

# INQUIRIES

NEWSLETTER FROM THE UMKC OFFICE OF UNDERGRADUATE RESEARCH & CREATIVE SCHOLARSHIP

## ***Virtual Symposium Showcases, Celebrates Undergraduate Research***

The Fall Symposium of Undergraduate Research and Creative Scholarship was presented online in Canvas on December 7, 2021. In its third year, the fall symposium celebrated the work of nearly 250 students enrolled in EUREKA Courses (course-based experiences in undergraduate research). In EUREKA Courses, students build a relationship with a faculty mentor, learn and practice research skills and scholarly methods, complete a research project, and share their work with the UMKC community.

Research projects from this semester's EUREKA students explored questions related to health issues and aging, health risks in unique populations, natural hazards, and Victorian periodicals. Most presenters used a video or voice recording to share their final posters, slide decks, and hand-crafted creative works.

More than 120 students, faculty, and staff visited the online symposium and engaged in insightful conversations on the discussion boards within the Canvas site.

"We were thrilled that so many faculty, staff, and students from across campus took time to celebrate the achievements of these new undergraduate researchers," said Dr. Jane Greer, who directs the Office of Undergraduate Research and Creative Scholarship.



Layla Mokhtar presented the magazine cover she created in response to the penny dreadful, the most popular serialized fictional form in Victorian England. Layla was a student in GECRT-AH 101 Making Meaning in a Changing World: Literary Monstrosities.

Students from the following EUREKA Courses presented at this fall's symposium:

GECRT-AH 101 Making Meaning in a Changing World: Literary Monstrosities; *Instructor: Jennifer Phegley*

GECRT-SC 101 How Do I Live in a Changing World: Nature's Fury; *Instructor: Alison Graettinger*

GECRT-SS 111 Health Issues in Aging;  
*Instructors : Amanda Grimes and Sally King*

HLSC 476 Research Methods in Health Sciences;  
*Instructors: Amanda Grimes and Satish Munigala*

PBHL 158 Public Health Principles;  
*Instructors: Joey Lightner and Jamie Shank*

PBHL 496 Evidence-Based Public Health Capstone & Seminar; *Instructor: Joey Lightner*



OFFICE OF

## Undergraduate Research and Creative Scholarship

[www.umkc.edu/searchsite](http://www.umkc.edu/searchsite)

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

### Staff

Jane Greer, PhD, Director  
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Audrey Lester, Assistant Director  
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Sherry Neuerburg, Office Support Assistant  
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### Faculty Advisory Board

Majid Bani-Yaghoub, Mathematics  
Leonard Dobens, Biological Sciences  
Travis Fields, Mechanical Engineering  
Alison Graettinger, Earth & Environmental Science  
Jane Greer, English  
Amanda Grimes, Health Sciences  
R. Scott Hawley, Stowers Institute  
Saul Honigberg, Biological Sciences  
Kimberly Johnson, Multicultural Student Affairs  
Seung Lark Lim, Psychology  
Debra Leiter, Political Science  
Paul Rulis, Physics  
Jeff Rydberg-Cox, Classical Studies

### Student Ambassadors

Victor Arellano, Public Health, Class of '23  
Maya Baughn, Health Sciences, Class of '23  
Kyle Broley, Earth & Environmental Sciences, Class of '22  
Polina Krasnopolskya, Music Education, Class of '23  
Trenton McEnaney, Earth & Environmental Sciences, Class of '22

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## Plan Ahead for Spring Opportunities

### Work Study Research Assistants

The Office of Undergraduate Research matches students who have work-study awards as part of their financial aid packages with opportunities to provide research assistance to faculty. Students with a work-study award should contact Jane Greer at [greerj@umkc.edu](mailto:greerj@umkc.edu).

### Undergraduate Research Fellows

Students with deep involvement in research or original scholarship can apply for the Undergraduate Research Fellow honorary transcript designation.

*Application Deadline: March 1, 2022*

### SUROP Grant Funding

Winter break is the perfect time for undergraduates to begin planning a SUROP grant application by focusing their research, scholarly, or creative project and identifying a faculty mentor. Awarded each spring, SUROP grants provide funding for approved project expenses, as well as a tuition grant.

