

2019

## University of North Florida Environmental Center Annual Report 2019

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# 2019 Annual Report



CREATING THE NEXT GENERATION OF LEADERS



Environmental Center

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## SUPPORT THE CENTER

The Environmental Center would not be able to achieve its mission without the support of its generous donors and community partners.

This year, thanks to the generous support of our donors, the Environmental Center was able to hire eight student project leaders (*see page 9*), provide four research development grants (*see page 19*), continue promoting campus sustainability (*see page 15*), offer valuable community programming (*see page 7*) and much more. We continue to need your support!

***Funding for Environmental Center programs comes from private donations.***

Please consider supporting the Environmental Center by making a gift today. Your contribution will help the Center continue its good work through environmental research, student leadership and innovative academic initiatives.

To make a donation, please visit [www.unf.edu/center](http://www.unf.edu/center) or contact Sr. Director of Development for Academic Affairs Kathleen Leone at [k.leone@unf.edu](mailto:k.leone@unf.edu) or 904-620-1838 for more information.

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# LETTER FROM THE DIRECTOR

I am excited to join the Environmental Center as the interim director. I would like to thank our past directors - Drs. Ray Bowman, Radha Pyati, Stuart Chalk and J. David Lambert - all of whom helped shape the Environmental Center to where it is today.

In the upcoming year, our staff and Executive Board will be focused on strategic growth and will be working with community partners, students, faculty and administration to expand the Center's impact and reach. We are especially excited about the growth of the following opportunities:

**Environmental Center Leadership Program (ECLP):** This program is built on the success of our Environmental Leadership Program, which was launched in 2015. The ECLP supports students from all disciplines to develop and apply professional and leadership skills to solve real-world environmental problems. The re-envisioned program is now a scholarship program (*\$1,500 award per student*) that will admit up to 30 passionate students on a merit-based, competitive basis into the inaugural cohort in Fall 2020.

**Environmental Studies Minor:** As of October 2019, the Environmental Center assumed responsibility for the environmental studies minor, which is available to all students from every discipline. The minor is comprised of a menu of sustainability and environmental-related courses. Students will benefit from a reinvigorated minor with dedicated support and focus from the Environmental Center.

**Student Engagement, Retention and Support Initiatives:** Building on the success of past programs, the Environmental Center aims to develop a number of new student-focused initiatives designed to increase student engagement, retention and build an infrastructure for student support. These high-impact programs will focus on experiential learning in Northeast Florida and beyond, development of a student honor society focused on sustainability and professional development, and building a strong student community on campus.

**Research:** We will continue to support environmental-related faculty research across all colleges through grants funded by our generous donors and community partners, including the River Branch Foundation and Vulcan Materials Company Foundation. In addition, the Environmental Center will continue to facilitate research collaborations between UNF faculty, community partners and other universities.

There is much to celebrate from this past year, and there is tremendous potential ahead as we expand opportunities for our students, faculty and community partners.

***Erin Largo-Wight, Ph.D.***  
*Interim Director, Environmental Center*  
*Professor, Department of Public Health*

# MEET THE TEAM



## PROFESSIONAL STAFF



**J. David Lambert, Ph.D.**  
Director 2014-2019,  
and Associate Professor of  
Economics and Geography



**James W. Taylor**  
Coordinator  
Academic Initiatives and  
Research Development



**Maria D. Mark**  
Coordinator  
Environmental Leadership  
Program

## EXECUTIVE BOARD



**Charles Closmann, Ph.D.**  
Department of History  
College of Arts and Sciences



**Erin Largo-Wight, Ph.D.**  
*Interim Director Starting Aug. 2019*  
Department of Public Health  
Brooks College of Health



**Brian Zoellner, Ph.D.**  
Department of Foundations  
and Secondary Education  
College of Education and  
Human Services



**Christopher Baynard, Ph.D.**  
Department of Economics and  
Geography  
Coggin College of Business

## STUDENT STAFF

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**Catherine Ruwell**  
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Preserve Research Assistant

