

Florida Sea Grant Project Synopsis for R-C-S-74 (2022)

Project Status

Project Number: R-C-S-74
Project Title: Capacity Building for Florida Sea Grant: Promoting Coastal Resilience, Adaptation, and Equity in Florida
Project Dates: 08/01/2022 to 09/30/2024
Investigators: Andrea Galinski University of Florida
Type of Report: Interim
Reporting Period:
From: 08/01/2022
To: 01/31/2024

Objectives

1. Summarize Project Results

Summarize project results to date related to each objective:

Overview of Objectives

Working with the University of Florida's Shimberg Center for Housing Studies (Shimberg Center), FSG will support the development of a statewide resiliency initiative ("Disaster Resilient Florida") that integrates science, communication, planning, design, and outreach to support communities addressing coastal climate change challenges with an orientation towards underserved communities. Specifically, this partnership will advance the awareness of, and planning and preparation for, the impacts of coastal climate change on affordable housing across Florida.

To meet this goal, the FSG and the Shimberg Center will develop a "Disaster Resilient Florida" (DRF) initiative that focuses on:

- Advancing local communities' capacities and capabilities
- Creating experiential educational opportunities for students
- Expanding partnerships and collaborations
- Supporting marginalized, racialized, and underserved communities
- Institutionalizing a focus on issues at the nexus of climate change and affordable housing

These objectives are described in more detail below:

Objective 1. Advancing local communities' capacities and capabilities

Advance local communities' capacities and capabilities in climate hazards assessment (coastal flooding, heat, etc.), climate science communication and messaging, adaptation planning, pre-disaster mitigation, and post-disaster recovery planning by synergizing with and extending resilience activities of the FSG extension system.

Objective 2. Creating experiential educational opportunities for students

Create experiential educational opportunities for undergraduate and graduate students (through planning and design studio courses, senior projects, thesis work, etc. at the nexus of climate change and affordable housing) within the University of Florida's College of Design, Construction and Planning (DCP); additionally, a graduate student will be appointed to the Shimberg Center to support collaboration with local communities, as well as foster new partnerships and coordination of resilience activities

Objective 3. Expanding partnerships and collaborations

Expand partnerships and collaborations with extension agents, university faculty, stakeholders, and local communities to increase information sharing and co-create new research projects, decision support tools, as well as planning guidance and policy recommendations.

Objective 4. Supporting marginalized, racialized, and underserved communities

Support marginalized, racialized, and underserved communities through engagement, co-development, science, design, and smart planning and policy approaches that can address issues at the nexus of climate change and affordable housing; populations overrepresented in publicly subsidized housing and other types of affordable housing include low-income households, elderly, minority groups, and persons with disabilities.

Objective 5. Institutionalizing a focus on issues at the nexus of climate change and affordable housing

Develop longer-term plans for the institutionalization of collaborations focused on climate change and affordable housing issues in Florida across the College of Design, Construction, and Planning (DCP), University of Florida, and Florida Sea Grant.

Attainment of Research Project Objectives

To achieve the above objectives, the DRF includes activities to 1) promote experiential learning activities for graduates and undergraduate students, 2) advance collaborations and new partnerships across FSG, the College of Design, Construction and Planning, and Florida communities, as well as 3) advance institutional capacity across extension staff, university faculty, regional planning councils, and local communities.

Disaster Resilient Florida (DRF) (Objective 1, 3, 4, 5)

To start, we have developed a website that serves as a platform, structure, and identity that houses the various activities undertaken through this project. Leveraging UF's use of the ESRI ArcGIS platform, we built a project page that showcases the various ongoing or recently completed research projects focused on climate change/affordable housing, and highlights the results of undergraduate/graduate student work that is supported by the project (discussed in more detail below). See www.tinyurl.com/disaster-resilient-florida

The webpage is a portal through which other potential partners, stakeholders, and communities can learn more about the work, as well as contact Center staff to become more involved. Some aspects of the design of the DRF website are continuing to evolve. For example, this semester a cohort of students from the College of Art and Art History's MINT Studio are designing a new DRF logo and branding strategy to strengthen the identity of the website.

