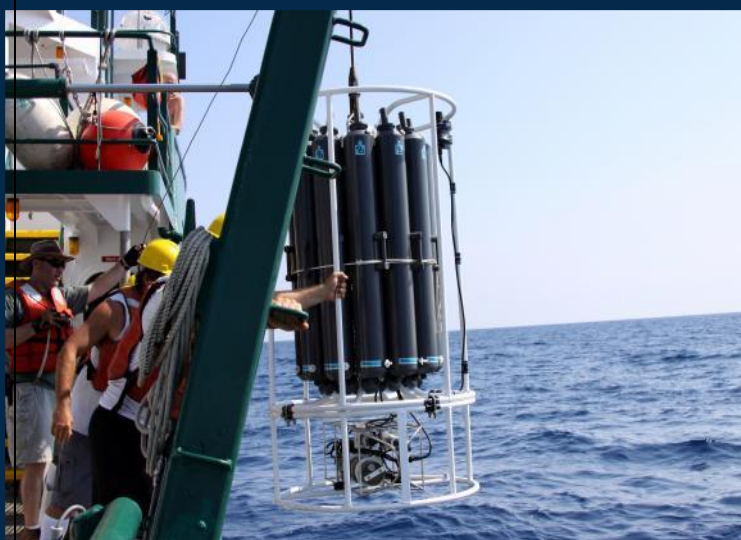




FLORIDA INSTITUTE OF OCEANOGRAPHY



2018-2019 Annual Report

Florida Institute of Oceanography

Academic Infrastructure Support Organization

Hosted by the University of South Florida

Supporting Excellence in Marine Science, Technology

And Education

Presented by:
James Garey, Ph.D.
Acting Director

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For more information on the Florida Board of Governors, Florida Institute of Oceanography and its Host Institution, please visit:

Florida Board of Governors, www.flbog.edu

University of South Florida, Host Institution, www.usf.edu

Florida Institute of Oceanography www.fio.usf.edu

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Greetings the FIO Acting Director

Greetings!

I am honored and excited to have the opportunity to help advance FIO's mission; providing academic and infrastructure support to our 30 member institutions. I am still serving in my regular role as Vice Provost for the University of South Florida (USF) while I work with the FIO team to find a permanent FIO Director. Along with FIO's staff, crew, and council members, I will work hard to continue the legacy of success established by FIO by building on our relationships with FIO's consortium and partners.

We will concentrate on consistently meeting the ship-time and marine laboratory needs of our members in the Gulf, Caribbean, and Atlantic while enhancing our ongoing programs, projects, asset sharing, and field studies courses. In addition to existing users, FIO needs to:

- Inspire the next generation of Florida oceanographers with world-class oceanographic experiences that will focus their careers on Florida coastal and ocean issues. Future leaders of coastal science.
- Introduce the next generation of Florida oceanographers to FIO vessel and KML services to enhance their research productivity.
- Pre-position vessels for optimal use across the state, reducing transit expenses for researchers. This will provide improved access to FIO vessels for researchers and students across the state by positioning vessels for use on the central Atlantic coast of Florida; along the Florida panhandle; as well as in St. Petersburg. This will expand opportunities for collaborative research and education related to Florida's coastal and ocean environments in different Florida coastal regions.

Re-envisioning FIO will be instrumental in maintaining Florida's coastal economy- the 2nd largest coastal economy in the United States. Coastal/ocean tourism and recreation generate 72% of the state's overall economic activity. FIO is, and for decades has been, well positioned to support efforts that continue Florida's coastal and ocean economic standing and impact

As a marine biologist, the mission of FIO is extremely important to me; I value the state organization's vital efforts and respect its history.

I have already begun to make some improvements to FIO's infrastructure and programs; more on that to come in the near future. Please do not hesitate to call, email, or stop by my office if you are in the St. Pete area to discuss any concerns, goals, or ideas you may have. I welcome your valuable input.

I look forward to working with you in the near future. Together to determine how FIO can be the "wind in your sails" and help you succeed in your research and education goals. Anchors away!

Best Wishes,



James Garey, Ph.D.
Acting Director

Governance of FIO as an AISO

Established by the Board of Governors (BOG) in 2009 and supported by the SUS Council of Academic Vice Presidents (CAVP), FIO serves the State University System (SUS) by Supporting Excellence in Marine Science, Technology and Education through infrastructure, programs, information and people to its member institutions across Florida.

In November 2018, the BOG revised the AISO regulation 10.014 Academic Infrastructure and Support Organizations, to which FIO is mandated to follow. A change in the FIO's By-laws now reflect the following:

*'The FIO Executive Committee will consist of five (5) full Council members including the Council Chair and four elected members. **State University System institutions must comprise at least fifty-one percent (51%) of the executive committee and at least one member of the FIO Executive Committee shall be from the host institution.'***

- Eckerd College
- Florida Atlantic University*
- Florida Department of Environmental Protection
- Florida Agricultural and Mechanical University*
- Florida Fish & Wildlife Conservation Commission, Fish and Wildlife Research Institute
- Florida Gulf Coast University*
- Florida Institute of Technology
- Florida International University*
- Florida Polytechnic University*
- Florida Sea Grant
- Florida State University*
- Mote Marine Laboratory
- New College of Florida*
- Nova Southeastern University
- Smithsonian Marine Station
- University of Central Florida*
- University of Florida*
- University of Miami
- University of North Florida*
- University of South Florida*
- University of West Florida

Since 2010, FIO's membership has grown to include Associate and Affiliate members whose mission aligns with FIO and the BOG.

- Clearwater Marine Aquarium
- Hubbs-Seaworld Research Institute
- Jacksonville University
- Roffer's Ocean Fishing Forecasting Services, Inc.
- Sanibel-Captiva Conservation Foundation
- SRI St. Petersburg
- St. Petersburg College
- The Florida Aquarium
- University of South Florida-St. Petersburg

This year, the annual report is structured to outline what FIO's accomplishments have been as we begin to close in on the 2015-2020 Strategic Plan and focus on the second renewal AISO process and begin the next Strategic Plan to evaluate where FIO needs to go beyond 2020.

Administrative Overview

FIO was able to maintain its level of service, continuing its business to support the benefactors of FIO even with the reduced financial support, but with the large vessel maintenance repairs that took place this past winter placing FIO's fiscal position in a much more vulnerable position. It is critical that FIO continues to sail safely and without the additional future support, it will become more challenging fiscally to support the program's need.

Effective July 2019, FIO has taken steps to reduce its daily costs. It has been over five years since the daily rates were reviewed for the R/V Weatherbird. Because of the R/V Hogarth is relatively new, its rates were also increased to help offset some of the increasing expenditures. At the Keys Marine Lab, the rates are reviewed annually. The increase in rates is to ensure FIO remains competitive in the Gulf. The new rates for the vessels are: R/V Weatherbird- increase from \$10,000 daily to \$11,000 daily; and the R/V Hogarth- from \$5,500 to \$6,700 daily. We recognize that faculty and researchers may have budgeted the old rates into their research proposals, therefore, FIO will honor those proposal requests at the old rate(s). Keys Marine Lab's detailed rate breakdown can be found on the website (keysmarinelab.org).