*Application Deadline: March 4, 2022*

### Spring Symposium of Undergraduate Research and Creative Scholarship

The 22<sup>nd</sup> Annual Symposium of Undergraduate Research and Creative Scholarship will be held on Thursday, April 21, 2022, in Pierson Auditorium. Undergraduate students conducting research, taking part in creative scholarship, or preparing scholarly papers are invited to share their work with the UMKC community during the symposium.

*Registration Deadline: April 9, 2022*

*Applications and registration forms for all programs can be found on the Office of Undergraduate Research and Creative Scholarship website:*

**[www.umkc.edu/searchsite](http://www.umkc.edu/searchsite)**

## ***Undergraduate Research Advisory Board Welcomes New Members***

The Undergraduate Research Advisory Board provides critical guidance and support for the Office of Undergraduate Research and Creative Scholarship's programs. The board's ten long-serving members were joined by three new members in the 2021-2022 academic year.

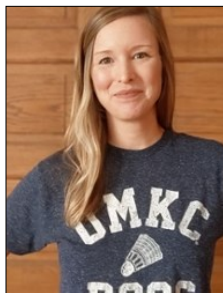


**Kimberly Johnson** serves as the Senior Program Manager and the Research and Graduate Preparation Coordinator for UMKC Multicultural Student Affairs, with the goal of matching students in the A.A.C.E. and

Avanzando mentoring programs with undergraduate research opportunities. She has been employed at UMKC for 21 years and is passionate about enhancing the experiences of students and staff related to mentoring, leadership, professional development. She has a Bachelor of Arts in Sociology, Master of Arts in Education, Education Specialist Degree, and a doctorate in Education with an emphasis on Higher Education Administration all from UMKC.



**Alison Graettinger**, Assistant Professor of Earth and Environmental Sciences, joined UMKC in 2016. Her research focuses on volcanic eruptions using a variety of techniques including large-scale physical experiments, field work, and remote sensing. These projects focus on why some eruptions where magma encounters water are explosive and some are not. Dr. Graettinger teaches a EUREKA course (course-based experiences in undergraduate research) and mentors students with SEARCH and SUROP grants.



**Amanda Grimes**, Assistant Professor of Health Studies, joined UMKC in 2013 and began a tenure-track position in 2018. Dr. Grimes's research focuses on active transportation and the health

and social influences associated with physical activity across demographic groups. Dr. Grimes has developed two EUREKA courses (course-based experiences in undergraduate research) and mentors students with SEARCH and SUROP grants.



Amber Cunningham, Chemistry major, co-authored a paper with Mohammed Rafiee, her research mentor and Assistant Professor of Chemistry, that was published in the *Journal of Chemical Education*, the world's premier chemical education journal. The paper, "Why Is Voltammetric Current Scan Rate Dependent? Representation of a Mathematically Dense Concept Using Conceptual Thinking," presents an educational activity that the research team developed during the COVID-related remote learning. Amber continues this work through the 2021-2022 academic year with funding from a UMKC SEARCH grant. The full text of the article is available online: <https://pubs.acs.org/doi/full/10.1021/acs.jchemed.1c00770>.

## ***Summer Researchers Present their Projects***

The 18 students who received Summer Undergraduate Research Opportunity (SUROP) grants in Summer 2021 presented their projects at a poster symposium in September. More than 100 students, faculty, and staff visited the symposium in the Miller Nichols Learning Center.

### **Victor Arellano**

Preventing Falls in Older Adults Through Cycling  
Mentor: Joey Lightner

### **Maya Baughn**

Relationship Between Self-Reported Balance and Self-Reported Physical Activity in Older Adults  
Mentor: Amanda Grimes

### **Jacob Bell**

Late Holocene Paleoclimate of the Gulf of Aqaba-Northern Red Sea Based on Stable Isotope Analyses of Benthic Foraminifera  
Mentor: Tina Niemi

### **Kyle Broley**

Examination and Analysis of Peperite Formations of Dotsero Crater  
Mentor: Alison Graettinger

