

**REPORT TO THE
HARBOR BRANCH OCEANOGRAPHIC INSTITUTE FOUNDATION
SUBMITTED BY
MEGAN DAVIS, PH.D., INTERIM EXECUTIVE DIRECTOR, FAU HARBOR BRANCH
AUGUST 24, 2015; REVISED SEPTEMBER 10, 2015**

Grant: Ensuring Faculty Excellence (20% salary support)

Purpose: According to the award letter provided by the HBOI Foundation, the purpose of this grant is to have the most positive impact on ongoing HBOI operations by providing this designated operational support so that HBOI will have greater opportunity to:

- attract and retain faculty of the highest caliber;
- provide faculty a keen edge in the competitive grant area by being able to demonstrate an outside “match” of funding for their salary. This cannot be underestimated in these times of the highly competitive landscape for grant dollars;
- provide a greater sense of security. This would not mean a substitute for tenure or a guarantee of a position. Faculty would still be required to work in collaboration and conjunction with the goals of the HBOI Strategic Plan and their work and performance would be monitored and evaluated according to peer-developed and generally accepted evaluation tools;
- have Faculty spend more of their time on program advancement – doing the work and not the search for funding; and
- be freed up to partner with HBOI external relations in a more meaningful and targeted way such as community outreach and development efforts.

Inception/Term: FY2015/3 years

Available award: \$578,250 annually

Administration: HBOIF intends for the 20% salary provided by this grant, which is to be awarded through the development of specific criteria, to provide an increased reward and incentive to Faculty. HBOIF further makes this grant contingent upon an understanding that any freed-up dollars from the E&G budget be reallocated within the HBOI budget and not reabsorbed by the University for non-HBOI budget use.

Faculty members and Project Managers (i.e., Principal Investigators) meet with the HBOI Interim Executive Director annually to set research, service, and academic goals for the coming year that are aligned with the HBOI Strategic Plan and to evaluate progress toward the previous year’s goals. Activities that are supported by Ensuring Faculty Excellence (EFE) funds include: publication of research results, patent applications, salary match for a grant or collaboration, field and laboratory research, and professional development (e.g., conference participation, industry service, hosting a conference or workshop). Principal Investigators are responsible for ascribing time spent on these activities to their pool of EFE funds, but are not required to use the entire amount. Faculty that were hired as part of the New Faculty Hiring Plan were not eligible for the EFE grant award funding.

FY2015

Total award: \$366,175 (see appendix for detail on the individual awards received by the Principal Investigators and the percentages of time these supported)

ACCOMPLISHMENTS SUMMARY

The numbers below provide a degree of outcome quantification, but there also are impacts that are more difficult to capture. The availability of salary match can enable researchers to contribute to research projects that they couldn't otherwise work on, and it can be a prerequisite for some grant funding opportunities. Field and lab work can yield project groundwork that positions researchers to apply for and receive new sources of funding, as noted by one who attributes nearly \$1 million in grant awards to EFE support and others who similarly plan to seek federal funding. Professional development opportunities provide intellectual stimulation and can raise the profile of our Principal Investigators and institution. All of these categories are catalysts for individual and organizational success.

PUBLICATIONS – 40

- Manuscript drafts, peer-reviewed publications, trade publications, conference papers, poster presentations, technical reports, chapters

PATENTS – 2

SALARY MATCH – 10

FIELD & LAB WORK – 9

PROFESSIONAL DEVELOPMENT – 8 instances

- Industry service positions, continuing education, conference attendance, hosting conferences or workshops

Fraser Dalglish

PUBLICATIONS

- Co-author of journal publication on adaptive path planner for glider operation in Florida Straits (submitted)
- Co-author of conference publication: "Semi-empirical inversion technique for retrieval of quantitative attenuation profiles with underwater scanning LIDAR systems" (published)
- Co-author of conference publication on bistatic LiDAR pulse propagation and imaging radiative transfer model
- Report submitted to NATO-Centre for Maritime Research & Experimentation regarding LiDAR attenuation retrieval

PATENTS

- Co-inventor on disclosure submission and application: “LiDAR System and Inversion Algorithm for Turbid Environments”

PROFESSIONAL DEVELOPMENT

- Served as Underwater Imaging Committee Chair for Marine Technology Society
- Served on the planning committee for the optical communications session at the IEEE UCOMMS in Sestre Levante, Italy