FIO's operations rely heavily on state funded support; we have been fortunate to maintain reserves for unforeseen expenditures. Due to personnel vacancies, a significant amount of our 2018/19 E&G funding (~\$1.3M) has moved into carry forward in the current fiscal year. We are required to maintain \$400,000 in reserves. We have committed up to \$350,000 to replace building roofs at the Keys Marine Lab and to be in ADA compliance, leaving FIO with a little over \$600,000 to support the vessels' operations, as well as other programs. Overall, operating auxiliaries had a good year but shipyard expenditures and safety repairs/upgrades were heavily supported by the carry forward.

Under the FLRACEP program, FIO has released over \$2 million through its most recent RFP release. There is a push to re-issue an RFP that reimagines the coastal mapping concept, which will provide up to \$500,000 to the successful awardee. Dr. Nancy Thompson from the Keys Marine Lab was awarded a \$600,000 NSF grant to improve the lab's seawater facility. The funds will greatly advance the seawater system, which is being used heavily by the coral restoration group (more on that in this report under Infrastructure section iii).

FIO underwent a safety operations review this year, after a series of safety incidents and injuries the 2017/18 fiscal year. Two injuries resulted in crew members unable to continue their duties, and thus left FIO. The review was conducted by Ocean 360 and identified a series of recommendations, which FIO has taken into account and is being addressed. Areas of concerns include safety of the crew. Having a full dedicated crew is essential to operations, which include increasing support personnel, hiring a Marine Superintendent, providing safety requirements for crew, developing a Safety Management System document for marine operations; and upgrade/improve the ships' systems (fire alarms, radars, etc.). The R/V Hogarth is expected to return to its builder with a long list of items to be addressed. FIO has also contracted JMS Engineering for a post-commission survey of the Hogarth and established a baseline survey for the Weatherbird this past spring. We have addressed approximately 70% of the Oceans 360 recommendations.

FIO

FY 18/19 Operating Actual Expenditures E&G and Carry Forward Summary

Expenditure	E&G			CarryForward			Total Budget	Total Actuals	Total Projected RSA 6/30/19
	Budget	Actuals	Projected RSA 6/30/19	Budget	Actuals	Projected RSA 6/30/19			
Faculty	293,099	293,879	(780)	0	0	0	293,099	293,879	(780)
Non Instructional OPS Other	55,045	100,574	(45,529)	70,000	0	70,000	125,045	100,574	24,471
Staff	1,174,990	971,202	203,788	0	0	0	1,174,990	971,202	203,788
Fringe	550,769	453,643	97,126	0	0	0	550,769	453,643	97,126
Equipment-OCO	10,000	4,798	5,202	100,000	69,689	30,311	110,000	74,487	35,513
Travel	25,000	17,506	7,494	35,000	34,168	832	60,000	51,673	8,327
Other Operating Expense	76,500	130,777	(54,277)	635,109	170,761	464,348	711,609	301,539	410,070
Other*	41,600	56,421	(14,821)	1,403,000	808,470	594,530	1,444,600	864,891	579,709
Grand Total	2,227,003	2,028,800	198,203	2,243,109	1,083,088	1,160,021	4,470,112	3,111,888	1,358,224

* Reserves acct

FY 2018-2019 Auxiliary Operating Summary

Auxiliary Type	Beginning Cash Balance 7/01/2018	Actual Revenues	Actual Expenditures	FYE Balance 6/30/2019
MS Weatherbird II Aux	\$12,215	\$778,498	\$755,858	\$34,855
FL Institute of Oceanography	\$53,383	\$17,915	\$18,778	\$52,520
Keys Marine Lab Aux	-\$10,779	\$211,684	\$166,423	\$34,482
RV Hogarth	-\$8,916	\$460,001	\$297,227	\$153,858
Total	\$45,903	\$1,468,098	\$1,238,286	\$275,714

INFRASTRUCTURE

FIO will provide physical and financial assets and coordinate the efficient use of the members' expertise and resources to facilitate and support the research of scientific investigators and students, engage external contractual opportunities, and provide community outreach.

FIO continues to provide affordable vessel platforms, and laboratory support to FIO member organizations, state government and non-governmental entities. We have been able to accomplish this by successfully operating two major sea-going vessels, the R/V Weatherbird II and the R/V W.T. Hogarth along with the land based laboratory-Keys Marine Laboratory (KML). These assets have provided support for STEM-discipline degrees that produce scientists and educators, building a workforce supporting ocean research, and education which drives economic development while maintaining and improving environmental sustainability of Florida's coastal ocean.

The Florida Institute of Oceanography was instrumental in assisting various universities and institutions with their coastal and deep water research and education needs this year. Some of FIO users include Applied Physics Lab from the University of New Hampshire, Eckerd College, FAU, FGCU, FIU, FSU, Florida Aquarium, Florida Southern, FWC/FWRI, Harris Corp. Robotics, John Hopkins, Mote

Marine, New College of Florida, University of Florida, University of North Florida, University of South Florida, and the US Geological Survey.

FIO's Cruises supported:

- 16 Research Publications (submitted or in progress)
- 24 university courses
- 93 Faculty, 91 research scientists, 290 Undergraduate, 69 Graduate, and 9 Post-Doctoral students

i. R/V W.T.Hogarth

The R/V W.T. Hogarth was scheduled for 118 days at sea in FY 18/19; of which it supported 26 State University Subsidized (SUS) ship days from the ship time program. The Hogarth saw a few enhancements/improvements in the past year, including the installation of a video wall in the dry lab with nine monitors for monitoring nine sets of data concurrently. Additionally, berthing was expanded to 14 berths for scientists/students (from 10) and ship users took advantage of the new accommodations and the bevy of features on-board, including, but not limited to: The wet and dry labs, satellite internet link, fisheries eco-sounders, and dual head swath bathymetry (for bottom-mapping). The R/V Hogarth's dynamic positioning system remains a work in progress.

Fall of 2018 featured the 2nd phase for the R/V Hogarth Ports Tour, which was effective at exposing students, faculty, and alumni/administration from our member institutions to the high-tech features on-board their new "floating lab" at Cedar Key (with University of Florida) and Pensacola (with University of West Florida). Prominent research was conducted on-board including Red Tide impact, Fisheries population studies, water quality assessments, oil spill effects, the Florida Coastal Mapping Program and much more.

The Hogarth's support for statewide research efforts was featured in media on NBC2 Ft. Myers, Spectrum News 9 in Tampa Bay, Tampabay.com and the Passagemaker did a full 2-page spread on the Hogarth's advanced technological features and passenger accommodations.

There was some crew turnover on the Hogarth, David Coy, Captain and Patrick Foster, Cook departed FIO. Ryan Healy was hired as a Mate in September 2018 and Hayden Wiley, Engineer was hired in April 2019.

R/V Hogarth Assists IHMC Combat Erosion

The Institute for Human & Machine Cognition (IHMC) pioneers technologies aimed at leveraging and extending human capabilities. They are involved in a number of cutting-edge efforts from augmented reality and machine learning to 3D printing and robotics.

David Fries, a Research Scientist at IHMC, is focused on the ways advanced technology can be applied to the ocean world. Fries and his team chartered the R/V Hogarth to conduct an inaugural test of their reef opto-system, which is a combination of optical machine vision and ocean optical sensor capability in one system. The technology was tested in the Gulf, about 30 miles offshore of Pensacola, and allowed the IHMC researchers to evaluate the distance of radiation transmission to be compared against related modeling results.