DRF Experiential Learning Opportunities for Undergraduate and Graduate Students (Objective 2, 4, 5)

Recently, students across DCP in a number of disciplines have been very interested in coastal climate resilience and vulnerable communities, and there has been increasing interest in more specific issues around housing. We wanted to advance student learning opportunities (either at the undergraduate or graduate level), by providing support to upper division students to complete a terminal studio project or master's thesis on a topic related to resilient and equitable housing. Students are required to complete these project as part of their degree program, and we aim to incentivize greater interest the generation of design and planning strategies for resilient and equitable housing through this work.

Through the "Experiential Learning Opportunities" component, we have funded 2 undergraduate students in the Sustainability and Built Environment (SBE) program including Kaley Arboleda's "Empower, Adapt, Thrive: Jacksonville's Journey to Resilience" and Jacob York's "Climate Migration Decision-Making Framework and Its Application to Florida." The below are short summaries of the students' outcomes, and more details are available of the DRF website. (<https://experience.arcgis.com/experience/1197f939390c47989a491cc91a321b1d/page/Florida-Sea-Grant/?draft=true>)

Empower, Adapt, Thrive: Jacksonville's Journey to Resilience (Kaley Arboleda)
Faculty Advisor: Dr. Azza Kamal, Assistant Instructional Professor, Sustainability and the Built Environment

Overview. This project serves as a case study to illustrate how vacant land can and should be a source for future resiliency planning and community building. Exploring vacant lands in the downtown Jacksonville, FL, the project shows how decades of detrimental discriminatory policies and local government decisions have left out the main component of a city - the people. The project then uses the Warren W. Schell JR. Memorial Park to illustrate how flood mitigation projects have the potential to reinvigorate communities while creating buffer zones of protection in flood prone areas.

Outcomes. The analysis focused on 8 census tracts with the highest poverty rates in the urban core and created an index to determine the most vulnerable or highest priority zones. Census tract 16 was most at-risk based on this vulnerability ranking; this tract also happens to have the highest poverty rate in all of Jacksonville at 74.5%. Within this census tract, Kaley selected a site to "redesign" that was classified as vacant, located within a flood zone, and could serve as a public green space. The site chosen is known as Warren W. Schell JR. Memorial Park, which is located in a neighborhood that historically was known as Sugar Hill along Hogans Creek near the UF Jacksonville Health Center and residential areas. It is an area that can be enhanced for the benefits of restoration, recreation and revitalization. To conclude, a conceptual rendering was developed of how we could begin to re-envision the site.

Kaley's excellent work has been recognized for several awards including:

- SBE Capstone Best Poster, July 2023
- Georgia Environmental Conference Finalist, July 2023 (\$250 + conference admission and stay)
- Florida Student Climate Fellows, May 2023 (\$2500)

Analysis of Decision-Making Factors for Climate Migrants and an Application of that Framework to Florida Counties (Jacob York)

Faulty Advisor: Dr. Hal Knowels, Assistant Instructional Professor, Sustainability and the Built Environment

Overview. When deciding whether and where to migrate, climate migrants will consider a variety of factors. Previous work has categorized these as social, demographic, economic, environmental, and political factors; interestingly these migration drivers broadly align with the four threads of sustainability (society, culture, environment, economy). This relocation poses a challenge to both governments that will lose people and those that will gain people. Modeling potential donor and receiver geographies will allow for governments to plan and prepare to address these challenges.

Results. Data availability issues and time constraints have limited the scope and applicability of this study. This paper is properly understood as an initial study into the field of climate migration rather than an accurate representation of future climate migration pathways. The most broadly applicable portions of this study can be found within the analysis of migration decision making frameworks and the review of existing work within the field. With these caveats made, it is interesting to note the apparent bias towards existing urban centers. This aligns with previous research that posits that migrants follow economic activity (Malloy & Smith, 2011). Likewise, it is interesting to note that a difference in ratio of immigrants to the whole population are positively correlated to migration. This may be indicative of certain geographies being generally more desirable to unestablished residents of different backgrounds.