**John Carlisle**  
Communications Assistant

**Curt Price**  
Program Assistant

**Catherine Selin**  
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**Danielle Tipley**  
River Report Assistant

## FACULTY FELLOWS

**Michael Aspinwall, Ph.D.**  
Department of Biology

**Joe Butler, Ph.D.**  
Department of Biology

**Dale Casamatta, Ph.D.**  
Department of Biology

**Chiradip Chatterjee, Ph.D.**  
Department of Economics and Geography

**Charles Closmann, Ph.D.**  
Department of History

**Raphael Crowley, Ph.D.**  
Department of Civil Engineering

**Matthew Davies**  
Department of Chemistry

**Terri Ellis, Ph.D.**  
Department of Biology

**Craig Hargis, Ph.D.**  
Department of Construction Management

**Christopher K. Johnson, Ph.D.**  
Department of Economics and Geography

**Chung-Ping A. Loh, Ph.D.**  
Department of Economics and Geography

**J. David Lambert, Ph.D.**  
Department of Economics and Geography

**Kelly Smith, Ph.D.**  
Department of Biology

**Stephen Stagon, Ph.D.**  
School of Mechanical Engineering

**Adam Rosenblatt, Ph.D.**  
Department of Biology

**Tony Rossi, Ph.D.**  
Department of Biology

**Russell Triplett, Ph.D.**  
Department of Accounting and Finance

**Brian Zoellner, Ph.D.**  
Department of Foundations and Secondary  
Education

# COMMUNITY PARTNERS

The Environmental Center is focused on working with community partners to address community needs, whether through research, education or service-learning. Working with community partners is an integral part of the Center's mission.

The Environmental Center has three areas of strategic focus:

- Parks and preserves
- Rivers, coasts and springs
- Sustainability



## COMMUNITY PROGRAMS

Working with community partners, the Environmental Center offers educational programming that is open to the general public. These programs connect different groups within the community to learn about and discuss relevant issues in Northeast Florida.

### Jacksonville Environmental Symposium

Partner: City of Jacksonville Environmental Protection Board

The annual symposium is hosted at the UNF Adam W. Herbert University Center and features the release of the State of the River Report for the Lower St. Johns River Basin and breakout sessions on various topics.

### Florida Master Naturalist Program Lecture with Dr. Marty Main

Partner: Northeast Florida Master Naturalists

The public lecture featured Dr. Marty Main, associate director of Extension and associate dean of natural resources for the Florida Cooperative Extension Service at the University of Florida. In his lecture, Dr. Main discussed his inspiration for creating the Florida Master Naturalist Program and the plans to establish an endowment to support the program into the future.

### U.S. Green Building Council Florida

The Environmental Center has partnered with USGBC Florida to help develop and implement sustainability education programs.

#### LiveSMART

Partner: U.S. Green Building Council Florida

The USGBC Florida, with support from many businesses and community partners, developed the Sustainability Materials and Resources Trailer (LiveSMART) as a mobile educational unit that provides direct education on sustainable living and green building practices.

#### LEEDing Tiny House

Partner: U.S. Green Building Council Florida

Tiny homes have become a popular trend for people looking to reduce their impact, and the local USGBC Florida chapter took it a step further with the creation of the first LEED-certified tiny home.

The Environmental Leadership Program (ELP), now in its fourth year, continued to make impacts both on and off campus. Student project leaders addressed environmental or social justice issues ranging from food insecurity to educating school children about shark protection.

The positive impacts of the students' projects were also realized within our community. For example, in its second year, "Food Fighters: Student-Powered Hunger Relief" diverted more than 16,000 pounds of prepared, unserved food from the UNF Osprey Café and repackaged the food into more than 15,800 nutritious meals. These meals were delivered to community partners such as the Northeast Florida AIDS Network, the Sulzbacher Center, Feeding Northeast Florida and BEAM. Our project leaders also attended and participated in

*Two of our project leaders were awarded the Osprey Community Engagement Medallion*

several national and local conferences this past year, including the Florida Undergraduate Research Conference hosted at UNF and the National Food & Nutrition Conference & Expo held in Washington, D.C.

Two of our project leaders, Kaley Crawford and Molly O'Brien, were awarded the Osprey Community Engagement Medallion, which recognizes students who demonstrate exemplary commitment to the greater Jacksonville community through activities such as community-based learning and volunteerism.

In addition, Thoren Perego and Katie Vearil were accepted into the highly competitive, Leadership Jacksonville "Next Generation 2019" (formerly Collegiate Leadership Experience). Exploring what it means to be a community trustee, Perego and Vearil interacted with community leaders and professionals and received an in-depth look at difficult issues facing our community.

The ELP would not be possible without the generous support of the Cummer Family Foundation, the UNF Alumni Association and the Felburn Foundation. Their commitment to the ELP supports our goal of creating the next generation of environmental leaders.



