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UF IFAS UNIVERSITY of FLORIDA

2021-2026

Five Year Strategic Plan

UF IFAS
Nature Coast Biological Station

UF IFAS UNIVERSITY of FLORIDA

NATURE COAST BIOLOGICAL STATION

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Executive Summary

The UF/IFAS Nature Coast Biological Station (NCBS) seeks to improve the conservation and management of natural resources in one of the most pristine ecological regions in North America. Located in the Suwannee River estuary, NCBS researchers and staff are currently working a wide range of challenges for fish and wildlife management, habitat and shoreline protection/restoration strategies, shellfish aquaculture, and impacts of altered freshwater flow to estuaries and the natural resources they support. Despite a relatively intact natural flow regime of the Suwannee River, major ecological reorganization along the Nature Coast is imminent and driven by the combined effects of climate change, land use, freshwater withdrawal, and habitat restoration. Given these expected impacts, our largest research priority is to evaluate how a changing climate and changing land/freshwater use—including agricultural, urban, forestry—will influence freshwater quality and quantity in the Suwannee River basin and associated estuary, and how those impacts influence natural resources in the region. To do so, we seek to strengthen collaborations with units across campus and off campus programs. This strategic plan (1) sets milestones for increased collaboration and (2) identifies strengths, weaknesses, opportunities, and threats to our proposed work. Further, there is a clear need to the station to bolster research capacity for support of the shellfish aquaculture industry. Finally, the station will seek to continue improvement of facilities with the advancement committee, as well as creating incentives for collaboration across campus in the form of internships, graduate assistantships, and focused workshops to build collaborations.

This Strategic Plan

This Five-Year Strategic Plan is intended to guide the faculty and staff of the UF/IFAS Nature Coast Biological Station (NCBS), along with university and agency partners, on the goals and objectives of the station for the period of 2021-2026. This document is not intended to be a comprehensive summary of the activities of NCBS. These are summarized in annual reports, available at https://ncbs.ifas.ufl.edu/about/ncbs-annual-report/, and which should accompany this document for reference.

Regional Context

The Nature Coast of Florida, located in the Northeast Gulf of Mexico (Figure 1) is one of the most pristine coastal regions of the United States. This coast contains a large and unique estuarine system with tidal and shallow creeks, semi-continuous oyster reefs, salt marsh and mangrove dominated shorelines, and the second largest seagrass area in the United States. About 13% of all jobs in the Nature Coast region are directly dependent on natural resources (farming, forestry, fishing and aquaculture) (Southwick Associates 2015), compared to only 1% statewide in Florida. The hard clam aquaculture industry has a $50 million-dollar statewide impact annually and supports over 500 jobs, mostly in the Cedar Key area (Adams et al. 2014). Recreational fishing in the region is extremely popular, and the Nature Coast contains some of the most productive regions of Florida's $8 billion-dollar recreational fishing industry. The region also supports important commercial fisheries for crabs, oyster, and reef

fishes. Clearly, marine-based tourism activities (e.g. birding, kayaking, tourists), shellfish aquaculture production, and recreational/commercial fishing are all integral parts of the region's economy and are important components of local culture.

Changes in freshwater flow and salinity in the Suwannee River estuary are expected to have direct effects on recreational and commercial fisheries, tourism, and aquaculture in the region. Physical and ecological dynamics of the Nature Coast are strongly influenced by the Suwannee River, which is one of the largest unimpeded rivers in the eastern US (Figure 1). With a drainage basin of 28,600 km^2, the Suwannee River connects the Great Okefenokee Swamp to the Lower Suwannee and Cedar Keys National Wildlife Refuges located in the Nature Coast. In the Suwannee River Estuary System (SRES), river discharge is known to influence the abundance and composition of phytoplankton (Bledsoe and Phlips 2000), which impacts the hard clam aquaculture industry and has cascading effects on the food web. The Suwannee River is also important in structuring estuarine fish, macro-invertebrates, and oyster communities (Tsou and Matheson 2002). Flow rates also affect the recruitment and growth of the threatened Gulf Sturgeon (Flowers et al. 2009) as well as popular game fish such as Spotted Seatrout and Red Drum (Purtlebaugh and Allen 2010).

