

## Undergraduate Research and Creative Activities

### 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.

### Featured URCA Assistants and Mentors:

**Dr. Song Chew, Department of Mathematics and Statistics**  
Assistant: Jacob Roberts

Dr. Chew's work this semester has bridged the gap between engineering and mathematics. With his assistant, Jacob Roberts, the two have been using MATLAB to design algorithms which can help engineers optimize projects and find the lowest cost solutions possible. Jacob has communicated with other researchers to obtain algorithms for comparison to their own, and ran MATLAB codes to collect data. They will soon begin working to organize their data and submit it for publication!

**Dr. Pietro Sasso, Department of Educational Leadership**  
Assistant: James Beverly III

Dr. Sasso's research this semester focuses on examining masculinity in a group of white male students. Dr. Sasso and his assistant, James Beverly III, have been working with another professor from Dartmouth College, and examining data collected from previous studies. Their work examines themes of dispossession, post-racial attitudes, and cultural appropriation among the participants. James had great things to say about his time working with Dr. Sasso, praising him as a passionate and knowledgeable faculty mentor who has taught him much about research and the publication process. They will be presenting their work at an upcoming online conference in May through the American College Personnel Association's Commission on Men & Masculinities. Additionally, Dr. Sasso was recently named inaugural faculty research fellow for the Timothy J. Piazza Center for Fraternity and Sorority Research and Reform at Penn State University!



**James Beverly III**

**For More Information Visit:** <http://www.siu.edu/urca>

**Contact:** Dr. Laura Pawlow

[lpawlow@siue.edu](mailto:lpawlow@siue.edu)

615-650-2608



# URCA



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**URCA ASSOCIATES KEEPING OUR WORLD GREEN FOR FUTURE GENERATIONS!!!**

### Haley Brashears

**Mentor: Dr. Kyong-Sup Yoon, Environmental Science**

Haley's work examines the impact of microplastics on aquatic life. By studying *Schmidtea mediterranea*, a small aquatic flatworm, she's analyzing whether microplastics, or microscopic bits of plastic which are produced when plastic degrades over time, are accumulating in the digestive systems of aquatic wildlife. Haley noted that, as the use of plastics has skyrocketed in the past several decades, we need to explore if and how degrading plastic products are affecting wildlife. This semester, she is using immunohistochemistry to determine whether microplastics are distributed in the guts of these organisms or being absorbed into their cells. Haley will be heading to Clemson University's Ph.D. program in Toxicology this coming fall!



**Haley Brashears**

### Alexis Reinders

**Mentor: Dr. Kevin Tucker, Chemistry**

Alexis is studying how pesticides accumulate in produce. She is analyzing avocados obtained from local grocery stores and other suppliers to determine where inside the fruits pesticides accumulate, or if they accumulate at all. She hopes that her research will be able to further inform food safety regarding pesticide use. This semester, she has had the opportunity to use techniques including homogenization, solid phase extraction, and liquid chromatography mass spectrometry. Alexis was recently a co-author on a scholarly manuscript recently published in *Current Opinion in Environmental Science and Health*!

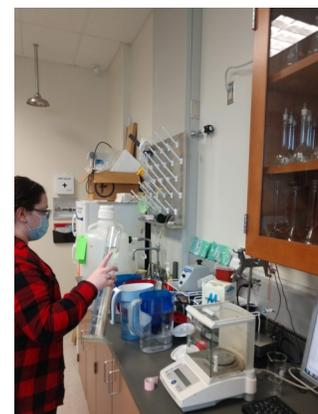


**Alexis Reinders**

### Molly Walker

**Mentor: Dr. Ed Navarre, Chemistry**

Molly is examining the state of drinking water at SIUE. A prior survey showed that many on campus chose bottled water over tap due to concerns about safety and taste. However, bottled water generates a large amount of plastic waste and is more expensive than consuming tap water. Molly's project studies the inorganic composition of tap water on campus and the ability of inexpensive table top water filters to address safety and taste concerns as a more ecological and economical option. She is also comparing the composition of bottled water to determine whether there are any significant differences between bottled and filtered water. Molly already presented her work at the Pittcon conference in March and is working on a report to release to the SIUE community.



**Molly Walker**