**PROJECT LEADERS**

Project leaders are undergraduate students from all six colleges. They are selected based on their passion and commitment to solving environmental and social justice issues within the Jacksonville community. They must demonstrate past leadership and community service experience, as well as an aptitude for critical thinking and developing creative solutions to enrich the quality of life both on and off campus.



**Kaley Crawford**  
*History and Anthropology*

**Preservation Project Jacksonville: The Untold Story**

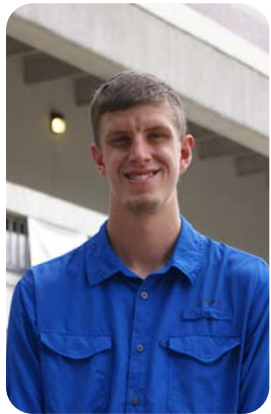
Through research and oral recordings, Kaley Crawford uncovered and preserved some of the history of the Preservation Project and personal accounts of the challenges and victories the city encountered in acquiring these lands we now enjoy as public parks. The information for the history project was sourced through research of the parks, primarily oral history recordings with interviewees who were particularly instrumental in the creation of the parks. The goal was to create a story map for public access that showcases the Preservation Project Jacksonville parks, tells the unique history of our parks and inspires more people to enjoy their beautiful city parks. The oral histories will also be uploaded to UNF's Digital Commons Library, along with ADA-compliant transcripts.



**Caleb Johnston**  
*Coastal Biology*

**Parks 360 - Bridging the Gap Between Parks and the Classroom**

Bridging the gap between the classroom and our local parks was the goal of Caleb Johnston's project. Utilizing virtual reality (VR) 360-degree technology, over 140 fourth and fifth graders in seven economically disadvantaged schools were "transported" to our parks and preserves. The videos focused on Northeast Florida's cultural history and environmental science, which also created opportunities for teachers to use this technology in the classroom. Assessments were conducted to measure the impact VR had on the students' knowledge and awareness, as well as cultivate a strong environmental ethic.



**Kyle Kenney**  
*Coastal Biology*

### Preserve Ambassadors

Preserve Ambassadors collaborated with Groundwork Jacksonville on International Coastal Cleanup Day to continue efforts to clean up Hogan’s Creek. More than 20 bags of trash were collected by volunteers. Kyle Kenney also continued to raise awareness about UNF Sawmill Slough Preserve by hosting a botanical illustration workshop, with local artist Sarah Crooks. He also planned a trip to the Withlacoochee State Forest and the Chassahowitzka River where students learned about Florida’s karst topography, both underground and underwater. His final event was with Hydro Flask who attended UNF’s on-campus Market Day as part of the Outdoor Nation Campus Ambassadorship program. More than 180 students visited the table for prizes and fun activities.



**Molly O'Brien**  
*Ecology and Evolutionary Biology, and Interdisciplinary Studies*

### Environmental Education Outreach

Molly O'Brien’s passion for educating students about the native flora and fauna was the basis for their outreach project. O'Brien collaborated with Project Leader Kyle Kenney to host events on topics such as the botanical illustration workshop. During the ELP fall retreat, O'Brien also created and led an educational outing titled “Birding 101,” which taught the basics of bird watching through illustration, sounds and visuals. Each project leader selected a bird, learned about its characteristics and sounds. O'Brien then led an early morning hike and each project leader was able to identify their bird, either visually or by its sound.



**Thoren Perego**  
*Political Science*

### Land Trust Outreach and Advocacy

Thoren Perego created a “How to Advocate for Land Conservation” handbook to continue to raise awareness and support for land conservation. His handbook was designed for the layperson as a guide to learn how to advocate, what pitfalls to avoid when possible, and where to find valuable resources. Although this handbook was created in partnership with the North Florida Land Trust, he designed it so it could be utilized for general purposes.



**Alice Sanchez**  
*Public Health*

### Food Fighters: Student-Powered Hunger Relief

In its second year, Food Fighters continued to combat food insecurity and eliminate food from being dumped in the landfill. Under the leadership of Alice Sanchez and Dr. Lauri Wright, director of UNF’s Center for Nutrition and Food Security, major improvements for training volunteers in food handling and safety were implemented. Transportation logistics were also improved to ensure food safety. Since its implementation in January 2017, more than 16,000 pounds of food have been recovered and more than 15,800 meals have been provided to the clients of our community partners, Northeast Florida AIDS Network, the Sulzbacher Center, BEAM, Feeding Northeast Florida and Lutheran Social Services.



