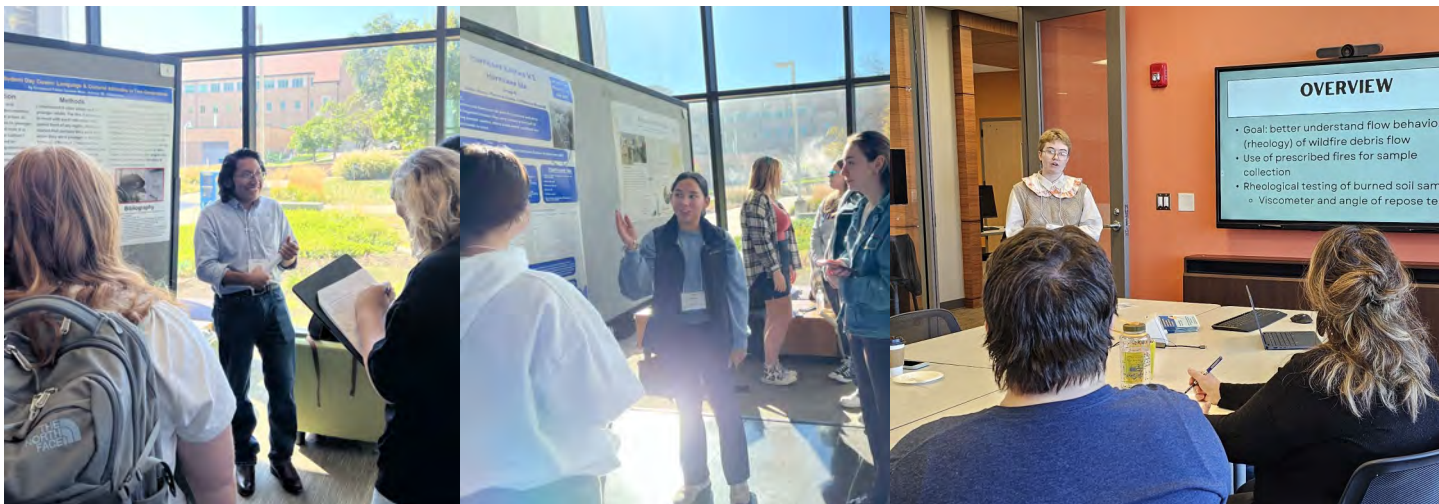
Abhinav Krovvidi
Biology, '26
"Appetitive Olfactory Short-Term Memory Detection Utilizing Y-Maze Paradigm in *Drosophila melanogaster*"
Faculty Mentor: Dr. Stephane Dissel



Alessandra Smith
Biology, '26
"New Evidence Towards Development of Non-Surgical Intervention for Birth Defects of the Face and Head"
Faculty Mentor: Dr. Erin Bumann

Students Circulate Research at Campus Symposia

Throughout the year, about 450 students presented more than 250 projects at campus events through the Office of Undergraduate Research & Creative Scholarship. These projects link AI to cancer prevention as well as substance use disorder, examine Medusa as a monster and as a feminist icon, use mathematical modeling to analyze the spread of antimicrobial-resistant organisms between farms and communities, assess macro- and microplastic pollution in the Bahamas, find links between depression and health behaviors in UMKC undergraduate students, explore subnational authorities in La Araucanía region of Chile, and so much more.



At the 10th Annual SUOP Symposium in August 2024, 25 students presented poster projects that had been funded with Summer Undergraduate Research Opportunity Grants as well as projects stemming from the Practical STEM Workforce Preparation Program. In the Fall Symposium, presentations opened widely for the first time, with about 200 students presenting 89 projects, mostly from EUREKA! classes. At the second annual Lightning Talks!, five students gave 3-minute overviews of their in-progress research projects and received immediate feedback from faculty and peers.



And the year wrapped up with the 25th Annual Symposium of Undergraduate Research & Creative Scholarship, with about 230 students presenting more than 150 projects. Presenters included Undergraduate Research Associates, EUREKA! students, Students Engaged in the Arts and Research (SEARCH) grantees, and many others who have made undergraduate research part of their undergraduate experience.