Esther Guzmán

PUBLICATIONS

- Lead author on journal publication: “The marine natural product microsclerodermin A is a novel inhibitor of the nuclear factor kappa B and induces apoptosis in pancreatic cancer cells” (published)
- Completed draft of leiodermatolide biology manuscript
- Developed draft of Interleukin 8 manuscript and encountered potential new findings

FIELD & LAB WORK

- Development of assays to identify inhibitors for macropinocytosis and autophagy, unusual pathways by which pancreatic cancer obtains nutrients to grow, for use with the high-content imager; these assays were presented to the National Institutes of Health by Dr. Guzmán and Dr. Wright as evidence of program productivity in the renewal application for their RO1 grant

Dennis Hanisak

PROFESSIONAL DEVELOPMENT

- Administrative oversight of the emerging Indian River Lagoon Observatory (IRLO) program and the IRLO network of land/ocean biogeochemical observatory (LOBO) units and weather sensors, including installation of three LOBOs funded by HBOIF and planning for installation of five LOBOs funded by the State of Florida
- Organized and hosted the fourth annual Indian River Lagoon Symposium

Brian Lapointe

PUBLICATIONS

- Lead author of journal publications:
 - “Evidence of sewage-driven eutrophication and harmful algal blooms in Florida’s Indian River Lagoon” (published)
 - “Eutrophication and Harmful Macroalgal Blooms in Florida’s Indian River Lagoon” (published; not peer-reviewed)
- Co-author of journal publications:
 - “Winter Nutrient Pulse and Seagrass Epiphyte Bloom: Evidence of Anthropogenic Enrichment or Natural Fluctuations in the Lower Florida Keys?” (published)
 - “Relative effects of physical and small-scale nutrient factors on the distribution of tropical seagrasses in the Great White Heron National Wildlife Refuge, Lower Florida Keys” (published)

- “Comparative ecophysiology of bloom-forming macroalgae in the Indian River Lagoon, Florida: *Ulva lactuca*, *Hypnea musciformis*, and *Gracilaria tikvahiae*” (published)

Susan Laramore

PUBLICATIONS

- Lead author of journal publications:
 - “Survey of Bivalve Molluscs for *Bonamia sp.* and other parasitic pathogens in Florida East Coast Lagoons” (submitted)
 - “Utilization of *Ulva lactuca* Studied in White Shrimp Diets” (published; not peer-reviewed)
- Co-author of journal publication: “Stress-*Vibrio* Dynamics During High-Density, Zero-Exchange Production Of White Shrimp” (published; not peer-reviewed)

PROFESSIONAL DEVELOPMENT

- Coordinated, hosted, and presented at clam workshop sponsored by FAU and University of Florida

Marilyn Mazzoil

PUBLICATIONS

- Assisted collaborator with development of two publications that provide essential data for a co-authored third publication currently in development on a dolphin Unusual Mortality Event in the Jacksonville area

FIELD & LAB WORK

- Re-configured database of northeast Florida dolphins to enable collaborative research project involving University of North Florida, Jacksonville University, Florida Fish & Wildlife Conservation Commission (FFWCC), Georgia Aquarium Conservation Field Station, St. Augustine Ecotours, and Hubbs-SeaWorld Research Institute
- Provided training for the manatee project database and standard operating procedures to FAU Professor Jon Moore’s students in a continued transition of the project to his lead
- Facilitated collaboration between Jacksonville Zoo and FFWCC to secure and transport bones of an adult manatee to HBOI for articulation by volunteers; prepared workspace and provided lab supplies; assisted with the departure of the skeleton for display at the Zoo’s newly established critical-care center

Peter McCarthy

PUBLICATIONS

- Co-author of journal publication: “The first record for the Americas of *Loxodes rex*, a flagship ciliate with an alleged restricted biogeography” (in press)

FIELD & LAB WORK

- Worked with graduate student to aid development of his research plan and to gain expertise in protist microbiology

PROFESSIONAL DEVELOPMENT

- Attended American Society for General Microbiology annual meeting for professional enrichment and networking