Figure 1. Map of the Suwannee River drainage basin and estuary system (http://www.srwmd.state.fl.us/138/Maps)

The Nature Coast is recognized widely for its significance to conservation. Both the South Atlantic and Peninsular Florida Landscape Conservation Cooperatives (PFLCC) have identified the Nature Coast as a key region for protection of hardwood forests, pine and scrub, coastal uplands, and estuaries. This region contains more priority resources per area than any region of Florida and has been classified as the highest level of priority for conservation in the Florida Critical Lands and Waters Identification Project (PFLCC 2016). Vulnerability of many natural resources in this region (e.g., emergent marsh, seagrass, mangrove, oyster reef and seabirds) is considered high (Williams et al. 1999; Carlson et al. 2010; Watson et al. 2015).

Major ecological reorganization along the Nature Coast is imminent and driven by the combined effects of climate change, land use, freshwater withdrawal, and habitat restoration. Climate change scenarios for Florida predict more vigorous hydrologic cycles due to intense precipitation events with lower overall flow levels caused by greater evapotranspiration and reduced runoff (Mulholland et al. 1997; Mattson and Rowan 1989). Climate-induced sea level rise and saltwater intrusion is already affecting estuaries, marshes, and tidal creeks that rely on a delicate balance of fresh and salt waters to maintain habitat structure and ecosystem function (e.g., Langston et al. 2017). Loss of oyster reefs in the area are a direct result of reduced freshwater flows, with over 65% net loss in oyster reef area in the Suwannee estuary since 1982 (Seavey et al. 2011; Frederick et al. 2016). Agricultural water withdrawals in the Suwannee River Management District has increased five-fold since 1980 (Marella et al. 2014; Marella et al. 2016), and conversion of lands from forestry to more intensive agriculture and urban development will require even higher withdrawals in the future. For example, human population growth in the Nature Coast is projected to increase by 30-75% over the next 20 years (Smith and Rayer 2014). These changes are expected to alter the quality and quantity of freshwater delivery to the Suwannee River estuary (Frazer et al. 2005) and cause impacts aquatic habitats (seagrass, salt marsh, and oyster reefs) as well as fish, wildlife, and aquaculture.

These challenges facing the Nature Coast region of Florida are not unique to this region and represent common threats to coastal ecosystems worldwide. Impacts of altered hydrology, expanding human populations, and climate change are the major stressors that threaten estuarine food webs globally (Kennish 2002) The natural resource challenges in the Nature Coast are indeed ubiquitous in coastal systems. Addressing them will require multidisciplinary approaches to science that integrate biological, economic, and social factors that drive natural resource management. The Nature Coast region can therefore serve as a mesocosm for broader impacts of climate change and anthropogenic influences to coastal ecosystems and natural resource use.

History – UF/IFAS work in the Nature Coast

UF/IFAS has a long history of research, teaching, and extension programs in the Nature Coast region, along with an extensive track record of working with agency cooperators to improve the conservation and management of natural resources and communities in the region. Highlights of the UF/IFAS activities in the region include:

- In 1951 the University of Florida established a Marine Laboratory at Seahorse Key. The site is leased from the USFWS Cedar Keys National Wildlife Refuge and continues today with a comprehensive K-12 education program, as well as undergraduate and graduate courses operated at the facility. Seahorse Key Marine Lab is operated as part of NCBS https://ncbs.ifas.ufl.edu/seahorse-key-marine-laboratory/.
- When Florida enacted a ban on gill net fishing in state waters in 1994, it put hundreds of commercial fishers out of work. Using Job Training Partnership Act funding, Harbor Branch Oceanographic Institution and UF/IFAS developed the technology and retrained these workers to culture hard clams. Today, the hard clam aquaculture industry is valued at $40 million annually and employs over 500 people in Cedar Key alone. UF/IFAS research and extension programs led by Leslie Sturmer in collaboration with local fishers developed this program into a primary economic engine for communities in the Nature Coast. See http://shellfish.ifas.ufl.edu for background and up-to-date information on this valuable industry.
- In 1997, Bill Lindberg (UF/IFAS Fisheries and Aquatic Sciences) led and edited the Proceedings for the "Florida Big Bend Coastal Research Workshop", held in Steinhatchee, Florida. Through a partnership with Florida Sea Grant, this workshop highlighted the unique physical and biological components of the region and described a need for ecosystem-level management to protect the pristine resources and enhance their value to the communities. This report included a comprehensive assessment of natural resources in the region, and focused on processes influencing rivers, wet-