Presentations of Distinction

25th Annual Symposium of Undergraduate Research & Creative Scholarship

Arts & Humanities

Rebecca Hartman, History, '25
"The Complex Journey of Albert Czul"

Mentor: Dr. Drew Bergerson

Computing & Engineering

Aubry Kleinsorge, Physics, '25
"Modeling Silicon Surfaces in OLCAO"

Mentor: Dr. Paul Rulis

Behavioral & Social Sciences

Yasmeen Hanon, Political Science /
Environmental Studies, '25
"Swimming Upstream: Water Conflicts as
Resource War Outliers"

Mentor: Dr. Rebecca Best

Physical & Natural Sciences

Chloe Craig, Environmental Science, '25
"A Record of Paleohurricanes from Grain-size
Analysis of Sediment Cores: Clear Pond, The
Bahamas"

Mentor: Dr. Tina Niemi

Cadao Nguyen, Chemistry, '25
"Investigation of Anti-Fogging Properties of
Surfactants"

Mentor: Dr. Xiaobo Chen

Mya Thomas, Geology, '25
"Field and Remote Identification of Small
Diameter Lava Tubes from 1961 lava flow at
Askja, Iceland"

Mentor: Dr. Alison Graettinger

Biological & Life Sciences

Sienna Ficken, Biology, '27
"Bruno1 Isoforms have Distinct Subcellular
Localization Patterns in Developing Indirect
Flight Muscle of *Drosophila*"

Mentor: Dr. Maria Spletter

CJ Kreeger, Environmental Science, '25
"Assessment of macro- and microplastic
pollution at beaches on San Salvador island in
The Bahamas"

Mentor: Dr. Tina Niemi

Wylie Putnam, Physics / Chemistry / Biology,
'26

"Characterization of *Malassezia pachydermatis*
Isolates from the Oral Cavity of Kansas
Canines"

Mentor: Dr. Brooke Esquivel

Alessandra Smith, Biology, '26
"Faster Embryonic Jaw Elongation Correlates
with Less Bone Resorption"

Mentor: Drs. Claire J. Houchen and Erin E.
Bumann

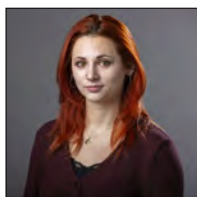
KC Works

Emily Shoemake, History / English, '27
"The Correspondence that created *Sacred
Circles*"

Mentor: Dr. Marcus Meade

Undergraduate Research Fellows

By demonstrating significant involvement in the development, execution, and circulation of original research, 15 students graduating in 2025 were recognized with the Undergraduate Research Fellow designation at the Annual Symposium of Undergraduate Research & Creative Scholarship. This honor is recorded on students' official transcripts and is listed in the commencement program.



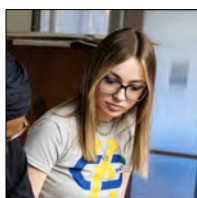
Kailynn Romy
Barnt
Computer Science



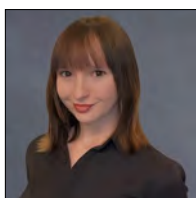
Ruweyda
Hassan
Chemistry /
Political Science



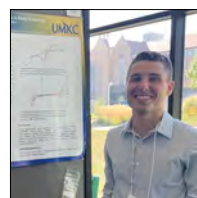
Nina Mitchell
Biology



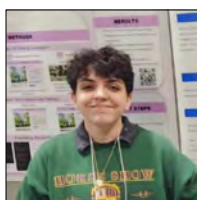
Claire Covert
Health Sciences



Jordan
Jackson
Psychology



Ben Nelson
Chemistry



Daze Creamer-
Ellecamp
Criminal Justice &
Criminology /
Psychology /
Sociology



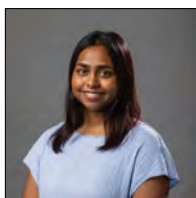
Z Kemp
Civil Engineering



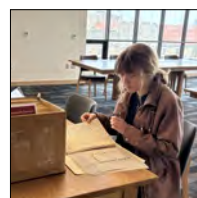
Theo Raitzer
Economics



Max Diaz
Biology



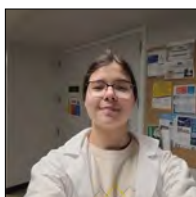
Sudhiksha
Kumar
Mathematics &
Statistics



Isabelle
Schroeder
English



Yasmeen
Hanon
Political Science /
Environmental



Vanessa Menz
Biology



Mya Thomas
Geology

Students may apply for this designation at any point in their undergraduate career, but most typically students apply in the final semesters of their baccalaureate program. Applications are due on October 1 for Fall semester and on March 1 for Spring semester.