Greg O’Corry-Crowe

PUBLICATIONS

- Lead author of journal publications:
 - “Crossing to safety: Dispersal, colonization and mate choice in evolutionary distinct populations of Steller sea lions, *Eumetopias jubatus*” (published)
 - “The genetic ecology and population origins of the beluga whales of Yakutat Bay” (published)
- Lead author of book chapter: “The Beluga Whale” in Whales, Dolphins and Porpoises: a Natural History and Species Guide
- Co-author of journal publications:
 - “Social communities and spatiotemporal dynamics of association patterns in Estuarine Bottlenose Dolphins” (published)
 - “Traditional Knowledge and Historical and Opportunistic Sightings of beluga whales, *Delphinapterus leucas* in Yakutat Bay, Alaska, 1938-2013” (published)
 - “Despite high levels of site fidelity and polygyny, remating is uncommon in Antarctic fur seals” (submitted)
 - “Duplication of a DQA regulatory motif in Delphinidae” (submitted)
 - “Short-term post-branding survival of Steller sea lion (*Eumetopias jubatus*) pups: investigating the effect of health status on survival” (submitted)
 - “Ecological separation of two parapatric sibling species: the spotted seal *Phoca largha* and harbor seal *Phoca vitulina*.” (submitted)

SALARY MATCH

- A multi-investigator, multi-agency genetic study on polar bears in the Arctic
- An ancient DNA (aDNA) pilot study on Pleistocene megafauna in Florida
- An aDNA study of the Old Vero Man site in collaboration with Mercyhurst University and the Old Vero Ice Age Sites Committee
- An aDNA investigation of population structure of beluga whales in the Arctic

FIELD & LAB WORK

- A high-profile study on beluga whales in the Alaskan Arctic conducted in collaboration with Alaska Native communities and several state and local agencies

PROFESSIONAL DEVELOPMENT

- Attended Marine Science Symposium in Anchorage, Alaska, with research team to present data and develop new collaborative research initiatives
- Attended Consortium for Ocean Leadership Public Forum in Washington, D.C., to present research findings on climate change

Bing Ouyang

PUBLICATIONS

- Co-author of journal publication based on the SLP-funded aquaculture project “Cost effective and non-intrusive larval fish enumeration and growth monitoring using light field rendering camera and active learning based classifier” (submitted)

PATENTS

- Submitted provisional patent application based on the SLP-funded light field rendering camera aquaculture project

SALARY MATCH

- Required salary match for the U.S. Department of Energy project “Eye-Safe Underwater LiDAR Imager for Surveillance of Marine Life near Marine Hydrokinetic Installations”
- Salary support for participation in the HBOIF-funded Wave Glider-based fish spawning aggregations monitoring project, including proposal of a Wave Glider motion-based synthetic aperture sonar approach, attending Wave Glider training, and working to improve classifier performance
- Salary support for participation in the SLP-funded light field rendering camera aquaculture project including initial system design, classifier development, and camera calibration

FIELD & LAB WORK

- Partial support for trip to the Naval Research Lab to evaluate the performance of the compressive line sensing imager in the NRL test facility

Shirley Pomponi

FIELD & LAB WORK

- Field and laboratory research on the ecology and physiology of sponges to establish cell culture models and test hypotheses related to sponge-sponge interactions, and to determine if/how anticipated changes in the temperature and pH of coastal ocean environments will affect sponge health, biodiversity, and relative abundance; this is an expansion of my research focus into how and why sponges produce chemicals with pharmaceutical applications, and it is now a thesis research topic for an M.S. student I am supervising

John Reed

PUBLICATIONS

- Co-author of NOAA report: “Characterization of the Mesophotic Benthic Habitat and Fish Assemblages from ROV Dives on Pulley Ridge and Tortugas during 2012 and 2013 R/V *Walton Smith* Cruises”
- Co-author of NOAA report: “South Atlantic MPAs and deepwater coral HAPCs: Characterization of fish communities, benthic habitat, and benthic macrobiota. Final Report for 2012-2014 NOAA Cruises.”
- Lead author of Gulf of Mexico Fishery Management Council webinar: “Proposed HAPCs/MPAs for mesophotic and deepwater coral/sponge habitat and essential fish habitat in the eastern Gulf of Mexico. A proposal to the Gulf of Mexico Fishery Management Council.”