IHMC is also designing structures to mitigate erosion caused by pollution and agricultural run-off. They have started focusing on building modular designs, through advanced 3D printing, that incorporate different mesh densities and enable researchers to deploy artificial reefs with the main goal of attracting a diverse array of species so that the ecosystems are successful and thrive. These nature-inspired reef systems also serve as “reef observatories” where scientists from IHMC can collect real-time ecosystem data using various instruments. The long term goal of IHMC’s field testing on-board the R/V Hogarth was to allow on-the-fly data transfers from underwater sensors to the research vessel at the surface (or AUV or glider). Real time data transfers are a tremendous asset for marine scientists.

ii. R/V Weatherbird II

The R/V Weatherbird II joined FIO’s fleet in 2008 and was utilized on 16 research expeditions for a total of 87 days at sea in the past fiscal year, 25 of which were subsidized by FIO and the State University System (SUS). The Weatherbird was instrumental in several USF/Continental Shelf Characterization, Assessment, and Mapping Project (C-SCAMP) cruises, which add to our state’s body of knowledge regarding reef fish and sea turtle habitats. A two-week fisheries population survey was conducted by the C-SCAMP team in the pipelines off of Mississippi, Alabama, and Louisiana coastlines and the Weatherbird made it as far west as Galveston, Texas during the mission.

Additionally, Eckerd College, John Hopkins, FIU, FSU, Harris Robotics, and the FIO Field Studies Course (multi-institute collaboration between FAU, FGCU, UNF, USF, and UWF) all took advantage of the research vessel’s capabilities in 2018-2019.

There was some crew turnover on-board the R/V Weatherbird- we welcomed a new First Mate, Cody Carnathan, a new Deckhand, Candace Lindstand and said goodbye to Engineer, George Guthro, who was with FIO for 15 years and retired after his last cruise in late June, 2019.

iii. Keys Marine Laboratory (KML)

FIO’s Keys Marine Lab in Layton, FL (on Long Key, mile marker 67) is a fully functional world-class marine laboratory with housing accommodations for 30 people. It is situated on an 8 acre waterfront property with numerous laboratory, dormitory, and administrative buildings. It supports research and teaching activities with key access to coral reef and other tropical marine ecosystems, providing support for research activities involving laboratories, boats, extensive seawater systems and SCUBA diving.

The Florida Aquarium (along with scientists from NOAA, FWC, the Coral Restoration Foundation, and Mote) has been leading a coral restoration project for pillar coral in the Florida Reef Tract off of Looe Key. The project was started in November, 2015, by Dr. Karen Neely (formerly of FWC, now with Nova Southeastern University) and Cindy Lewis, deputy director of FIO’s Keys Marine Lab (KML). Since the inception of the genetic rescue effort, KML’s advanced Well Seawater System, has been instrumental in successfully preserving coral that was collected to be studied and/or treated.

The world-class sea water system allows for manipulations of water quality; simulating the thermal and pH changes that occur in tropical and sub-tropical environments. The system provides a tremendous advantage for researchers who are able to conduct field work and laboratory experiments on-site instead of transporting specimens back to their respective home laboratories. KML features large volume tanks so that ecosystem research can be done simultaneously with mesocosm experiments.

With the ability to maintain water quality for experiments, the well system creates an ideal baseline; filtered through coral rock, water temperature only varies half a degree, year-round, and scientists have the ability to manipulate the temperature for thermal stress testing and other important experiments.

The Bay Seawater System, recently repaired from Hurricane Irma's damaging winds and storm surges, consists of a variety of replicate experimental tanks, large holding tanks, and wet tables. Seawater is pulled from the Florida Bay and aerated in a settlement pond before it is distributed to tanks and tables with various filtration options.



The long list of groups taking advantage of the two seawater systems at KML recently includes teams from the University of North Florida (UNF), Maryland (UMD), Old Dominion (ODU), Florida (UF), Montclair State, and Clemson along with the organizations involved in the years-long coral restoration project. The coral rescue effort was ideal for teaching tools and educational exercises for: UNF graduate students to run thermal heat stress and bleaching tests, Clemson students to study the various species of coral, Montclair students to study diadema coral through spawning, and UMD students to study microbemia.

iv. Technology/Equipment – Remote Operated Vehicles (ROV)

FIO has acquired two new Remotely Operated Vehicles (ROV) perfect for underwater archaeology, reef exploration and deepwater sampling, among many other uses. The VideoRay Mission Specialist DEFENDER ROV features an HD Camera, a diving depth of 400 meters, four horizontal & three vertical thrusters, and will be linked to our vessels' Dynamic Positioning Systems. The vehicle has a customizable platform that can be easily adapted to target specific scientific missions. It will be available on the R/V Hogarth as well as the R/V Weatherbird, and includes a dedicated technician to operate it. The VideoRay Pro 4 is a mini-ROV that will be used primarily for education and demonstration purposes, but is fully capable to assist with various research studies.

PROGRAMS

FIO will seek and provide resources and value-added opportunities for research and educational programs for students at all levels, sustain and build upon the existing programs, and promote new programs and partnerships that expand FIO's role in marine science throughout Florida and the nation.

i. Subsidized Ship-time

Although the dedicated funds to support the well-utilized Subsidized Ship-time program was reduced, FIO was still able to provide the same standard of support to the FIO membership in 2018-19. This program provides a STEM-focused opportunity for students to gain on-hands skills and experience working aboard a research vessel or at our marine laboratory in Layton, Florida to help SUS member institutions attract and retain highly qualified Bachelors, Masters and PhD degree-seeking students. Since 2007, the program has awarded in the upward of 1,000 ship days across all of FIO's marine

facilities, resulting in supporting more degrees awarded in related high demand, highly skilled and high wage targeted areas.

This fiscal year, FIO was pleased to award a total of 85 Subsidized Ship-days amongst the FIO assets. The table below details FIO’s infrastructure support to the successful member institutions:

2018-2019 Awarded Institutions	Number of Days Awarded R/V Hogarth	Number of Days Awarded R/V Weatherbird	Number of Days Awarded Keys Marine Lab
Eckerd College	3	0	0
Florida Atlantic University	8	0	0
Florida Gulf Coast University	5	0	0
Florida Institute of Technology	11	0	2
Florida International University	0	5	0
Florida State University	4	0	0
New College of Florida	5	0	0
Nova Southeastern University	4	0	0
University of Florida	4	0	0
University of North Florida	15	0	0
University of South Florida		11	0
University of West Florida	8	0	0
Total Subsidized Days Awarded:	67	16	2

ii. Multi-Institutional Course: “Field Studies in Marine Biology”

Now in its seventh year, the FIO Field Studies Course, a 5-week field-intensive marine studies summer course, had sixteen (16) undergraduate marine students from the SUS system. The Marine Field Studies Course is a tightly organized joint effort around the state of Florida that is designed to expose students to various iconic marine habitats. In addition to UNF, Florida Atlantic University (FAU) hosts a week at FIO’s Keys Marine Lab, Florida Gulf Coast University (FGCU) at their Vester Field Station, University of South Florida (USF) at their St. Pete Campus, and the University of West Florida (UWF) in Pensacola Bay. The course instructors are experts in various facets of marine science at FIO’s member institutions and they lead the students in independent and cooperative research methods with habitat analysis, species identification, and fishery studies.

For many of the students, it was their first experience with interactive research exercises in the field. The cohort had the opportunity to learn research methods in various coastal environments and the students finished the course with some valuable takeaways.

- *"I found out I might be more interested in studying terrestrial organisms which is a big turning point in my career since I am currently majoring in Marine Science,"* concluded Mike, a FGCU senior.
- *"I have learned more about a career as a marine biologist in these past 5 weeks than in any class I have taken,"* remarked Domonique, a senior at USF.
- *"Thank you Florida Institute of Oceanography for providing the scholarships and housing! You made 16 more lives passionate about ocean science and lit fires beneath all of us,"* exclaimed Brook, a junior from UWF.