### **Thomas Cacy**

Aggressive Turn in a Fixed Wing UAV  
Mentor: Travis Fields

### **Nina Cherry**

Evaluating Jazz and Gender in Kansas City's Swing Era  
Mentor: Alison DeSimone

### **Justin Clark**

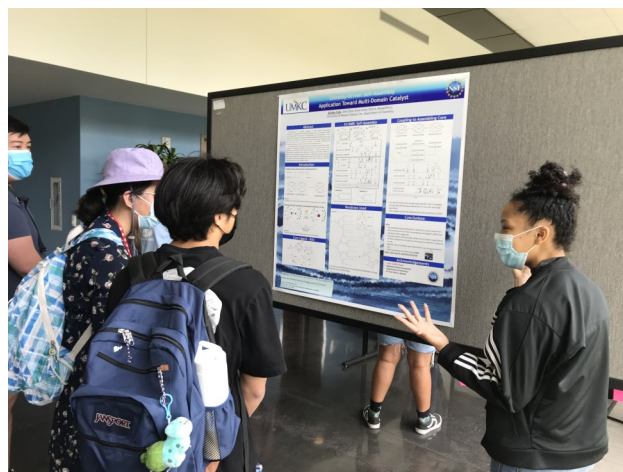
Ultra-Compact Integrated Product Cooling Technology  
Mentor: Sarvenaz Sobhansarbandi

### **Ashley Cole**

Smart Dendritic Catalyst – Application Toward Size-Selective Oxidation of Alcohols  
Mentor: Shin Moteki

### **Evie Cross**

Prof. Moteki's Research Group: Organic Synthesis and Catalysis  
Mentor: Shin Moteki



### **Jared Gutzmer**

Sigurd Rascher and Musical Modernism  
Mentor: William Everett

### **Zachary MacDonald**

Mexico: A Failed or Emerging Democracy?  
Mentor: Mona Lyne

### **Trenton McEnaney**

Building a Georeferenced Database for the 1976 Guatemalan Earthquake Rupture Along the Motagua Fault System  
Mentor: Tina Niemi

### **Onur Ozkaya**

Evaluation of Optimum Heat Gain in a Solar Thermal Collector through Design Re-Configuration  
Mentor: Sarvenaz Sobhansarbandi

### **Krithika Selva Rajoo**

Representation of Cyclic Voltammetry by Digital Simulation  
Mentor: Mohammad Rafiee

### **Jade Robichaud**

Measuring Inhibitory Controls to Food Cues Using a Mouse-Tracking Paradigm  
Mentor: Lark Lim

### **Shanya San**

Ab Initio Computational Research of the Intercalation of Cancer Drug Doxorubicin in Various DNA Sequences  
Mentor: Wai-Yim Ching

### **Kyla Vazquez**

Determining the Number of Genes Responsible for a Mutant Phenotype in *Saccharomyces Cerevisiae*  
Mentor: Saul Honigberg

# First Semester Students Learned about Undergraduate Research from Peers



In September, Earth and Environmental Studies majors **Kyle Broley** and **Trenton McEnaney** presented, “Getting Started with Research” at the Geosciences Museum. The presentation addressed common questions, like: How do you select a research topic? Who can you ask to serve as a faculty mentor? What funding sources are available? Kyle and Trenton shared their own experiences and discussed resources available to UMKC students.

In October, Music Education major **Polina Krasnopolskaya** presented, “Beyond Lab Coats and Test Tubes” in a choir rehearsal room in Grant Hall. Students learned about the wide variety of research and creative scholarship that UMKC students conduct in libraries, archives, studios, and in the community. Polina shared her experience of discovering research opportunities in the Conservatory.

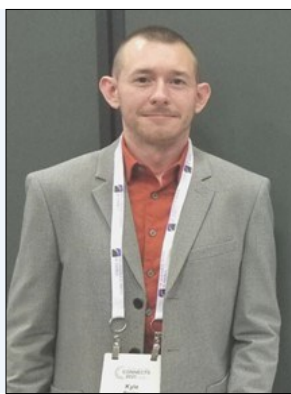


In November, Health Sciences majors **Victor Arellano** and **Maya Baughn**, presented “From Proposal to Poster” in a Zoom broadcast from the Health Sciences Building. Maya and Victor shared their tips for writing successful grant applications, and discussed their processes for drafting and revising poster presentations.

## ***Congratulations, Undergraduate Research Fellows***

By demonstrating significant involvement in planning, carrying out and sharing the results of original research, three students have earned designation as Undergraduate Research Fellows in Fall 2021. This honor is recorded on students' official transcripts and is listed in the commencement program. Undergraduate research fellows wear a commemorative medal at commencement.

**Kyle Broley**, Earth and Environmental Studies major, Class of '22, studied xenolith structures associated with the Dotsero maar volcano in Colorado.