**Cailla Strobel**  
*Coastal Biology*

### Kids Love Sharks

Creating the next generation of shark advocates is Cailla Strobel’s passion. Her partnership with Sharks4Kids enabled her to take her passion into the classroom to teach first through fifth graders the importance of sharks, remove the fear factors and teach them about conservation. This year, she visited numerous classrooms and reached more than 150 students. She also raised awareness with UNF students by holding “Shark Yoga & Beach Cleanup” events. Different yoga positions were created to mimic a variety of sharks, and as participants performed the yoga movements, Strobel shared fun facts about sharks. Following the shark yoga, participants then did a beach cleanup.



**Katie Vearil**  
*Interdisciplinary Studies*

### Beyond the Trail: A River Runs Through It

Katie Vearil led the fourth series of Beyond the Trail. Her theme, “A River Runs Through It” was to connect the St. Johns River to our parks and educate the importance of Florida’s longest river. Because the river meanders throughout Jacksonville, it impacts just about every park. Students and community members learned about the significant history of the river, as well as the challenges and victories that have impacted and continue to impact the river. For most of the students, it had been the first time they either visited some of the parks and/or kayaked on the river.





## ELP FEATURED PROJECTS

The following projects are being featured because of the tremendous impact they had within our community and schools. Cailla Strobel and Caleb Johnston focused on educating school children about the importance of our marine life and the history and culture of Northeast Florida.

### KIDS LOVE SHARKS

**Project Leader:** Cailla Strobel

**Community Partner:** Duval County Public Schools and St. Augustine Aquarium

Kids Love Sharks: Creating the Next Generation of Shark Ambassadors embodied Cailla Strobel's immense passion for preserving the shark population. She knew in order to accomplish this, educating children was a key component. In order to meet this objective, Strobel partnered with Sharks4Kids, a south Florida non-profit, whose vision and mission perfectly aligned with Strobel's.

Partnering with teachers in Duval and St. Johns counties, and the St. Augustine Aquarium, Strobel incorporated the dynamic educational materials supplied by Sharks4Kids into her presentations, along with designing her own informational posters and activity worksheets. Through these presentations, first through fifth graders learned the importance of sharks, removed the fear factors and taught them why conservation was critical not only to the shark population, but to the human population.

Strobel's presentations consisted of hands-on activities such as utilizing a metal detector that had been transformed into a "hammerhead shark" which allowed the children to "hunt" for various buried aquatic species, such as fish, lobster, crab and sting ray. The children also made shark fin hats and had coloring activity sheets of different species of sharks to take home.

In addition to educating school children about sharks, she also focused on how harmful plastics are to marine life. She raised awareness with UNF students and community members by holding "Shark Yoga & Beach Cleanup" events. Strobel created different yoga positions to mimic sharks and as participants performed the yoga movements, she would share fun facts about sharks. Following the yoga, participants performed a beach cleanup, where she talked about the harmful effects of plastics and litter.



### PARKS 360

**Project Leader:** Caleb Johnston

**Community Partner:** Communities In School

Parks 360 – Bridging the Gap Between Parks and the Classroom was the goal of Caleb Johnston's project. The evolution of Johnston and his project took a 180 degree turn. He originally wanted to create a parks activity book for fourth and fifth graders that would inspire them to visit the parks and instill a sense of stewardship. Johnston's focus was on Jacksonville's Title I schools, which have many economically disadvantage students. He believed these children were less likely to have the resources to visit these parks, and he wanted to develop a connection between them and the parks.

After going through several iterations of his project, he ultimately landed on utilizing virtual reality (VR) 360-degree technology that would "transport" the children into the parks and preserves. Prior to this project, Johnston had no experience with this technology, but he was excited to learn this new skill and believed it would be a more fully-immersive experience for the children – and, he was right about that.

After lots of trial and error, it took over 14 months for Johnston to complete the videos – he shot all the footage, performed all the editing, and did the voice-overs. His focus was on Northeast Florida's cultural history and environmental science, so it would create opportunities for teachers to use this technology as an educational tool.

Upon completion of his project, he determined that offering it as an after-school program was the most direct way to engage the children. He contacted Communities In School, the nonprofit organization that works with Title I schools and introduced his project to their staff. They were so excited about Johnston's project that they purchased the additional VR headsets and coordinated a meeting with the after-school directors of seven schools for Johnston to introduce his project.

Over a two-month period, Johnston visited each school where approximately 20 fourth and fifth graders were introduced to their parks through VR technology. The videos were a montage showing the flora and fauna of the parks to action-packed scenes from the Kingsley Heritage Celebration to the Camp Milton civil war re-enactment.