The course is intended for sophomore, junior, and senior-level undergraduates from the state of Florida. Each week, or leg of the course, has a different emphasis and the student's blogged about their experiences daily- you can see their entries at <https://marinefieldstudies2019.blogspot.com/>

This Field Studies in Marine Biology course's success paved the way for a 2nd multi-institutional course, which will support graduate students.

iii. Multi-Institutional Course – FIO Graduate Course in Marine Fisheries

This coming fall 2019, FIO, in collaboration with FAU, UF, and USF launch the Graduate Course in Marine Fisheries. Open to graduate studies exclusively, this 3-credit, 3-weekend course is a field-intensive course that will be hosted by FAU's Harbor Branch in Fort Pierce, USF's College of Marine Science in St. Petersburg, and UF's IFAS Nature Coast Biological Station in Cedar Key. The course features team-taught experiences in marine ecology, biodiversity, geo-chemistry, and oceanography. Nine university professors, along with various staff from each institution will be leading the lesson plans, which place emphasis on habitat analysis, species identification, and fishery studies. Students will also learn the best field-based techniques on sampling, tagging, mapping, and much more in three very different marine habitats.

The Graduate Course filled up quickly with 12 students (4 per university) enrolling through the FAU, UF, and USF course catalogs but we may be looking to increase the size next year, depending on post-course survey responses.

iv. RESTORE Act, Florida RESTORE Act Centers of Excellence Program

FIO is the Gulf coast state entity responsible for administering the Florida RESTORE Act Centers of Excellence Program (FLRACEP). This Program was created by the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act), and it is managed by the U.S Department of the Treasury. In total, the Centers of Excellence Research Grants Programs split 2.5 percent of the civil penalties associated with the BP *Deepwater Horizon* oil spill across the five Gulf Coast states, as well as 25 percent of the interest generated by the overall Trust Fund. Over the course of 15-years, these deposits amount to over \$26M for research grants plus and variable amounts of interest deposited annually for the program. To date, FLRACEP has awarded 12 research grants to 8 Florida universities for a total of \$4.4 million. These grants emphasize critical science in support of the eligible RESTORE Act disciplines of coastal fisheries and wildlife research and monitoring, and comprehensive ecosystem monitoring and mapping in the Gulf of Mexico region.

During the 2018-2019 fiscal year, FLRACEP's Program Management Team, after an external science review, awarded an additional \$750,000 over 3 years for the long-term fisheries monitoring project at the USF Center of Excellence. This grant supports continued research on the early life history of important reef fish populations on the West Florida Shelf using larval DNA. In February of 2019, the Department of the Treasury granted FLRACEP the funds necessary to extend this long-term fisheries

monitoring work, and to support the development, release, review, and selection of a third Request for Centers of Excellence Proposals in 2019.

This Request for Proposals (RFP III) included a solicitation for Centers of Excellence for marine wildlife research, habitat mapping coordination, and science support for Northwest Florida Panhandle Estuary Program planning. RFP III was released in January 2019, and six Centers were selected for funding in June 2019. Implementation of these awards- totaling \$2,140,000, is pending receipt of the funds from the Department of Treasury and execution of subagreements with the institutions.

In addition, FLRACEP received the final report from the program's second audit by the Department of Treasury Office of the Inspector General, which reported no major compliance findings.

INFORMATION

FIO will provide a leadership role in communicating scientific information about coastal and marine environments produced by members and member institutions to benefit the citizens of Florida.

FIO staff and its members are actively involved with many agencies throughout the world to better understand marine issues. These partnerships keep FIO abreast of new technologies and issues, while at the same time, allows for our members to be actively involved in research issues and solutions that affect the marine environment and train the next generation of scientists. Throughout the year, FIO and its members are represented on various boards and committees such as:

i. University-National Oceanographic Laboratory System (UNOLS)

University-National Oceanographic Laboratory System (UNOLS) is an organization of 62 academic institutions and National Laboratories involved in oceanographic research and joined for the purpose of coordinating oceanographic ships' schedules and research facilities. While FIO is not a UNOLS designated operator, FIO does actively participate in the Research Vessel Technical Enhancement Committee (RVTEC) and the Research Vessel Operators Committee (ROVC). FIO's participation in these committees promotes the scientific productivity of our member institution's research programs that utilizes the research vessels and marine facilities. The focus of these committees' is to foster activities that enhance technical scientific programs and ensures FIO maintains its fleet standards, provide quality service to our members and promotes marine safety and efficiency.

ii. The St. Petersburg Ocean Team (SPOT)

The Ocean Team is a consortium and industry cluster for marine science, oceanographic and environmental research agencies, institutions and service organizations in the City of St. Petersburg. The Ocean Team and its related cluster agencies and businesses employ over 1,600 people who generate an estimated \$143 million in annual household earnings and contribute \$251 million to Pinellas County's Gross County Product. St. Petersburg's Bayboro Harbor's Scientific Research District is the largest marine research community in the Southeastern United States. The Ocean Team seeks to capitalize on technology development and economic return for the region. Meetings are held quarterly.

iii. Florida Ocean Alliance (FOA)

FOA was founded in 1999 as a nonpartisan organization dedicated to bringing together the private sector, academia, and nonprofit research organizations in Florida to provide “global leadership in responsible and coastal economic development, conservation, scientific research, and technology innovation.” FOA serves as a clearinghouse for information on key ocean and coastal issues facing the state in the public and private sector, monitors and publicizes actions related to the oceans and coasts, organizes conferences and outreach and educational activities for the public and policy makers, prepares economic studies and issues papers on ocean and coastal policies, and provide testimony to national or state agencies and commissions concerned with ocean or coastal policy.

iv. Southeastern Coastal Ocean Observing System Regional Association in Florida (SECOORA)

SECOORA was established through ICOOS (The Integrated Coastal and Ocean Observation System Act) to integrate and augment coastal and ocean observing data and information. It supports a multi-scale, multi-resolution modeling framework that includes shelf and estuarine circulation, estuarine and surge/inundation prediction and uses observing subsystem for verification, assimilation, and operation, provide data management and educational assets (education and outreach) in the Southeast United States. Real-time, or near real-time, marine information on coastal and ocean conditions protects people through health advisories, coastal and marine situational awareness and allows for safer and more efficient marine operations and emergency response, the environment and the economy and supports better-informed decision-making regarding commercial and recreational fisheries, and shoreline and climate change impacts. SECOORA supports conservation and sustainability, Florida’s tourism, emergency preparedness & response, ports and homeland security and alternative energy.

v. National Association of Marine Laboratories (NAML)

NAML encourages the wise use and conservation of marine and coastal resources and provides a forum for the resolution of problems common to non-profit marine laboratories in the United States. The organization lobbies to support activities such as NSF’s budget for the FSML program (Facilities, Communications, and Equipment at Biological Field Stations and Marine Laboratories) and provides outreach to the public through monthly policy meetings.

vi. Southern Association of Marine Laboratories (SAML)

SAML was formed in 1985 to unite marine labs across the southeast, from coastal Maryland through Texas, including Bermuda, to promote cooperation and effectiveness in the work of member institutions on marine and coastal resources. It stimulates cooperative effort among its members, promotes the wise use and conservation of marine and coastal resources. SAML also promotes the importance of marine research and education to the economy and to society and research initiatives related to marine and estuarine resource. It also provides a forum for resolving problems common to marine laboratories in the region.