SUROP Grants Awarded to 17 Projects

Summer Undergraduate Research Opportunity (SUROP) grants were awarded to 17 student-led, faculty-mentored research projects. Students receive a \$2,250 tuition grant and up to \$1,500 for research expenses.

Jacob Bickham
Performance: Saxophone, '27
"Recording of Paul Creston"
Mentor: Prof. Zachary Shemon

Eli Black
Biology, '26
"Electrochemistry for Mimicking Metabolism of Cancer Treatment Drug Fedratinib"
Mentor: Dr. Mohammad Rafiee

Xingyu Chen
Biology / Chemistry, '26
"Development of a high-throughput antifungal peptide screening technology"
Mentor: Dr. Justin Randall

Morgan Cole
Political Science / English, '26
"The Wicked Witches of Congress: A Study of Political Rhetoric and the Monstrous-Feminine"
Mentor: Dr. Spencer Keralis

Audrey Done
Biology: Clinical Lab Sciences, '27
"Quantifying SOD2 Expression in RPE Cells Using SPR Technology: The Exploration of Sex-Dependent Characteristics in Retinal Structure and Visual Function During Aging"
Mentor: Dr. Peter Koulen

Madison Mitchell
Biology / Environmental Science, '25
"Habitat Analysis for *Sigmodon hispidus* to Improve Zoonotic Disease Outbreak Tracking"
Mentor: Dr. Jejung Lee

Elizabeth Moore
Biomedical Engineering, '27
"Finite Element Analysis For Preventing ACL Injuries in Pediatrics"
Mentor: Dr. Antonis Stylianou

Luke Moore
Chemistry, '26
"Electrochemical Study of the Ni catalyzed Coupling Reactions for Synthesis of Value-added Chemicals"
Mentor: Dr. Mohammad Rafiee

Anna Nejedlo
Geology, '26
"An Ambient Noise Seismic Survey to Detect Faults Under Antigua, Guatemala"
Mentor: Dr. Tina Niemi

Savy Nistala
Liberal Arts: Six Year Medicine, '30
"AI/ML Applications for Staging, Diagnosis, and Treatment of Non-Small Cell Lung Cancer"
Mentor: Dr. Saman Zeeshan

Aarohi Patel
Computer Science, '27
"Guidance, Navigation, & Control for Target Verification with Greatest Time on Target"
Mentor: Dr. Travis Fields

Wylie Putnam
Physics / Biology / Chemistry, '26
"Characterization of *Malassezia pachydermatis* Isolates from the Oral Cavity of Kansas Canines"
Mentor: Dr. Brooke Esquivel

Ryen Reedy
History, '25
"The History of St. Garabed Armenian Church & Armenians in Kansas City"
Mentor: Dr. K. Herman Adney

Preston Santo
Biology / Chemistry, '27
"Development of a rapid, non-toxic antimicrobial peptide screening technology"
Mentor: Dr. Justin Randall

Kaitlyn Schebaum
Criminal Justice & Criminology, '27
"SAVE KC: Process Evaluation of Focused Deterrence Initiative"
Mentor: Dr. Seth Fallik

Alexandria Woerth
English / History, '26
"Cantoraes in the Americas and Beyond"
Mentor: Dr. Virginia Blanton

John Zhu
Music Composition: Piano, '26

David Oosse
Performance: Percussion, '26
"A Deep Research on Multicultural Percussion, Composition, and Music"
Mentor: Prof. Paul Rudy

Students will present their work at the SUROP Poster Symposium on Thursday, Sept. 4, in the first-floor lobby of Miller Nichols Learning Center.

Two Faculty Recognized for Excellence in Mentoring

This year we honored two faculty members for Excellence in Mentoring Undergraduate Researchers, Scholars, and Artists.



Dr. Kelsey Gardiner

Assistant Professor, Health Sciences

With experience working on community and public health nutrition initiatives, Dr. Kelsey Gardiner joined UMKC in 2022. She quickly linked undergraduate students to research in food security, nutrition, and food is medicine projects, including with UMKC's Roo Pantry. In fact, last year, one of her students received the KC Works award, which recognizes community engaged research presented at UMKC's Annual Symposium of Undergraduate Research & Creative Scholarship.