Lastly, these undergraduate projects have had a lasting influence on the students. Both Ms. Arboleda and Mr. York are now currently enrolled in a master's degree program in Urban and Regional Planning (URP) at UF. Jacob is currently enrolled in an interdisciplinary design studio around housing and climate change, and plans to expand upon his undergraduate research for his URP master's thesis.

DRF Internship Program (Graduate Assistantship) (Objective 2, 5)

Another one of the main elements to be funded is the development of a yearly (9-month) student internship program/graduate assistantship within the Shimberg Center. This graduate assistantship aims to develop the DRF program, support stakeholder engagement, explore future funding opportunities, and support for other related projects on an as-needed basis. Madison Eichorn has worked as an incredible graduate research assistant over the past 2 years. Her primary responsibility was to design and develop the Disaster Resilient Florida (DRF) overall website, as well as enhance the website's various project pages to make the resulting documents and web tools more accessible to local stakeholders and other researchers. This was a substantial effort as she had to learn the ESRI Experience Builder platform, as well as other digital tools like web apps and StoryMaps. In addition, she provided assistance with general background research and project support for ongoing Shimberg Center activities.

Lastly, she also focused her master's thesis on affordable housing challenges as they pertain to campus planning initiatives at several SEC colleges.

From Master Plan to Housing Master's Students: A Study of Graduate Housing & Campus Planning (Madison Eichorn)
Faulty Advisors: Dr. Abhinav Alakshendra (Chair), Dr. Laura Dedenbach (Co-Chair), Urban and Regional Planning Department

Overview. Nearly 940,000 students decided to further their education and pursue a graduate degree in the last academic year. With more graduate students attending and unprecedented undergraduate enrollments, universities are facing new challenges when it comes to housing students both on and off campus. This research study explored the current campus planning initiatives geared toward graduate housing and the current costs of living off-campus using The University of Florida, The University of Georgia, and The University of Alabama as three case studies.

Resilient + Equitable Housing Symposium (Objective 1, 3, 4, 5)

We are in the process of planning two outreach events around issues of climate change and affordable housing. First, we are developing a student-centric event around the engagement

of graduate and undergraduate students in the College of Design, Construction and Planning (DCP) to encourage them to become interested and involved in these issues, particularly around the emerging topic of heat hazards and affordable housing. Aligning with Earth Day (end of April 2024), we would like to screen the film "In The Heights," which is an engaging musical that is set against a backdrop of a heat wave in New York. The screening would be preceded by a panel of speakers that give a short presentation/discussion/Q+A about interrelationships between heat, health, housing. For instance, speakers will give short talks on 1) climate change/increasing heat hazards, 2) health risks/impacts on communities of color, and 3) importance of storytelling in addressing these challenges. The event is an engaging, yet informational way to encourage students' interest in the challenges at the nexus of climate change/affordable housing.

Secondly, we would like to plan a workshop that piggybacks off of the upcoming symposium being hosted by the Florida Sea Grant, Department of Landscape Architecture, and College of Design, Construction and Planning in the Fall of 2024. The aim of this event will be to connect other researchers working on aligned issues with one another, as well as to community partners and stakeholders.>

Students Supported

Name	Institution	Department	Major Professor	Status	Anticipated Graduation Date	Thesis Title	Student's email	New or Continuing?	Graduation Status	If the student has graduated, which Degree was conferred?	Current employer
Jacob York	University of Florida	Sustainability + Built Environment (SBE)	Dr. Hal Knowels	Undergraduate	12/16/2023	Analysis of Decision-Making Factors for Climate Migrants and an Application of that Framework to Florida Counties	jacob.york@ufl.edu	New for this reporting period	Student has not graduated during this reporting period		UF, Department of Urban and Regional Planning
Kaley Arboleda	University of Florida	Sustainability + Built Environment (SBE)	Dr. Azza Kamal	Undergraduate	08/14/2023	Empower, Adapt, Thrive: Jacksonville's Journey to Resilience	kaleyarboleda@ufl.edu	New for this reporting period	Student has graduated during this reporting period	Bachelors	UF Department of Urban and Regional Planning
Madison Eichhorn	University of Florida	Urban and Regional Planning	Dr. Abhinav Alakshendra	Masters	05/04/2024	Master Plan to Housing Master's Students: A Study of Graduate Housing & Campus Planning	madisoneichhorn@ufl.edu	New for this reporting period	Student has not graduated during this reporting period		

