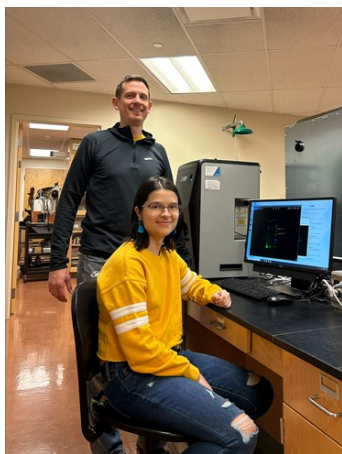


Summer Collaborative Research Experience (SCORE) Grant

2023 Recipients

The Summer Collaborative Research Experience (SCORE) grant is a program designed to introduce undergraduate students to the world of academic research. The program requires that each proposal be prepared as a joint effort between the faculty member and a qualified undergraduate student, and that the proposal describes a research project that will engage the student in research skills and techniques of that discipline. The program is open to faculty members in all disciplines.



Dr. Martin Buckley
Tyra Skalos

College of Engineering and Science
Biology

Title: Biochemical Analysis to Determine if the Antioxidant Resveratrol Activates the Shock Response Pathway

Amount Awarded: \$4,761

Abstract: Resveratrol is an antioxidant found naturally in wine and various foods. Notably, supplementation with resveratrol has been shown in some human clinical studies to prevent health complications linked to oxidative stress, including neurodegenerative diseases. Similarly, studies from our lab, as well as others, have shown that resveratrol increases oxidative stress resistance in *Drosophila melanogaster* (fruit fly). However, the molecular underpinnings of these observations are not clear. We hypothesize that resveratrol mitigates oxidative stress by activating a well characterized cell stress response pathway called the heat shock response pathway. This stress pathway produces the protein Hsp70, which reverses the effects of oxidative stress in cells. To test our hypothesis, we propose to measure the levels of Hsp70 protein in *Drosophila* cells exposed to different concentrations of resveratrol using a biochemical technique called western blotting. Importantly these results will enhance our understanding of the molecular mechanism of resveratrol in cells.



Dr. Yvonne Eaton-Stull Alexandra Kaufman

College of Health Professions
Social Work

Title: Animal-Assisted Support for Veterinary Staff

Amount Awarded: \$4,184

Abstract: Veterinary staff experience numerous work-related stressors that contribute to mental distress and burnout. Strategies to enhance coping and increase compassion satisfaction are essential, not only to the well-being of veterinary staff, but also to the care and treatment provided to the animals and their owners. This study will provide animal-assisted support sessions to veterinary staff. Crisis response dogs, who are highly trained to provide comfort and support, will offer opportunities for staff to benefit from interaction and engagement with healthy dogs. Physiological measures of participant heart rate and blood pressure along with surveys assessing their level of burnout and compassion satisfaction will be obtained. An additional survey obtaining input about participant's views of the dog visits will be obtained. Results from this study will be analyzed to determine how animal-assisted support may benefit the veterinary staff.



Dr. Istvan Kovacs Mitchell McCleary

College of Education
Physical and Health Education

Title: Community Strength Training: Muscular Power vs. Muscular Strength Upper Body Training

Amount Awarded: \$4,418

Abstract: This proposal is based on an extension of an ongoing research project titled: The Effects of Muscular Power vs Muscular Strength Training for Upper Body Strength of College Aged Students. The study is a six-week long, three times per week upper body training program. In the fall of 2022, eighteen student participants completed the program and the related pre- and post-tests. In the spring 2023 semester, an additional twenty student participants were recruited. The proposed extension of the study into the summer months would allow us to a) recruit participants of any age; b) expand the training program with two optional lower-body training sessions per week; c) provide individual consultations for strength-related fitness; and d) increase the number of participants for higher statistical power of the study.



Dr. Enoch Nkana Heaven Jacoway

College of Education
Elementary and Early Childhood Education

Title: The Exploration of the Culture and Curriculum of Students of Indigenous Heritage in the Kalinago Community

Amount Awarded: \$3,625

Abstract: The purpose of this project is to conduct an international research study to investigate the implementation of indigenous history, culture, and identity curriculum in the Kalinago community. Faculty and student researchers will explore the curriculum of the Kalinago people, the last remaining Caribbean community of pre-Columbian indigenous Carib people on the island of Dominica. The infusion of one's history and culture in the curriculum can impact comprehension, motivation, engagement, and students' awareness of their racial and ethnic identities. This exploration will enable the researchers to interview members of the local educational community and collect and analyze data in order to identify and address the learning needs of a diverse population of learners. Additionally, the student researchers will gain qualitative research experience in an international setting, which is necessary for degree completion.



Dr. Hye Ryung Won Lauren Pflueger

College of Education
Elementary and Early Childhood Education

Title: Robotic Education in Elementary Classrooms

Amount Awarded: \$5,000

Abstract: The purpose of this study is to understand the effectiveness of robot coding/programming experience on elementary students and their cognitive and affective domain development including problem-solving skills, creativity, and self-efficacy. Although the importance of providing children with STEM experience has become a critical issue in the field of early childhood and elementary education, there has been little understanding of how children are engaging in robot coding/programming activities (John et al., 2018). Through the summer camp learning environment in which robot coding/programming technologies (e.g., Lego Spike and Hummingbird) are provided for elementary students, researchers examine how such tangible robot-building experiences could enhance students' learning and creating capabilities.