Students and colleagues describe Dr. Gardiner as empathetic, passionate, collaborative, and impactful. She supports her students' personal and professional development in reaching their goals. Dr. Gardiner energetically advocates for her mentees – pursuing avenues of funding to help them attend national conferences, writing letters of support for their grant and award applications, and teaching them new tools and networks to enhance their experience. As her faculty nominator states, "Dr. Gardiner exemplifies excellence in mentoring by actively promoting mastery of research skills... and connecting students to resources to enhance their success."



Dr. Hillary McGraw

Assistant Professor, Biology

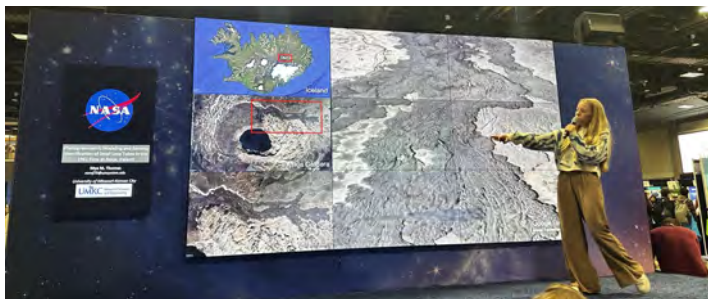
Dr. Hillary McGraw studies nervous system development and how cells regenerate following damage, using zebrafish as a model organism. She takes a very hands-on approach in helping new researchers learn the skills and processes necessary in the lab, encouraging them as they grow in confidence and knowledge to conceive of their own research questions. She has supported students in publishing as first authors and recognized undergraduate researchers in her own presentations at national conferences.

Indeed, her generosity, patience, curiosity, and dedication are recognized by her students and colleagues. Dr. McGraw routinely nominates undergraduates to present their research to state legislators; recommends students applying for competitive internships and graduate programs; and supports students in applying for SEARCH grants here at UMKC. She is truly an invaluable resource to students, and her students have gone on to the Stowers Institute for Medical Research and KU Medical Center. As one former student declared, Dr. McGraw "has shown tremendous commitment to cultivating and fostering my growth as a researcher."

Undergraduate Researchers at Work

As students seek to discover new knowledge and develop original work through research, scholarship, and creative activity, they also discover and develop new skills and confidence.

Undergraduate Researcher Presents on NASA Hyperwall



Mya Thomas (Geology, '25) traveled to Washington DC for the American Geophysical Union conference in December, where she presented her data visualizations on lava tube models on the NASA Hyperwall. She received a grant to cover travel costs, which also came with the opportunity to tour NASA Goddard and attend professional development workshops.

Students Selected for Research Experiences for Undergraduates (REU) in Physics

Last summer, Johnny Diep (Physics / Computer Science / Mathematics & Statistics, '26) conducted research at the Vanderbilt Physics and Astronomy REU, working with Dr. Sokrates T. Pantelides' research group. His work consisted of performing electronic structure calculations on semiconductor materials with defects in them. He specifically analyzed Gallium Nitride with oxygenated hydrogen defects and found the hydrogen's migration pathways and energy barriers around the oxygen.

This summer, David Keltner (Physics, '26) will be participating in the Physics REU program at Texas A&M University Cyclotron Institute, focusing on cutting edge research in nuclear physics and nuclear chemistry.

Summer Internships Offer Research Experiences Beyond UMKC



Two undergraduate researchers were selected for the competitive Stowers Summer Scholars program, conducting full-time research under the guidance of a Principal Investigator. Sienna Ficken (Biology, '27) will be working in the Kostova Lab to research ribosome composition. Sam Herman (Biology, '27) will work in the Ozel Lab under Rose Coyne to understand how a certain set of neurons form their identity during development.



Another two undergraduate researchers will be interning at The Nelson-Atkins Museum of Art this summer through the Mellon Humanities Internship Program. Samantha Carr (Art History, '25) will be researching provenance with MacKenzie Mallon and Isabelle Schroeder (English, '25) will work with Meghan Gray as the European Curatorial Intern.



Johnny Diep (Physics / Computer Science / Mathematics & Statistics, '26) will be the Student Engineer Intern at the Kansas City National Security Campus. In this position, he will help to develop products and systems as part of an integrated engineering team, participating in all phases of product development.

We want to celebrate your students' accomplishments!

Please share news of your students' projects, presentations, publications, performances, or external research experiences. Email details to Alicen Lundberg at lundberga@umkc.edu.