v. Association of Marine Laboratories of the Caribbean (AMLC)

AMLC is a confederation of 27 marine research, education, and resource management institutions plus 500 individual members. AMLC encourages the production and exchange of research and resource management information in the marine sciences, advances the cause of marine and environmental education in the region, participates in decisions made by national and international organizations concerning the marine environment and facilitates cooperation and mutual assistance among its members. Keys Marine Lab, Mote Marine Lab, the USF Department of Integrative Biology and the Southeast Environmental Research Center, and Department of Marine Sciences at FIU are members.

vi. Gulf of Mexico Alliance (GOMA)

GOMA is a 501c3 non-profit organization founded in 2004 by the five Gulf State Governors in response to the President's Ocean Action Plan. It is one of six Regional Ocean Partnerships (Florida is a member of two), this one working to sustain the resources of the Gulf of Mexico. GOMA's 900 members from State and Federal agencies (13), NGOs, academia and businesses seek to increase regional collaboration to enhance environmental and economic health of the Gulf of Mexico. Six priority areas are long term goals for action: water quality, ecosystem integration and assessment, nutrient priority, coastal resiliency, habitat conservation and restoration, and environmental education.

vii. Outreach Activities

a. Ocean's Day

Florida Oceans Day— *Preventing Coastal Economic Losses: How to Save Florida's Water Resources* took place on April 2nd at the Florida Capitol in Tallahassee. Sixteen of our Member Institutions and partners took part in the annual event which included exhibits set up on the 2nd floor of the Capitol Building.

FIO also hosted the 2nd Annual Oceans Day Economy Forum – *Coastal and Water Resilience: Florida's Extreme Weather and Algal Blooms* with a panel of expert speakers from around the state. Representatives Ben Diamond (68th District) and Holly Raschein (120th District) kicked off the forum which featured John Morales, NBC6 Miami's Chief Meteorologist; Ellen Prager, Author and Marine Scientist; Karl Havens, Director of Florida Sea Grant; and Richard Pierce, Associate VP for Research for Mote Marine Laboratory. The experts gave 10-minute presentations on climate change and Harmful Algal Blooms followed by a panel discussion. The forum addressed both legislative and public concerns over Florida's recent water crises and offered resilience solutions as the state strives to cope with these issues.



b. St. Petersburg Science Festival & Marine Quest

A regional celebration, where over 20,000 families come to explore the wonders of hands-on science, technology, engineering, art, and math (STEAM). FIO over the years have participated in the growing St. Petersburg Science Festival held concurrently with Florida Fish and Wildlife MarineQuest, USFSP, USF CMS, NOAA, and others. At the festival, FIO conducted ROV demonstrations and ship tours every half-hour, on both the R/V Hogarth and the R/V Weatherbird. Nearly 200 festival-goers toured FIO's vessels.

c. KML Winter Science Seminar Series

Monthly lectured series geared toward the non-scientist public to promote science literacy and focusing on ocean issues relevant to South Florida and the Florida Keys. Lecture series run November-April of each year and brings in over 200 local residents to the KML.

d. Best of St. Pete

FIO is featured in The Best of St. Pete book with a 2-page spread this year. The book recognizes FIO as a key member of the St. Pete Innovation District.

e. STEMCONNECT

As virtual classrooms and livestreaming become ever more prevalent, FIO has enrolled as a "course instructor" for STEMConnect Livestream sessions. STEMConnect unites professionals from various STEM fields with STEM students, K-8, in the classroom. Our 30-minute livestream is focused on on-board marine careers and technology. The livestreams have been extremely well-received according to STEMConnect's feedback and FIO has already connected with over 200 K-8 STEM students across the state of Florida.

f. FIO in the Community and Industry

The Florida Institute of Oceanography continues to be an enthusiastic participant in industry-focused, public, grade school, high school, and university-level events, locally, state-wide, nationally, and internationally. FIO staff attended, presented at and/or contributed to a large number of professional meetings, conferences, workshops, plenaries, and events in the oceanographic and marine science industries in FY 18/19.

FIO has been extremely active regarding outreach- attending many conferences, expos, and science festivals for the first time. Examples Oceanology International Americas Diego (where FIO was invited to present STEAMFest, Eckerd Science Festival, and STEM Robotics Camp. The department local school groups and potential USF



include Scripps conference in San and exhibit), St. Pete co-hosting USF's continues to host undergraduate and



graduate students for ship tours and demonstrations.

In total, FIO presented to and toured 400+ K-12 students from Pinellas and Hillsborough Counties, 100+ potential undergraduate and graduate STEM students, and a number of industry professionals, researchers, and even legislators like Rep. Charlie Crist in Fiscal Year 18/19.

g. FIO in the News

- <https://www.baynews9.com/fl/tampa/news/2018/07/23/usf-develops-new-coastal-mapping>
- <http://sanibel-captiva-islander.com/page/content.detail/id/585014/SCCF--Red-tide-continues-to-persist-on-islands--beaches.html?nav=5053>
- <https://www.nbc-2.com/story/40569179/florida-students-learning-about-water-quality-issues-off-southwest-floridas-coastline>
- <https://www.passagemaker.com/trawler-news/inside-look-rv-hogarth>

h. Web & Social Media

FIO focused on providing fresh, targeted and interactive content throughout social media in 2018-2019 in order to engage the public on a variety of mediums. Social media is a prime, no-cost resource to promote FIO's events, programs, collaborations, and member institutions' research with the approximately 2 billion users on Facebook, 1.8 billion users on Youtube and 350 million users on Twitter.

At the end of FY17/18, FIO had 1304 Facebook Likes (followers) with an average of 512 daily engagements (times our followers interacted with our posted content) and a total of 4,806 unique visitors to our Facebook Page; at the end of FY18/19, FIO had 1,577 Likes (an increase of 274 users- an increase of 68 followers gained over the previous FY) and an average of 630 daily engagements with a total of 5,006 unique visitors. FIO's Twitter presence was increased, as well- over the past year, we picked up 109 new followers (an increase of 41 new followers picked up compared to FY 17-18). FIO has placed more emphasis on Facebook posts over the past year due to community and university engagement. More organizations in our consortium are active on Facebook. FIO is also in the process of creating an Instagram page to feature photos at sea and in the laboratory.

i. New Cruise Plan Portal

In collaboration with USF's IT Web Services department, a new Cruise Plan portal has been developed. The system will allow for ship users to fill out their cruise plan request forms online with

responses directed straight to FIO. The new online-based cruise plan forms ease the burden on both the ship-users and FIO by streamlining the process and making data retrieval and recording efficient. The intent is to launch the new Cruise plan portal in this upcoming fiscal year.

PEOPLE

FIO members are leaders in marine science programs, organizations and commercial enterprise. The synergy of members' interests, engagement and expertise will be capitalized upon to support the mission.

i. Member Highlights

FIO members are recognized throughout as being excellent in their fields of expertise. Many have received national recognition for their research. The following are examples of how FIO Members excel and bring recognition to the State of Florida, which translates to attracting the best faculty, students and research funding. FIO is extremely proud of the accomplishments of our members.