lands, estuaries, and reef habitats in the region. The seminal workshop coalesced a diverse group of state and federal agency partners to identify key natural resource needs for the future. In many ways, this workshop was a precursor to the current NCBS and its mission.

- UF/IFAS researcher Tom Frazer and colleagues started Project COAST, a water quality monitoring project throughout the Nature Coast region. This monitoring project compiled years of monthly data on water quality in the region.
- UF/IFAS has worked with USGS on Gulf Sturgeon ecology and conservation over the past 25 years. Researchers from both groups have conducted extensive mark-recapture data and obtained population estimates for Gulf Sturgeon, as well as develop reproduction and culture techniques. Gulf Sturgeon can reach over six feet in length and weigh over 200 pounds. Today, the USGS scientists Ken Sulak and Mike Randall continue their work in monitoring the Gulf Sturgeon in the Suwannee River, which contains the largest population of this giant fish in the Gulf of Mexico.
- In September of 1997, the Senator George Kirkpatrick Marine Laboratory opened in Cedar Key. This lab houses Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute (FWRI)'s Fisheries Independent Monitoring program, and their program has collected extensive data on estuarine fish and habitat quality in the region over the past 20 years. The lab also houses staff from UF/IFAS and from the Florida Department of Agriculture and Consumer Services (DACS). The FWRI lab director is Caleb Purtlebaugh, who received his MS degree from UF/IFAS's Fisheries and Aquatic Sciences Department.
- Beginning in 2009, UF/IFAS researchers Bill Pine, Peter Frederick, and Leslie Sturmer began evaluating trends in oyster reef abundance in the region. Their work in collaboration with agency partners quantified loss of oyster reefs in the region and postulated how oyster reefs provide ecosystem services by retaining freshwater in the estuary. In 2018, they began a large-scale oyster reef restoration project at Lone Cabbage Reef, located at the mouth of the Suwannee River. http://blogs.ifas.ufl.edu/news/2018/12/11/lone-cabbage-oyster-reef-restoration-project/.
- UF/IFAS researchers have conducted numerous other projects in the region addressing wildlife (birds, mammals, sea turtles), seagrass ecology, shellfish, and fishery resources in the Nature Coast.

The UF/IFAS Nature Coast Biological Station

The UF/IFAS efforts and collaborations with state and federal agencies have a long history of impacts to the region. The Nature Coast Biological Station began in 2015 as a catalyst for enhanced research, teaching, and extension programs and partnerships in the future. It is the only off-campus University of Florida facility that is focused on natural resources including research, teaching, and extension programs that inform management of natural resources, including fish, wildlife, and aquatic habitats.

Our research and extension programs have a range of ongoing projects working to facilitate science-based natural resource use and management, including coastal habitat ecosystem function, oil spill impacts, changes in freshwater flow, invasive species, and citizen science projects.

The mission of the Nature Coast Biological Station (NCBS) is to advance the conservation and sustainability of natural resources throughout the Nature Coast and to become a leader in serving coastal communities through experiential learning, collaborative research and public engagement.

