



URCA

Undergraduate Research and Creative Activities

Volume 11, Issue 1

Fall 2019

“URCA has been absolutely wonderful. It’s inspiring to be involved in a cohort of such intelligent, accomplished, and passionate individuals. Being around my cohort members, learning about their projects, and hearing about their achievements really keeps me wondering how I can raise the bar myself.”

**-URCA Associate,
Emily Lange**



For More Information:

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What Is URCA?

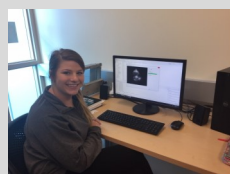
URCA is a program designed to get undergraduate students involved in research and creative activities. There are two ways in which students can participate in URCA: as Associates and as Assistants.

Associates: These are year-long positions in which a student designs his or her own research or creative activity project and then works with a mentor to see it through. Associates are required to attend monthly meetings and to present their scholarly work at the Spring Symposium. Associates earn a stipend and can also receive money for project-related equipment and travel. Only a maximum of 10 students are accepted into this very competitive program each year.

Assistants: These are semester-long positions in which students assist faculty with their research or creative activities. Approximately 90 students each semester receive stipends for being Assistants; however, each semester several students also participate as unpaid Assistants. It is also possible for Assistants to earn course credit for their participation.

URCA Mentor Dr. Jon Klingensmith and his Biomedical Imaging Research Lab

Dr. Klingensmith is currently working with URCA students Gage Evitt, Nick Roberts, Colin Gibbons, Julia Benz, Brianna Witherell, and Vu Dinh in his Biomedical Imaging Research Lab in SIUE’s Department of Engineering. The focus of the lab is to develop software and automated algorithms that identify and characterize the layer of fat around the heart, called the epicardial adipose tissue. Here is what Dr. Klingensmith had to say about their current project: “We currently work with medical image data from both cardiac MRI and echocardiography (ultrasound of the heart). The URCA students in the lab each work on their own individual part of the overall effort. For the MRI, we collaborate with the Washington University School of Medicine for the scans. Using the resulting image data, we are developing automated segmentation algorithms using machine learning and 3D modeling tools to measure and visualize the fat. For the ultrasound, we do the imaging in our own lab in the Engineering Building.” In the lab, each URCA Assistant is responsible for a sub-project associated with this overall effort. As part of the process, they learn to develop algorithms with fast prototyping programming languages like Python or MATLAB. The algorithms then get integrated into our main platform and the students also learn industry-best practices for version control of their software.



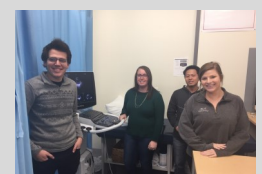
Julia Benz



Brianna Witherell and
Colin Gibbons



Vu Dinh



URCA Team

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**URCA Associate
Emily Lange and her
mentor
Dr. Thomason**

“Kiah has really blossomed from someone who was quite shy when she began working with me. She has been able to lead the Art Hive pop-up studios by herself a couple of times and took the lead on the pop-up studio we held at the Edwardsville Library.”

*-Professor Shelly
Goebel-Parker*



**URCA Assistant
Kiah Johnson and
her mentor Shelly
Goebel-Parker**

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Featured Associate: Emily Lange

Mentor: [Dr. Allison Thomason](#), Historical Studies

Emily Lange is an URCA Associate working on her project titled “Tracing the Wisdom of the Near East: A Cross-Contextual Examination of Ancient Societal Values in the Context of Cultural Interaction.” Emily sates, “My project focuses on didactic (wisdom) literature of the Ancient Near East. Didactic literature aimed to propagate and popularize the values and habits that ancient societies thought were necessary for personal and communal success... Wisdom literature is particularly interesting from a research perspective because it provides a written record of a society’s preferred values over time. My project builds on this idea, and uses a cross-cultural comparative approach to glean further information about the degree and nature of cultural interaction in the Ancient Near East. Archaeological and historical records confirm that there was substantial interaction between the peoples of the Ancient Near East: The Israelites, Mesopotamians, and Egyptians. Assuming that this social interaction promotes the sharing of ideals, my project asks if we can trace this interaction through an analysis of the thematic similarities and differences of the wisdom literature of these cultures.”

Over the summer, Emily spent time in Texas with the National Science Foundation through their highly selective Research Experiences for Undergraduates (REU) program. Emily described her experience as such: “Over the summer, I worked in UT Austin’s geophysical engineering lab to test the effects of soil compaction on artifact assemblages. Basically, as artifacts are covered by more and more soil layers, the pressure exerted by these layers increases. We wanted to see if this caused displacement, disarticulation, breakage, or marking. I’m currently working on data analysis, and hope to present a research poster at the Paleoanthropology Society annual meeting this spring!”

Featured Assistant: Kiah Johnson

Mentor: [Shelly Goebel-Parker](#), Art and Design

Kiah is a senior psychology major with a minor in studio art who is currently working as an URCA Assistant with Professor Shelly Goebel-Parker. Kiah’s creative project involves art hives. She and her mentor go to different places in the surrounding area and set up pop-up open art studios, which are used to promote community and bring people together through art. Kiah said, “It’s a great experience where everyone talks with one another and can make whatever art they would like through the materials that we have.” Materials that are used can range from simple markers and crayons to collaging materials. Kiah saw URCA as an opportunity to explore art therapy and how these projects help the community. “My favorite part of the project is facilitating the art hives and doing artwork with the participants. It’s a really fun and touching moment when connecting with people you don’t know through art. At an art hive, you get to meet new people and learn about them while relaxing through art making. My experience in URCA has been great! It’s been an extremely uplifting experience that helps me reflect and work on my inner self. It’s also great to become close to the professor who becomes your mentor. Working with my mentor, Professor Goebel-Parker, really helped me figure out if I do want a career in art therapy and has influenced me to really love art hives and the principles that surround it.”