- Submitted chapter for a new publication by the United Nations Environment Programme: “Mesophotic Reefs of the World”

Adam Schaefer

PUBLICATIONS

- Lead author of journal publication describing efforts to cultivate the previously uncultured fungus responsible for Lobomycosis: “Towards the Identification, Characterization and Experimental Culture of *Lacazia loboi* from Atlantic Bottlenose Dolphin (*Tursiops truncatus*)” (under co-author review)

Joshua Voss

PUBLICATIONS

- Co-author of journal publication: “Seasonal stability of coral-Symbiodinium associations in the subtropical coral habitat of St. Lucie Reef, Florida” (published)
- Lead author of journal publication: “Coral health and holobiont physiology at St. Lucie Reef, Florida” (accepted, undergoing revisions)
- Lead author of chapter in published NOAA Technical Memorandum: “Chapter 5: Benthic and fish communities in the middle and lower mesophotic zone of the Flower Garden Banks National Marine Sanctuary” in Fish and benthic communities of the Flower Garden Banks National Marine Sanctuary: science to support sanctuary management (published)

Anni Vuorenkoski Dagleish

PUBLICATIONS

- Lead author of conference publication: “Semi-empirical inversion technique for retrieval of quantitative attenuation profiles with underwater scanning LIDAR systems” (published)

PATENTS

- Lead inventor on disclosure submission and application: “LiDAR System and Inversion Algorithm for Turbid Environments”

Paul Wills

PUBLICATIONS

- Lead author of journal publications:
 - “Application of a fluidized bed reactor charged with aragonite for control of alkalinity, pH and carbon dioxide in marine recirculating aquaculture systems” (submitted, in review)
 - “Pilot-scale Comparison of Three Methods for Controlling Off-Flavor in Recirculating Aquaculture Systems for Food Fish Production” (under co-author review)
- Co-author of journal publications:
 - “Genetic Variability in Meiotic Gynogenetic Muskellunge, *Esox masquinongy* (Mitchell), Estimated from Segregation of Microsatellite Alleles” (published)

- “Trace Analysis of Off-flavor/Odor Compounds in Water Using Liquid-Liquid Microextraction Coupled with Gas Chromatography - Positive Chemical Ionization-Tandem Mass Spectrometry” (accepted, undergoing revisions)

SALARY MATCH

- Assisted with the SLP-funded aquaculture project “Cost effective and non-intrusive larval fish enumeration and growth monitoring using light field rendering camera and active learning based classifier”

Amy Wright

PUBLICATIONS

- Co-author of journal publications:
 - “The marine natural product microsclerodermin A is a novel inhibitor of the nuclear factor kappa B and induces apoptosis in pancreatic cancer cells” (published)
 - “Marine natural products that inhibit Interleukin 8 production in pancreatic cancer cells” (in development)

SALARY MATCH

- Salary cost-share on a grant from University of Florida for the HBOI-UF Neurodegenerative Diseases Project, which is dedicated to discovering new marine natural products that might be useful for treating Alzheimer’s disease; we have found two series of compounds that show promise, and we hope to submit an additional grant proposal for State of Florida funding to continue this research
- Salary cost-share on the HBOIF-funded project “Applying New Technologies to Transform Marine Natural Products Drug Discovery,” for which I am managing the chemistry aspects of increasing the size of the HBOI Peak Library to enhance opportunities for drug discovery; we have added more than 200 enriched fractions to the library and are developing two new collaborations to facilitate testing with researchers at University of Florida and Rutgers University

LAB & FIELD WORK

- Laid foundation for collaboration with the Vaccine & Gene Therapy Institute to develop data related to enhancing cancer immune response before project was put on hold

Appendix

ENSURING FACULTY EXCELLENCE -- FY 2015

PI - NAME	Salary & Benefits Paid by EFE Grant	%
Dalgleish, Fraser R.	\$ 25,737.24	17.78%
Guzmán, Esther A.	\$ 21,702.21	19.63%
Hanisak, M. Dennis	\$ 11,854.48	5.70%
LaPointe, Brian E.	\$ 25,329.48	20.01%
Laramore, Susan E.	\$ 15,255.33	18.79%
Mazzoil, Marilyn S.	\$ 20,093.08	19.70%
McCarthy, Peter J.	\$ 29,510.06	17.92%
O'Corry-Crowe, Gregory M.	\$ 23,052.40	20.00%
Ouyang, Bing	\$ 23,805.77	19.51%
Pomponi, Shirley A.	\$ 37,769.92	14.64%
Reed, John K.	\$ 19,398.81	15.86%
Schaefer, Adam M.	\$ 16,513.37	18.56%
Voss, Joshua D.	\$ 16,509.55	20.01%
Vuorenkoski Dalgelish, Anni K.	\$ 24,064.69	20.00%
Wills, Paul S.	\$ 22,970.25	19.71%
Wright, Amy E.	\$ 29,837.01	15.36%

Total award / Average percentage \$ 36' ,(\$' .*) 17.+\$\$%