Collaborations with UF departments and units in 2020 include:

- Department of Wildlife Ecology and Conservation
- School of Forest Resources and Conservation
- Department of Soil and Water Sciences
- Department of Food and Resource Economics
- Department of Environmental Horticulture
- Department of Biology
- Department of Geological Sciences
- Florida Water Institute
- Florida Sea Grant
- Florida Climate Institute
- UF Engineering School of Sustainable Infrastructure and Environment
- Natural Resource Leadership Institute
- College of Veterinary Medicine
- UF/IFAS Center for Public Issues Education in Agriculture and Natural Resources
- UF Health
- Further, NCBS works with Santa Fe College who provides support and partnership on operations for Seahorse Key Marine Lab.

Agency partners on NCBS programs include:

- Florida Fish and Wildlife Conservation Commission
- Florida Department of Agriculture and Consumer Services
- National Oceanic and Atmospheric Administration
- Suwannee River Water Management District
- Southwest Florida Water Management Distric
- Florida Department of Environmental Protection
- US Geological Survey
- US Fish and Wildlife Service
- Citrus, Dixie, Hernando, Jefferson, Levy, Taylor, and Wakulla Counties
- Cities of Cedar Key, Crystal River, Yankeetown, and Steinhatchee

NCBS summer research interns and students mentored by agency staff have worked in areas including forestry practices, fisheries sampling, oyster reef dynamics, seabird ecology, and wildlife management practices, as well as wildlife-dependent recreation (ecotourism) and public outreach and environmental education. The agency staff also provide career-related professional advice and direction, becoming advocates for these students as they move forward in their career.

In its first six years (2015-2020), NCBS is now well established and highly productive supporting all aspects of the land-grant mission, with a strong track record of private and public fund raising. In 2018 NCBS received a grant for facility improvements from the National Science Foundation, which has provided support for build out of a modern research lab facility with filtered seawater and modular design for a wide range of experimental approaches. The station team had over $5 million in active research grants in 2019, including grants for highly competitive federal sources (NOAA, EPA) as well as research and extension grants with state agency partners (FDEP, FWC, Water Management Districts, etc.). Our extension program is well supported by grants and serves as an award winning example at the state, regional, and national levels.

The NCBS Team

Faculty

Mike Allen, Director. Mike is a professor in the Fisheries and Aquatic Sciences Program within the School of Forest Resources and Conservation (SFRC). His research focuses on fisheries management and fish habitat requirements, and he uses a combination of field investigations and simulation modeling to evaluate management options for fisheries resources. Dr. Allen was appointed Director of NCBS in 2015 and manages the station, as well as teaching a graduate course entitled "Fish Population Dynamics" in the SFRC.

Savanna Barry, Regional Specialized Extension Agent. Savanna directs the extension/outreach programs at NCBS. Her program focuses on enhancing best practices for sustainable tourism and creating opportunities for volunteerism and citizen science programs that enhance the quality and management of habitats and species within the Nature Coast region. As a Regional Specialized Agent, she also focuses on providing leadership, coordination, and mentorship for county extension faculty in the region.

David Chagaris, Research Assistant Professor. David is a quantitative ecologist who focuses on fish population and ecosystem modeling to inform management of recreational and commercial fisheries. David's laboratory addresses challenges that include how stressors such as algae blooms, invasive species, and fishing pressure influence the structure and function of marine food webs and impacts fisheries resources.

Charles Martin, Research Assistant Professor. Charlie is an estuarine ecologist whose work broadly addresses coastal conservation and community ecology, specifically habitat requirements for fishes and invertebrates, ecology of foundation species such as submerged vegetation, and impacts of stressors (e.g., oil spills, non-native species) on estuarine food webs. Charlie's laboratory operates a large field research program that spans the northern Gulf of Mexico, and he uses a variety of empirical and experimental approaches to explore how stressors will influence food webs, predator-prey interactions, and economically important species.

Biological Science Staff

Brad Ennis, Biological Scientist. Brad is an estuarine ecologist with experience working on oyster reef and salt marsh ecology, with interest and skills in spatial analysis and GIS. Brad leads the sampling for the Lone Cabbage Oyster Reef Restoration project and works to evaluate effects of restoration methods on ecological processes in this region.