Johnston also designed an activity sheet that corresponded with the videos. Before the children watched the videos, he reviewed the activity sheet so they could watch for the different clues in the videos. Afterward, they completed the activity sheet and were encouraged to take it home. The children also received a map that showed where the parks are located, a description of each park and a historical time line of Northeast Florida.

The Environmental Center actively collaborates with faculty and community-partners to create unique high-impact learning opportunities for both undergraduate and graduate students. Though Academic Initiatives are faculty-led, the programs receive significant support from the Environmental Center in the form of funding and administrative support.

Unlike traditional academic programs, Academic Initiatives are long-term projects that provide continuous opportunities for students to be involved with ongoing research and community-based projects.

Furthermore, every project associated with an Academic Initiative is grounded in critical thinking, effective communication and analytical skills, and gives students the chance to gain professional experience in a community-based setting. In many instances students can also earn academic credit for their participation in Academic Initiatives.

## *Academic Initiatives provide students the opportunity to contribute to ongoing projects and gain professional experience*

The projects associated with the Sawmill Slough Preserve reflect the long-term nature of these programs. What started as a simple idea to inventory the flora and fauna found within the Sawmill Slough Preserve turned into an ongoing research project involving numerous faculty and students. The scope has also expanded and now includes a growing public history about the Preserve and digital trail interpretations.

While the Sawmill Slough Preserve projects represent some of the more successful Academic Initiatives, the Environmental Center supports a number of programs ranging in topics. Visit our website to learn more about other Academic Initiatives.



## CAMPUS SUSTAINABILITY

The Environmental Center has a long history of working with University administration to ensure that UNF remains a leader when it comes to campus sustainability. Students and staff have hosted waste audits, cleanups, educational events and more.

### Pepsi Recycling Roadster



Working with campus vendors is an important way to educate students about their environmental impact and ways they can make a difference. In the spring semester, Pepsi brought their Recycling Roadster to the UNF campus to help educate students, faculty and staff about the importance of recycling and inspire action through fun and interactive activities. The hybrid vehicle operates off the grid due to its solar panels, and provides six different activities that help promote the benefits of sustainability.

### Textbook Recycling



Since 2012, students from the Environmental Center have managed a textbook recycling program that diverts useful books from the landfill. The books are donated to Better World Books, a benefit corporation that uses proceeds from books sales to support international literacy programs.

In the 2018-19 academic year, students diverted 1,689 pounds of textbooks from the landfill. In total, students have diverted more than 12,000 pounds of books since the program started in 2012.

### Project SEARCH



The past two years high school students from the Project SEARCH Transition-to-Work Program have been assisting with sustainability efforts on campus. The students are responsible for collecting books from the donation bin outside the UNF Bookstore and faculty offices when requested. More recently students have started to also collect printer ink cartridges.



## SAWMILL SLOUGH PRESERVE PROJECTS

The Sawmill Slough Preserve is a 382-acre protected natural area located on the UNF campus. The area was designated a preserve in 2006 by President John A. Delaney and the Board of Trustees.

### Preserve Digital Archive



The Sawmill Slough Preserve not only provides recreational opportunities and habitat for wildlife, it also serves as a living laboratory for research and education. Data and information gathered through research are stored in the Preserve Digital Archive, which was developed by Dr. Stuart Chalk from the Department of Chemistry, to serve as a scientific, cultural and historical archive. The resource will allow future researchers and the general public to access information related to the Sawmill Slough Preserve.

### Historical and Biological Research



The Sawmill Slough Preserve is home to a wide range of flora and fauna, and student research assistants have been working for over a decade to catalog each species found within the Preserve. The effort to inventory flora and fauna has been extremely successful, and more than 1,000 unique species have been identified. In addition to inventorying biological diversity, students and faculty from the Department of History have been compiling historical records related to the Preserve and Robert W. Loftin Nature Trails.

### Digital Trail Interpretations



UNF is home to a natural treasure known as the Robert W. Loftin Nature Trails, which is comprised of five trails, three main and two loop connectors. Both the general public and students can enjoy the natural beauty of UNF campus while at the same time ensuring the integrity of the environment. Student assistants from the Environmental Center created digital trail interpretations of each trail using Story Maps. These interactive maps offer users the opportunity to experience the Preserve with a focus on the flora, fauna, habitats and preservation practices currently taking place.