Florida Atlantic University:

Dr. Anton Oleinik, Associate Professor of Geology at **Florida Atlantic University (FAU)**, has been leading a research effort examining the community structure and historic coral mortality events of the Andros Barrier Reef system off the central east coast of Andros, the Bahamas. Anton Oleinik's career research interests have been focused on studying the critical intervals in the Cenozoic history. The Cenozoic Era is the current geological era, starting 65 million years ago and is divided into seven epochs: Paleocene, Eocene, Oligocene, Miocene, Pliocene, Pleistocene, and Holocene. The Holocene, the current geological epoch, began after the last glacial period- about 11,700 years ago. The research project in the Bahamas is focused on establishing specific coral mortality events, their exact timing and causes during the Late Holocene's climate change.

Oleinik, and his group of researchers and students from FAU and USGS (St. Pete), utilized FIO's newest research vessel, the R/V Hogarth. Anton (and many other researchers from FAU) have used FIO's recently retired vessel, the R/V Bellows for years in the past, to assist with their Bahamas-area research studies and the group seemed to be pleased with FIO's new upgraded vessel. *"The R/V Hogarth is a definite improvement over the Bellows in many ways and the crew (on-board) is highly professional and very helpful,"* remarked Dr. Oleinik.

Unfortunately, poor weather conditions prevented Anton and his team from working in the Andros area, as planned. As a *plan B*, the group was able to study the reefs located behind Rose Island, where the ship was somewhat protected from wind and waves. Sampling was done by SCUBA divers. Researchers were collecting hand samples of dead coral colonies and utilized an electrically powered underwater drill to take cores of still-standing dead colonies of the coral *Orbicella*, to obtain accurate growth records crucial for the research. To do that, a PI had to obtain a special permit, which was issued to Dr. Oleinik by the Bahamas Department of Fisheries in order to collect required samples. Material from the cruise will be used for two annual FAU courses (GLY4500 and GLY6934). Researchers

often have to adjust their itineraries due to weather conditions, especially around the Atlantic Hurricane Season. The FAU team and R/V Hogarth crew were able to provide effective hands-on training in oceanographic research for the undergraduate and graduate students on-board.

New College of Florida:

Florida has perhaps the greatest variety of shark species in the United States and consistently holds the top spot for the number of shark bites. Increasing our understanding of shark migratory and movement patterns is Dr. **Jayne Gardiner's** focus at **New College of Florida (NCF)**. Professor Gardiner, Director of NCF's Marine Laboratory, is interested in how sensory mechanisms contribute to the ecology of sharks. She is also concerned with human impact on shark movement patterns as part of one her long-term studies. Gardiner accomplishes this type of monitoring through tagging sharks reeled in on-board FIO's research vessels. For the past three years, Jayne has lead shark surveying cruises on FIO vessels in Sarasota Bay and the Gulf of Mexico (offshore the southwest of Florida). In addition to collecting valuable data and tagging sharks, hands-on education and training are provided for students in NCF's Biology of Sharks, Skates, and Rays laboratory course. In Spring 2019, Dr. Laura Habegger and Florida Southern College's Fish Biology course joined Gardiner and NCF on-board the R/V Hogarth for the annual shark survey cruise. 38 undergraduate students in the two courses took advantage of the field-based instruction this Fiscal Year and were taught proper shark tagging techniques.

University of West Florida:

University of West Florida (UWF) professors **Wade Jeffrey and Jane Caffrey**, seized the opportunity to utilize the floating lab to resample sites for the Florida Restore Act Centers of Excellence Program (FLRACEP) grant, *Evaluating Fish Production and Ecosystem Impacts of Artificial Reefs*.

The study is a joint effort between Dr. Caffrey and Will Patterson from the University of Florida (UF). Their ongoing impact study at an area off the Florida Panhandle examines how the deployment of artificial reefs affects the reef fish community and ecosystem productivity. The before and after study started one year prior to the installation of the artificial reefs and it observes how productivity, biogeochemical cycling, and the fish community changed at the artificial reefs and how that compares with control sites without artificial reefs.

"The R/V Hogarth was great for this study because of the vessel's deck space and stability." – Wade Jeffrey, UWF

In addition to the data collection, the daily expeditions provided the first opportunity for many UWF marine science students to get hands-on fieldwork at sea. The R/V Hogarth spent 6 days in Pensacola with UWF; three days were used for tours for the Gulf Coast Science Festival and faculty, staff, and the university community and three days were used as a floating classroom. Construction of the 78-foot research vessel was funded by the Florida state legislature and FIO member institutions, including UWF, which pledged \$520,000.

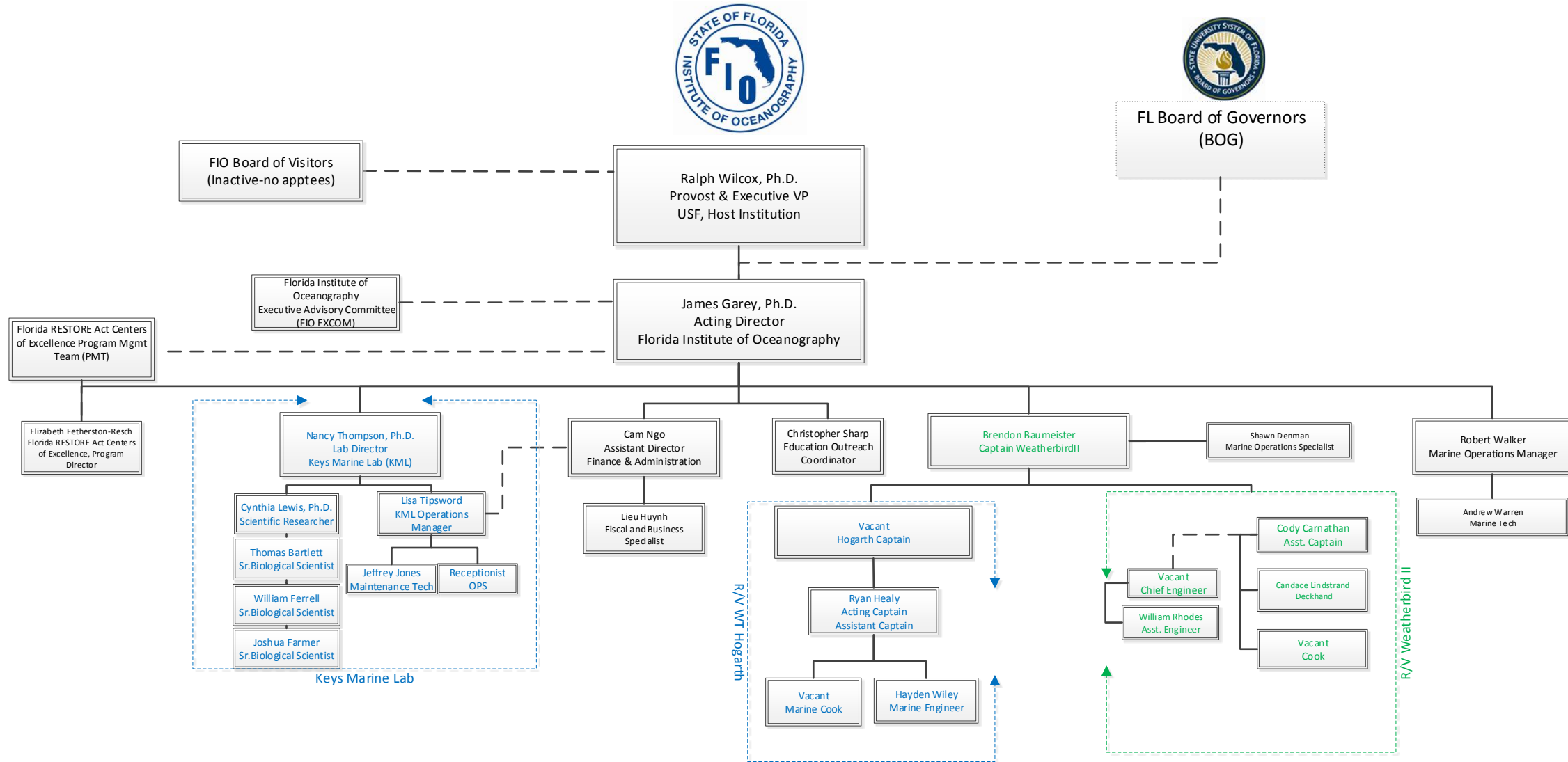
University of South Florida:

Ninety miles west of Tampa Bay, the crew and scientists aboard the R/V Hogarth watched a monitor relaying images of seafloor height captured by the multibeam sonar instrument. **Matt Hommeyer**, a Research Engineer at the **USF College of Marine Science**, and team got support from the

Hogarth crew to located three undocumented wrecks in a 28 square mile patch of seafloor near the Bahamas. The first undocumented wreck that the C-SCAMP team encountered was mapped in July 2017 aboard the R/V Hogarth. While working west of the Florida Middle Grounds, the group came across a structure that appeared to be man-made. This was confirmed in October of 2018 aboard the R/V Weatherbird II after the group was able to “put eyes” on the structure using a towed camera system and FIO’s remotely operated vehicle (ROV). Finding one wreck, let alone three more, provided an exciting finish to the fieldwork for this project, but the primary mission of the cruise actually had nothing to do with shipwrecks at all. The project is supported by penalty funds from the *Deepwater Horizon* accident, administered by the National Fish and Wildlife Foundation (NFWF). Ultimately, the goal is to map all of the West Florida Shelf, an area that is larger than the entire state of Florida. For more information on the project and USF visit: <https://www.marine.usf.edu/news-and-events/defying-odds-seafloor-mapping-team-discovers-3-uncharted-wrecks-in-a-single-day/>

Appendices

Florida Institute of Oceanography





Florida Institute of Oceanography

Council Bylaws

I. Creation and Administrative Assignment of the Florida Institute of Oceanography

The Florida Institute of Oceanography (FIO) is an Academic Infrastructure Support Organization (AISO) of the State of Florida approved by the State University System (SUS¹) Council of Academic Vice Presidents (CAVP), ratified by the Presidents and Chairs of the Boards of Trustees of the member organizations and approved by the Florida Board of Governors (BOG). Under a Memorandum of Understanding (MOU) ratified by the member organizations and approved by the BOG, the University of South Florida (USF) assumes the role of host university, with the support of participating universities, for the operation of FIO. FIO administrative offices are housed on the campus of the College of Marine Science in St Petersburg, Florida and fiscal accounting functions are administered by USF and will be overseen by the USF Board of Trustees (BOT).

II. Purpose and Duties of the FIO

Role of FIO

To facilitate access to major marine research and higher educational capabilities and facilities throughout the state, including:

- The provision and operation of sea-going vessels, marine laboratories and other scientific infrastructure not otherwise available from member institutions.
- Enabling the recognition of the Florida SUS and the private marine research and higher education Member Institutions of FIO as an intellectual and infrastructure resource for marine science and technology.
- Maximizing the efficient use of FIO Member Institutions' diverse marine research infrastructure to produce scientific solutions for the benefit of the citizens of Florida.

¹ The State University System Consists of the following institutions: Florida Agricultural and Mechanical University, Florida Atlantic University, Florida Gulf Coast University, Florida International University, Florida State University, New College of Florida, University of Central Florida, University of Florida, University of North Florida, University of South Florida, and University of West Florida

To facilitate collaboration among FIO Member Institutions, government and the private sector to:

- Promote marine research and education to establish a pool of future leaders and scientists available to academia, government and the private sector.
- Enhance public awareness of ocean sciences and its role in ocean resource management.
- Promote the importance of the coastal ocean to Florida.
- Leverage public and private investments to increase FIO Member Institutions' capabilities.
- Inform public policy development and decision-making.

III. Membership and Governance

The FIO shall consist of the Membership, the FIO Council, the FIO Director and staff, standing and ad hoc committees of the Membership, and a Board of Visitors.

A. Membership. The FIO consists of 30 institutions including the state universities as defined by the Florida Statute Title XLVIII 1000.21 sec (6) and other entities which include faculty, staff, and scientists conducting research and teaching and who may wish to utilize ships, facilities, and other services provided by FIO.

1. Full Members: All SUS members are Full Members of FIO. As an AISO, FIO serves the needs of the SUS. To retain integrity as an AISO, the majority of Full Members needs to be from the SUS, therefore, at least 51% of the Full Membership needs to be SUS institutions. The non-state university full members of FIO are: Eckerd College, Florida Sea Grant College; University of Miami, Rosenstiel School of Marine and Atmospheric Science; Florida Department of Environmental Protection; Florida Fish & Wildlife Conservation Commission, Fish and Wildlife Research Institute; Florida Institute of Technology; Mote Marine Laboratory; Nova Southeastern University; and the Smithsonian Marine Station at Fort Pierce.

If there is a vacancy on the Council for a new non-SUS Full Member, acceptance of the new non-SUS Full Member to the Council will be by a vote of the entire FIO Council at an in-person Council meeting. A 3/4 majority vote is required to accept a non-SUS member as a Full Member.

2. Associate Members: Associate Membership is established for additional non-profit non-SUS organizations with a marine science focus. These include all non-profit entities, such as, but not limited to, colleges, museums, aquariums, and other organizations that fit the Criteria for New Member Applications. Associate Members will promote FIO and provide FIO and its members with access to ships, laboratory facilities, and other ocean and coastal research and education assets (for a fee, if appropriate). Other branch campuses of existing SUS Council Members may become Associate Members, but there can only be one voting (Full) member from any one SUS institution other than the Host University, which has two voting members. All SUS faculty, regardless of whether on a

main campus or on a branch campus, remain eligible to apply for SUS-subsidized ship time.

3. Affiliate Members: Affiliate Membership is established for for-profit non-SUS organizations with a marine science focus. Affiliate Members will provide FIO and its members financial or in-kind support, use or access to ships, laboratory facilities, and other ocean and coastal research and education assets (at a fee, if appropriate).

Election of New Members. The FIO Council may elect to membership other institutions in the Florida ocean science education and research community that meet the criteria for membership approved by the FIO Council (“New Members”). Criteria for membership will address commitment to the support of shared use facilities; agreement to support legislative budget requests of the FIO as required to maintain and operate these facilities in a safe, efficient and cost-effective manner; commitment to attend all scheduled meetings of the FIO Council and FIO Executive Committee, if appropriate; and completion of assignments in a timely manner as agreed to by the FIO Council or FIO Executive Committee. The FIO Council will evaluate each New Member request individually. All SUS (as defined by the membership of the CAVP) New Members are eligible to be Full Members and will automatically be awarded a seat at the FIO Council. A simple majority vote of Full Members will be required to accept any non-SUS Members as a New Associate or Affiliate Member onto the FIO Council.

Criteria for New Member Applications:

1. Significant presence in Florida, such as an operating facility in the State of Florida.
2. Primary focus is marine science technology, education and/or research.
3. Provide a proposal (written), including documentation of the extent of presence in the State of Florida. Orally present to the FIO Council how the institution will support FIO Council activities.
4. Demonstrate ability to bring tangible support to FIO.