Holden Harris, Postdoctoral Researcher. Holden is a fisheries ecologist whose work has focused on invasive species impacts and control efforts. He has extensive experience in ecological implciations of non-native species, management options, and bioeconomic implications of control efforts. He is working to explore how changes in freshwater quality and quantity will influence fish and wildlife populations in the Suwannee River estuary.

Reggie Markham, Aquaculture Biological Scientist. Reggie coordinates research around shellfish aquaculture including hard clams and oysters, with emphasis on laboratory operations, water delivery, water quality, and logistics of lab and field operations in aquaculture research.

Ashley McDonald, Biological Scientist. Ashley is an estuarine ecologist who focuses on stressors that influence aquatic ecosystems including seagrass, saltmarsh, and mangrove habitats. Ashley works with Charlie Martin's laboratory and leads field sampling and experiments that are key to understanding processes ongoing in estuarine environments.

Travis Thomas, Biological Scientist. Travis is a wildlife ecologist whose work addresses conservation and management of reptile populations in the region. He works extensively with turtle populations including the Suwannee Alligator Snapping Turtle and the Diamondback Terrapin, and his work seeks to understand threats to reptile populations including impacts of climate change, bycatch harvest, and predator effects on nest success of reptiles.

Natalie Simon, Biological Scientist. Natalie is a shellfish ecologist whose work supports aquaculture industry in the region. She utilizes a range of laboratory and field approaches to understand factors that can improve aquaculture operations, and she regularly conducts public outreach and education regarding the shellfish aquaculture process and the industry.

Leslie Sturmer, Statewide Shellfish Extension Agent. Leslie provides leadership and outreach to the shellfish aquaculture industry statewide. A 25-year resident in Cedar Key, she works closely with shellfish growers to address challenges in all aspects of shellfish aquaculture (e.g., seed production, grow out conditions, environmental factors influencing aquaculture effectiveness, and economic aspects of shellfish aquaculture). Leslie has worked with a wide range of collaborators statewide to address factors that can improve shellfish aquaculture operations.

Staff

Emily Colson, Graphic Design and K-12 Coordinator. Emily coordinates the website and social media for NCBS, as well as graphic design of materials for public outreach. She leads our K-12 programs that in the past two years have hosted over 1,000 fifth graders to visit the Station and Seahorse Key Marine Lab. Emily works with the entire NCBS team to manage and operate the social media presence for the research and extension programs.

Cassandra Key, Administrative Assistant. Cassandra has responsibility for all fiscal aspects of the station. She works with the group to coordinate all hiring, grants, expenditures, and logistics of guests who use the facility for classes, public events and research purposes. Cassandra insures that employees are educated on training required, reporting of time and management grants and expenditures at the station.

Kenny McCain, Marine Operations Manager. Kenny is a US Coast Guard licensed boat captain and is in charge of all sampling logistics and safety operations at NCBS. He works with our entire team and guests to the station to insure safe use of boats and field operations in our region. Kenny provides upkeep and maintenance for facilities at both Cedar Key and the Seahorse Key Marine Lab. He also works with K-12 and college school groups to conduct field sampling, and he provides education to all visitors about the history of this region and its natural resources.

Bhawna Thapa, Research Coordinator. Bhawna serves to coordinate grant writing and proposal development at NCBS. She coordinates proposals among our team and faculty on campus. Bhawna also coordinates data management processes for ongoing projects at the station.

Looking Forward to 2021-2025

The largest strategic priority of NCBS is to evaluate how land use change via agriculture, urbanization, and forestry—and a concurrently changing climate—will influence freshwater dynamics in the Suwannee River basin and the associated impacts of these changes. This overall objective has been in place since the station began and has supporting grants already underway. Climate change and altered freshwater quality and quantity represent the largest potential threats to natural resources and coastal economies in this region. Evaluating options for mitigating impacts to changes in freshwater flow, water quality, and impacts of storm events and climate change on the coastal ecosystem remains the top overarching goal of the NCBS team. Faculty at the NCBS have led multiple, interdisciplinary proposals to address this challenge that include faculty from academic units and agency partners mentioned above. A summary of ongoing projects, many of which support this overarching priority is available in the annual report.

