



Office of Research
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JACKSONVILLE UNIVERSITY

Collaborate JU is an internal grant opportunity offered by the Office of Research & Sponsored Programs (ORSP). As a component of the Florida EPIC Program at Jacksonville University, Collaborate JU reflects the four EPIC tenets of entrepreneurship, policy, innovation, and commerce. This Florida Department of Education program supports projects designed to equip JU's graduates with the skills needed to begin careers in the high-demand fields so vital to Florida's economic prosperity and global competitiveness. Awardees are as follows:

Researchers	Title	Award
Natasha Vanderhoff, Associate Professor of Biology, and Ashley Johnson, Assistant Professor of Geography	Spatial Patterns of Resident and Transient Margays in Ecuador	\$5,858
<p>Abstract: Margays are small, elusive cats found throughout the neotropics. Since 2008 my colleagues and I have been monitoring margays with camera-traps at Wildsumaco Wildlife Sanctuary, Ecuador. Our work has shed light on the population of margays at Wildsumaco, which appears to have one of the highest recorded densities of margays anywhere in the neotropics. This high density may be due the high number of transient individuals that pass through Wildsumaco. GIS and spatial analysis software can elucidate population patterns in space and time. We will use camera trap data (photos of individually recognizable margays) and GIS to spatially analyze the distribution and abundance of margays at Wildsumaco. This project provides an opportunity for students to gain real world skills related to conservation biology and sustainability. Biology students will learn about camera trapping, while students enrolled in GIS courses will use real world data generated from the site to construct maps for the margay conservation project. My colleagues and I have obtained funds (a grant from Riverbanks Zoo and JU Faculty Research Grant) to purchase cameras. This grant will allow faculty and students to travel to the site to install cameras, collect data and learn about our conservation efforts.</p>		
Gretchen Bielmyer-Fraser, Associate Professor of Chemistry, and Melinda Simmons, Assistant Professor of Biology & Marine Science	Assessing Water Chemistry & Metal Pollution in the Lower St. Johns River	\$4,972
<p>Abstract: A time-series study of near-surface environmental variables was begun by Dr. Bielmyer-Fraser and Dr. Simmons in January 2017. Thus far, chlorophyll-a fluorescence concentrations have been consistently above the impairment threshold (11 µg/l) for coastal and estuarine waters, with values more than twice the Lower St. Johns River (LSJR) criterion of 5.4 µg/L. Chlorophyll-a values are used as a proxy for relative phytoplankton abundance, and can be indicative of excess nutrients and harmful algal blooms. Additionally, water chemistry has varied seasonally and among sites. Copper and nickel concentrations, in particular, have periodically fluctuated above water quality criteria; therefore, animal and plant life may be threatened during those times. Our goal is to continue this time-series suite of measurements, in order to determine baseline concentrations for metals and nutrients and document seasonal and potentially long-term variability in the rates of primary production. We were granted funding from the Joy McCann Foundation to hire graduate student, Joeff Ramirez, as a technician on this project. EPIC funding is being sought for the purchase of reagents and equipment necessary to continue this time series.</p>		
Bryan Franks, Assistant Professor of Biology & Marine Science, and Gretchen Bielmyer-Fraser, Associate Professor of Chemistry	Metal Accumulation and Antioxidant Effects in Sharks	\$14,345

Abstract: This proposal is focused on interdisciplinary research in Marine Science and Chemistry. In an EPIC project funded in 2017, we examined accumulation of heavy metal pollutants in Atlantic sharpnose shark muscle tissue, with the goal of assessing the correlation of stress biomarkers and increased metal tissue concentrations across different collection sites, sizes, and gender. The results of that study will help to provide new insight into metal accumulation and toxicity in sharks in effort to increase conservations measures. We would like to continue these efforts by collaborating with Dr. Bryan Franks and OCEARCH to assess metal accumulation and stress biomarkers in large coastal sharks such as Great whites. Graduate students and undergraduates from both Marine Science and Chemistry will also be involved in both field and laboratory analyses. Reference levels of metal contaminants in the tissue samples of sharks, particularly, great whites, is lacking. This study would help to increase knowledge about metal accumulation and effects in these top level carnivores. Students will test hypotheses, learn new scientific techniques in the field and laboratory, and produce measurable outcomes.