Leveraged Funding

Title	Funding Amount	Project Completion Date	Project Sponsor
Democratizing Data for Equitable Recovery	\$66,000	03/30/2023	National Academies of Science, Engineering and Medicine (NASEM) Gulf Research Program
Gulf South Studio	\$250,000	06/30/2023	National Academies of Science, Engineering and Medicine (NASEM) Gulf Research Program
Gulf South Studio, Year 2	\$303,900	07/31/2024	National Academies of Science, Engineering and Medicine (NASEM) Gulf Research Program

Outreach Activities

Description	Focus Area	Event or Outreach activity	Hours Devoted	Large Event, Festival	Number of people in attendance for your event or a

					Formal Teachers/Educators (K-12):	Students reached in classroom or class trip	General Public	Industry	Informal Teachers/Educators	Legal Professionals	City/County Government	Elected/Offi
Presentation at the 2024 Florida Sea Grant Symposium	Hazard-Resilient & Climate Ready Coasts	Conference Presentation		Event Organizer	0	0	0	0	20	0	0	

Communications Products

Type	Citation	Status
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Accomplishments & Impacts

Title	Habitats Enhanced	Policy, Information, Model or Tool Developed			Businesses Created/Sustained		Jobs Created/Sustained		Estimated Economic Benefits	Improved Products, Processes or Standards	Workforce Development Training	Coastal & Marine Literacy Enhanced
		Acres	Number of agencies receiving/using	Number of communities receiving/using	Number of practitioners receiving/using	Created	Sustained	Created	Sustained	Dollar Amount	Number of practitioners receiving/using	Number of practitioners receiving/using
Disaster Resilient Florida website				10								

Type of Outcome	Relevance	Response	Results	Project Partners
Accomplishment	While opportunities to improve resilience (especially for economically and socially vulnerable communities) exist on numerous fronts, we believe that housing is a particularly critical link in building adaptive capacity and community resilience. Housing is the nexus of personal well-being, public health, social equity, and economic stability. With accelerating sea level rise and more intense storm events, homes all along the U.S. coast are at risk. Nowhere is this more apparent than in the state of Florida, which ranks first in the nation for potential residential storm surge damage with more than 2.9 million homes at-risk and an associated reconstruction cost of \$600 billion (CoreLogic, 2019).	The creation of the "Disaster Resilient Florida" website provides a platform, structure, and identity that houses various activities undertaken through this project. Shimberg Center developed a user-friendly website that articulates the goals and objectives of the initiative, summarizes the challenges we face, showcases the various completed or ongoing research projects focused on climate change/affordable housing. The aim is to better connect local stakeholders and communities with information and tools that can assist in making affordable housing more resilient. The webpage is a portal through which other potential partners, stakeholders, and communities can learn more about the work, as well as contact Center staff to become more involved.	The DRF website was recently publicly launched in January of 2024 during the Florida Sea Grant Symposium. While it is difficult to assess who is viewing the webpages, the traffic jumped up to 50 views/day after the event. It is logical that most of these views were from workshop attendees who were fellow researchers, extension agents, local stakeholders, and/or students. Since then, traffic ebbs and flows and averages about 4 page views per day. We plan to develop more outreach to expand awareness over the coming months as revisions to our branding strategy are completed.	

Economic Benefits

Project_ID	Catagory	Cat Details	Value Chain Story	Testamomial	Entry Date
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