SWOT Analysis

At the end of 2019 the NCBS Technical Advisory Committee https://ncbs.ifas.ufl.edu/committees/ conducted a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis as a precursor to this strategic plan. The committee was charged to evaluate all aspects of the station. Below is summary of the analysis of the committee with NCBS faculty/staff input.

Strengths:

- The station is exceptionally well integrated with agency partners and with the communities in the Nature Coast, and those partnerships position the station for competitive grants and delivery of highly effective public outreach.
- The facility is meeting the land-grant mission of research, extension/public outreach, and instruction with enthusiasm and administrative support.
- The location of NCBS is ideal for addressing challenges of land use change, altered water flow, and impacts of climate change (e.g., changes in precipitation patterns, storm events, and coastal habitat changes resulting from climate change). Impacts of climate change are evident throughout this region.

- The NCBS facility has an established venue for public education and engagement, and the location in downtown Cedar Key allows high visitation.
- Facility and program position the station well for fundraising, and the NCBS advancement committee is operational and successful thus far.
- The facility has integrated well with a large number of UF academic units, ample collaboration already underway. There exists a diversity of funding opportunities at the regional level, with opportunities for broader support from nationally competitive sources.
- The local community in Cedar Key is a key partner in all aspects, and their collaboration already shows success.
- NCBS faculty and staff have demonstrated research output with publications in high-impact journals.
- Collective research synthesis and priorities match well with agency partner priorities.

Weaknesses:

- The footprint of the NCBS facility is small with limited potential for growth in office and laboratory space. There is also a noted lack of storage for gear, boats, and trucks on the island.
- Location in Cedar Key makes housing properties scarce, and housing, proximity to schools, and doctors could be a barrier to recruiting faculty and staff. Staff living in Gainesville have an extended commute to work.
- The NCBS site is located at a low elevation (low) and is vulnerable to flooding and storm events. Preparation and recovery from storm events causes lost time for research and other duties. In the last three years, the station has experienced two major flood events from hurricanes.
- UF shellfish aquaculture research capacity is relatively weak, with few dedicated faculty working directly on shellfish biology/industry.

Opportunities:

- Funding associated with Deepwater Horizon oil spill creates opportunities for grants and collaborations throughout the Gulf.
- Location on the northern Gulf coast poises NCBS and Cedar Key for opportunities to be a leader/flagship of climate and resiliency research for restoration, aquaculture, fisheries, and wildlife.
- Potential for donors to contribute to the programs and facilities at NCBS.
- Professional development for students via internships and mentoring by NCBS faculty/staff and regional agency partners in the region
- Research on minimum flows and levels and other similar agency needs – tie with RESTORE grant opportunities:
    - Freshwater as a commodity
    - Coastal growth
    - Engineering resiliency to storms
- Potential for future collaborations with the UF Whitney Lab.
- Extensive citizen science opportunities are extensive with local retirees and public partners.
- Recently installed wet lab and seawater system funded by NSF will facilitate several on-going and future projects as well as provide infrastructure critical to supporting research and outreach on the ecological effects of climate change in the region.

Threats:

- Competitive funding environment, particularly uncertain budget period with COVID-19
- Activities in the Suwannee Basin are not all in control of state management, with part of the watershed in Georgia and jurisdiction over water use of limited enforcement
- Changes in Suwannee Valley:
    - Development, toll road, land use, economic landscape
    - The largest ecological threat to the region, thus the highest priority for NCBS
- Lack of integrated data collection technology:
    - Drones, internet, continuous monitoring of water quality
- Tendency to focus on proximal issues affecting Cedar Key. We should remember that NCBS is to serve the entire region.

Five-Year Goals (2021-2026)

Given the input of our Technical Advisory Committee and review of all priorities summarized above, the station seeks to obtain specific strategic and operational goals over the next five years. Strategic goals are used to track metrics of progress toward our mission for research, extension, and teaching. Operational goals are intended to identify needs for continued achievement of goals of the station overall, including facility and staffing needs over the next five years.