Privileges of FIO Membership

	Full Members	Associate Members	Affiliate Members
Attendance and participation at FIO Council Meetings	Yes	Yes	Yes
Voting privileges on the FIO Council	Yes	No	No
Participate in specific FIO project funding opportunities	Yes	Yes	Yes
Access to subsidized ship time on FIO vessels.	Yes	No	No
Access to at-cost ship time on FIO vessels.	Yes	Yes	No
Access to commercial rates of ship time on FIO vessels.	No	No	Yes

B. FIO Council. The primary function of the FIO Council is advisory to the FIO leadership, including the FIO Director and the Provost of the host institution. The FIO Council will consist of one (1) representative from each member organization and two (2) from the host institution who are active members of the Florida coastal ocean research and education community and who are appointed by its President or CEO or his/her designee. The President or CEO (or his/her designee) of each member organization may also appoint one (1) alternate who may serve in the representative's stead at meetings of the Council, but each institutional member may be represented by only one (1) individual in the deliberations of the Council. Member representatives may be reappointed, but shall not serve more than three (3) consecutive terms unless requested in writing by the appointing official. The foregoing notwithstanding, the second member appointed by the host institution may serve unlimited terms. The FIO Council shall elect a Chair biennially from the membership. The FIO Director together with a representative of the BOG will serve as non-voting, *ex-officio* members. Council members shall have the authority to participate in all activities on behalf of the member organization and Full Members of the Council shall also have authority to cast votes as required. Each institutional member can change a delegate at any time by notifying the FIO Director by written communication.

C. FIO Director and staff. The FIO Director shall be appointed by the Provost of the host institution in consultation with the FIO Executive Committee. The FIO Director reports to the Provost of the host institution. The FIO Director or Director designated FIO staff will maintain active contact with FIO member institutions by visiting campuses, scheduling and conducting workshops, conducting needs assessments resulting in priority actions and providing advance knowledge of FIO activities to achieve the goals of the AISO. The FIO Director shall complete an annual report no later than September 1 of each year covering the previous fiscal year (July 1- June 30). The report shall include a summary of activities and accomplishments, provide actual expenditure and position data, and include a work plan for the current fiscal year. Prior to its submission to the Chancellor, no later than October 31 of each year, the report will be distributed to members of the FIO Council for review and comment and will be approved by the Provost of the host institution. Under the FIO Director's guidance, the FIO staff has the primary responsibility for operation and maintenance of the FIO vessels and the Keys Marine Laboratory implementation of the ship schedule, and support for PIs to achieve the research goals; coordination of the education components to achieve the education goals; maintenance of the FIO website; and support for grants and other services provided to member institutions. In the event of a vacancy in the FIO Director position, the FIO Executive Committee shall serve as the search committee, reporting to the Provost and following the customary search process of the host institution.

IV. FIO Council Meetings

The FIO Council will meet at least once in person each year and by telephone conference as needed. Agendas for the meetings will be set by the Chair of the FIO Council in consultation with the FIO Director and approved by the Provost of the host institution. A quorum must be present for the Council to take action. A quorum shall consist of no less than half of the full member institutions plus one. All meetings will be conducted according to Roberts Rules of Order.

Voting. Each Full Member of the FIO Council has one vote. Voting will be decided by a simple majority of Full Member representatives (or designated alternates) present in person, by phone, or by e-mail unless otherwise specified in these by-laws. New Full Member institutions elected to the FIO secure voting privileges upon the appointment of an FIO Council representative as specified in the bylaws, but not before adjournment of the meeting at which they were elected.

Meetings of the FIO Council are open to the public. The President or CEO of each Member of the FIO Council may designate an individual to attend the meetings as an observer and to comment on agenda items but the observer will not have voting privileges.

Minutes of the Meetings. Minutes shall be kept for all regular meetings of the Council and shall be made available by email to the membership within two weeks of each regularly scheduled meeting. Following a period of two weeks for comment and amendment, the minutes shall be approved by email vote of the members and posted on the Council web site.

Staffing of the Council. FIO staff will act as support staff for the Council, organizing meeting logistics, taking minutes and handling communications with the members.

V. Standing Committees and Workgroups

Executive Committee. The FIO Executive Committee will consist of five (5) full Council members including the Council Chair and four elected members. **State University System institutions must comprise at least fifty-one percent (51%) of the executive committee and** at least one member of the FIO Executive Committee shall be from the host institution. The FIO Executive Committee will meet at least three times per year and provide administrative oversight of the FIO in cooperation with the FIO Council and the Provost of the host institution. The FIO Director will serve as a nonvoting, ex officio member. The past Chair will serve as a non-voting, ex officio member for one year following the election of the new Chair of the Council. The Board of Governor's representative on the FIO Advisory Council will serve as a non-voting, ex officio member. Written reports of the items discussed and actions taken at meetings will be sent to the FIO Council via email and posted on the FIO website for the benefit of the FIO Council and interested parties. Membership on the Executive Committee will be evaluated biennially. In the event of a vacancy on the Executive Committee, the FIO Council will elect a member to fill the vacancy.

Ship Advisory Committee. The Ship Advisory Committee (SAC) will be elected by the FIO Council and will consist of at least three (3) Council members (with at least one from the host institution) reflecting the geographical diversity of Florida. The SAC will provide oversight and advice to assure the efficient deployment of FIO research vessels in all of Florida's coastal ocean and adjacent waters, including the Gulf of Mexico, the Straits of Florida, Florida's coastal Atlantic, the Bahamas, and the Caribbean. The SAC will assist the FIO Marine Operations Manager with efficient long-term planning to ensure that FIO members will have equitable access to these vessels from Jacksonville to Pensacola. The SAC will meet at least once annually, in conjunction with the FIO Council meeting.

Nominating Committee. A Nominating Committee will consist of three (3) non-Executive Committee Full Members appointed by the Executive Committee. The Nominating Committee will recommend candidates to the FIO Council to serve on the standing and ad hoc committees. The Nominating Committee will meet on an as-needed basis to fill vacancies on the standing and ad hoc committees.

Board of Visitors. The FIO Board of Visitors will have five (5) to nine (9) members appointed by the host institution President, in consultation with the FIO Council and the Council of Academic Vice Presidents (CAVP), for a three (3) year term, to provide broad oversight to the FIO. Members may be reappointed, but shall serve no more than three (3) consecutive terms. Members will represent the overarching oceanographic research and education interests of global, national and Florida-focused entities. The FIO Board of Visitors shall include representatives from the private sector, higher education, government scientific laboratories and agencies, and others as deemed appropriate by the host institution President. The Board of Visitors will report to the Provost of the host institution and the FIO Executive Committee, and will serve as a valued resource to FIO by providing advice on best practices for optimizing the resources of the FIO and member institutions; identifying strategic directions for potential cooperative programming; interfacing with potential funding sources; and representing FIO and the vital importance of oceanographic research to the broader community.

Additional *ad hoc* or special committees may be formed by the Executive Committee with the cooperation of the Council to address particular issues.

VI. By-Law Revisions

The bylaws and any proposed revisions shall be reviewed yearly. Council members shall submit any proposed revisions to the Chair of the By-Laws Committee at least 30 days in advance of the FIO Council meeting. The Executive Committee and the Provost of the host institution shall review the proposed revisions prior to a full vote of the Council. Amendment of the bylaws requires a two-thirds vote of the Council.