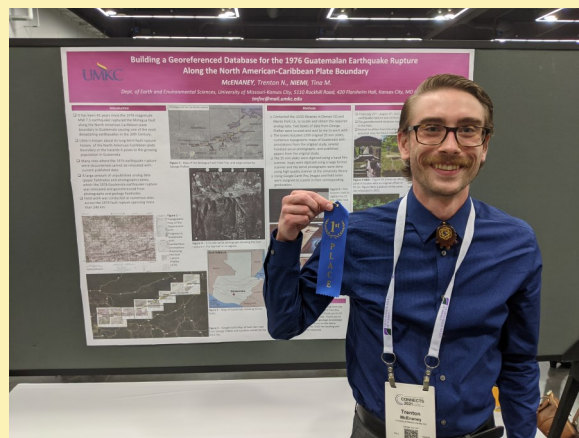


**Jared Gutzmer**, Music Studies major, Class of '22, studied saxophonist Sigurd Rascher's attitudes towards modernism and his interactions with modernist composers.

**Jade Robichaud**, Psychology major, Class of '22, examined the relationship between attentional control and behavioral inhibition to food cues.



**Trenton McEnaney**, Earth and Environmental Sciences Geology major, received first prize for his poster in the Environmental and Engineering Geology Division Student Research Competition at the Geological Society of America Annual Meeting held in Portland, Oregon. His poster "Building a georeferenced database for the 1976 Guatemalan Earthquake rupture of the Motagua fault system along the North American-Caribbean Plate Boundary," co-authored by his faculty mentor, EES Professor Tina Niemi, is based on research he conducted this summer with funding from a UMKC SUROP grant. Trenton continues this work through the 2021-2022 academic year with funding from a UMKC SEARCH grant.



## ***We want to hear from you!***

Are your students involved in research, grant-funded projects, presentations, publications, or performances of their original work? We want to celebrate their achievements! Email the details to Audrey Lester at [lesterak@umkc.edu](mailto:lesterak@umkc.edu).

## ***20 Students Awarded SEARCH Grants***

The Office of Undergraduate Research & Creative Scholarship awarded about \$20,000 in Students Engaged in the Arts and Research (SEARCH) grants to 20 students who will conduct a research project with a faculty mentor in the 2021-2022 academic year. Please congratulate this year's SEARCH winners:

**Asayiel Alhajeri**

Biology Major, Class of '24  
Mentor: Mohammad Rafiee

**Maya Rose Baughn**

Health Sciences Major, Class of '23  
Mentor: Amanda Grimes

**Kyle C. Broley**

Earth and Environmental Sciences Major, Class of '22  
Mentor: Alison Graettinger

**Daniel Caron**

Civil Engineering Major, Class of '22  
Mentor: ZhiQuang Chen

**Cristina Chavez-Arnst**

Political Science Major, Class of '22  
Mentor: Mona Lynne

**Sophia Couteranis**

Psychology Major, Class of '22  
Mentor: Oh-Ryeong Ha

**Christian Dang**

Biology Major, Class of '22  
Mentor: Len Dobens

**Jordy Hernandez**

Biology Major, Class of '22  
Mentor: Saul Honigberg

**Sarah Herndon**

History Major, Class of '23  
Mentor: Laura Taylor

**Saivagmita Kantheti**

Six-Year Med Program  
Mentor: Billie Anderson

**Ethen C. Kimmel**

Biology Major, Class of '22  
Mentor: Rachel Allen

**Michael A. Kuehn**

Biology Major, Class of '22  
Mentor: Hillary McGraw

**Eun Bee Lee**

Biology Major, Class of '22  
Mentor: Erin Bumann

**Trenton McEnaney**

Earth and Environmental Sciences Major, Class of '22  
Mentor: Tina Niemi

**Cullen Moriarty**

Earth and Environmental Sciences Major, Class of '22  
Mentor: Fengpeng Sun

**Grace Nanney**

Psychology Major, Class of '22  
Mentor: Oh-Ryeong Ha

**Tommy Nguyen**

Biology Major, Class of '23  
Mentor: Thomas Menees

**Shea Elizabeth O'Connor**

Biology Major, Class of '22  
Mentor: Zachary Fischer

**Amanda Mercier Pierce**

Earth and Environmental Sciences Major, Class of '22  
Mentor: Caroline Davies

**Jennifer Vanderslice**

Physics Major, Class of '24  
Mentor: Paul Rulis