Strategic Objectives

1. Quantify impacts of research and extension on our strategic priority of evaluating how land use and climate influence freshwater quality and quantity, and how those impacts influence natural resources in the Suwannee River estuary:

   a. Assess metrics related to best management practices. These should be disseminated to (i) managers for helping developing for agricultural and municipal uses, (ii) scientists via research publications, and (iii) stakeholders via extension publications.

   b. Identify partnerships on campus and links to more faculty under this scope, and

   c. Develop mitigation strategies for altered freshwater flow and climate impacts and educate the public on those strategies.

2. Strengthen collaborations with broader groups across the UF campus and off campus programs, including the Whitney Laboratory at UF, the UF Water Institute, the Florida Climate Institute, and the UF College of Veterinary Medicine. Set milestones for increased collaboration and track progress annually.

3. Bolster research capacity addressing needs of the shellfish aquaculture industry at NCBS, via human resources (faculty and/or biological science staff) and capital resources (e.g., boats, flow-tanks, laboratories) to address this need.

4. Increase collaboration and incentives for UF faculty and staff to utilize station. These including undergraduate internships, graduate assistantships, and focused workshops to improve skill sets and build collaborations.

Operational Objectives

1. Complete the construction of the third floor at NCBS with additional office space and classroom.

2. Obtain promotion and successful career tracks for faculty and staff at the station. This will both require and promote continued excellence in research, extension, and teaching programs housed at NCBS.

3. Address housing needs and overnight stay options for students and faculty, as addressed by the NCBS Advancement Committee. To do so, renovate the former motel rooms for office and lab space, requiring fundraising with the NCBS Advancement Committee.

4. Secure funding for the undergraduate summer internship and the K-12 education programs through private fundraising and grants.

Goals of the University of Florida

Diversity, Equity, and Inclusion

We are committed to applying diversity, equity, and inclusion (DEI) priorities for faculty, staff, interns, and students at the University of Florida. In 2020, seven of 13 total NCBS faculty and staff were female, but racial diversity was lacking in our team. Diversity in our team could be enhanced through initiatives for recruitment of faculty, staff, graduate students and undergraduates. https://hr.ifas.ufl.edu/assets/pdf/diversity/Search%20guidelines%202019Apr03.pdf

During 2021, the NCBS will work with the new initiative in IFAS HR to explore mechanisms to improve diversity on the NCBS faculty and staff, in concert with ongoing IFAS initiatives in this area https://hr.ifas.ufl.edu/diversity-and-inclusion/programs--initiatives/. Guidelines for searches will include steps for an inclusive process for recruitment of individuals to our programs, and our approach to operation at NCBS will include:

- Participation on the Research and Education Center (REC) DEI committee and initiatives therein,
- Instituting hiring practices following guidelines for increasing diversity in applicants https://hr.ifas.ufl.edu/assets/pdf/diversity/Search%20guidelines%202019Apr03.pdf, including adding statements about our commitment to DEI in position announcements and advertising widely on multiple list-serves and platforms,
- Monthly discussions during NCBS staff meetings that address DEI topics and create a safe space for dialogue among our employees,
- Quarterly check in during faculty/student/staff evaluations regarding DEI,
- Annual student and staff orientation that features diverse speakers and outlines NCBS's approach to DEI in the program, and
- Exit interviews with graduate students working at NCBS by the NCBS Director, where DEI topics will be discussed with options for improvement highlighted.

Top-10 Status of Programs

For the third year in a row, the University of Florida has risen in the U.S. News & World Report Top Public Schools rankings, climbing to No. 7 in 2020. Regarding Natural Resources and Conservation, UF ranked #4 nationally by the USA Today in 2019. Natural resource and conservation degrees require hands-on experiential training in field work, data collection, and equipment use. A 2014 review of the value of field stations by the National Academy of Sciences (National Research Council 2014) highlighted the value that biological stations and facilities like the NCBS can substantially improve opportunities for graduate and undergraduate students. In 2021-2026, the NCBS team will continue to track graduate and undergraduate use of the facility for courses, internships, and graduate research.

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