## PRE[SERVE] ART EXHIBITION

The Pre[serve] Art Exhibition is a juried competition featuring works created by students and alumni that were inspired by personal experiences within the Sawmill Slough Preserve. The third annual exhibition was on display at the Lufrano Intercultural Gallery from March 28 through April 26.

More than 50 works of art were submitted for consideration, but the faculty committee selected only 29 works to display in the exhibition. Of the 21 different artists who participated, 14 were current students and seven were alumni. Awards were announced at the opening reception, which was held on Thursday, March 28.

### Student winners

First place – Mark Lester, “Chapel”

Second place – Ricder Ricardo, “I Become”

Third place – Alexandra Brody, “Impact”

### Alumni winners

Douglas J. Eng, “Goldenrod”

Meredith Sullivan, “Birds”

Mimi S. Pearce, “After the Rain”

### Photo Club Award

Caitlin Noll, “Bobcat”



Works from all three exhibitions have been archived online through the Thomas G. Carpenter Library. In addition, the archive also includes an online Story Map that provides a tour through the Sawmill Slough Preserve showing the “point of inspiration” for each artist. Visit the Environmental Center website to view past works and the Story Map.

Pre[serve] is an ongoing academic collaboration between the Environmental Center, Department of Art and Design, Gallery of Art, and Lufrano Intercultural Gallery. Additional support for this program was provided by the UNF Photo Club.



Providing support for faculty research has been part of the Environmental Center's mission since it was founded in 2004.

The Environmental Center provides Seed Grants to stimulate interdisciplinary research related to the environment. To date, the Environmental Center has provided funding to 62 different faculty totaling nearly \$175,000 in total research funding. These grants have helped faculty purchase equipment and supplies, as well as provide numerous opportunities for both undergraduate and graduate students to participate in the research process.

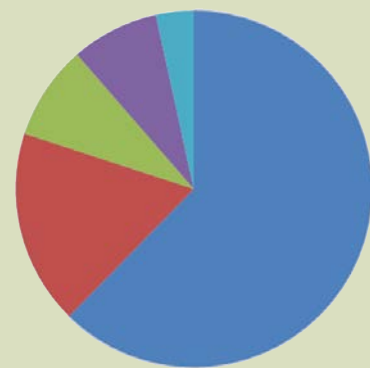
In addition to funding, the Environmental Center has also provided assistance through the use of equipment and facilitating collaboration between UNF faculty and community partners.

***In 2019, the Environmental Center awarded \$23,350 to faculty for research development***

Funding for the Seed Grant program comes from private donations. In 2019, funding came from an endowment established by the River Branch Foundation and a gift from the Vulcan Materials Company Foundation. It is the goal of the Environmental Center to increase the amount of research funding available to faculty by attracting additional gifts.



**TOTAL SEED GRANT FUNDING BY COLLEGE**



- College of Arts and Sciences - \$123,462
- College of Computing, Engineering and Construction - \$35,046
- College of Education and Human Services - \$17,000
- Coggin College of Business - \$15,750
- Brooks College of Health - \$6,800



**SEED GRANTS**

Seed Grants are intended to stimulate the creation of multidisciplinary research projects related to the environment that subsequently results in the preparation and submission of a proposal to an external funding agency.

**Distribution of Diamondback Terrapins in Coastal Georgia**

*Dr. Joseph Butler, Department of Biology*

**Durable and Environmentally Sensible Materials for Oyster Reef Restoration**

*Dr. Craig Hargis, College of Computing, Engineering and Construction*

*Dr. Kelly Smith, Department of Biology*

**Student Driven Design and Implementation of a Solar Powered Watering System and Educational Display at the Jacksonville Arboretum and Gardens**

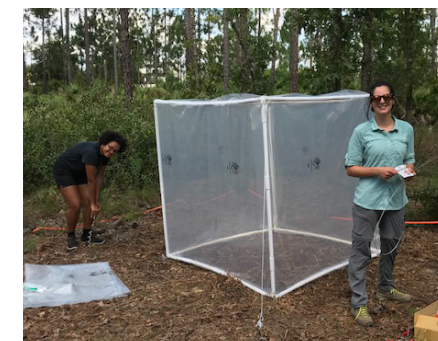
*Dr. Stephen Stagon, School of Engineering*

*Dr. Anthony Rossi, Department of Biology*

**American Alligator (*Alligator mississippiensis*) Distribution Across an Urban Landscape**

*Dr. Adam Rosenblatt, Department of Biology*

*Eli Beal, M.S. Graduate Student*



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