

January 23, 2016

**To:** Harbor Branch Oceanographic Institute, Inc. Foundation Board

**From:** Anton Post, Ph.D., FAU HBOI Executive Director

**cc:** Daniel Flynn, Ph.D., FAU Vice President for Research  
Megan Davis, Ph.D., FAU HBOI Associate Executive Director for Academic  
Affairs and Economic Development  
Patrick Boles, FAU HBOI Associate Executive Director for Operations

Anton Post, Ph.D., FAU Harbor Branch Incoming Executive Director

**Re:** FAU Harbor Branch Highlights since November 2016 HBOIF Board Meeting

**1. HBOI Foundation Research and Education Grant Updates – for Active Grants in FY2017**

A. *Applying New Technologies to Transform Marine Natural Products Drug Discovery (PIs: Amy Wright, Esther Guzmán, Peter McCarthy, Shirley Pomponi) Grant Period of Performance 3/22/15-3/21/16; NCE End date: 3/22/17*

The team's discovery of a new antibiotic was published in the Journal *Marine Drugs* in January. The publication describes the isolation, structure elucidation and biological activity of Dragmacidin G a new compound from a deep-water sponge. The antibacterial testing reported in the paper was supported in part by this grant. The paper was published Open Access and can be found at <http://www.mdpi.com/1660-3397/15/1/16>. The College of Science is working on a press release.

Assay development for the tumor immunology project has been completed and screening of the HBOI fraction library is in progress. Active fractions have been identified and are being evaluated for chemical novelty by the chemistry group. Interestingly they have found not only fractions that may reactivate the immune system in patients with cancer, but also fractions that inhibit activation of the immune system, which might be useful in treatment of autoimmune diseases. These results will be incorporated into a grant application to the NIH.

Six hundred fractions have been added to the HBOI Peak library. A subset of these materials has been screened for antibacterial activity and active materials are being sent

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to Rutgers University for additional testing against a panel of human pathogens. All fractions are also being tested in the cancer immunology assays by graduate student Kirstie Tandberg.

PhD student Stephanie Munroe is currently testing the microfluidic chips that were re-designed to produce a more uniformly shaped gel microdroplet for encapsulating sponge cells to be assayed for antimicrobial activity. An alternative method has been developed for antimicrobial assays of sponge cell mixtures. This method will be tested and validated by comparison against antimicrobial disk diffusion assays in February. High content imaging data of sponge cell mixtures have been analyzed; results will be reported as part of the MS thesis of Megan Conkling.

*B. Love Your Lagoon: Seagrass Nursery for Indian River Lagoon Restoration (PI: Dennis Hanisak, Co-PI Paul Wills) Grant Period of Performance 4/20/15-6/30/16; NCE End Date 6/30/17*

In November the team had just completed the planting of their sixth (and last) nursery tank. The seagrass (*Halodule*) has survived and started to expand in all six tanks to date. However, due to cooler winter conditions there has been thinning (reduction) of the biomass in some tanks. The cultures are maintained regularly which includes keeping epiphytes in check and fertilizing with slow-release fertilizer as needed. Based on the team's previous work with seagrass transplants in the IRL there was a rapid increase in growth in late March and April, which is what is anticipated in the HBOI nursery tanks.

*C. Love Your Lagoon: Indian River Lagoon Graduate Research Fellowships (PI: Peter McCarthy) Grant Period of Performance 5/16/16- 5/5/17*

The 2016 Love Your Lagoon Gala Dinner raised \$115,125 in support of the Indian River Lagoon Graduate Research Fellowships. Following a competitive process, these funds were awarded to fourteen FAU graduate students who are performing research closely related to the Indian River Lagoon. Awarded funds have to be used by May 5<sup>th</sup>, 2017 and to date the students are on track to make very good use of their awards (70% of the funds have been expended/encumbered as of January 2017). All of the students will be presenting their research at the 2017 Indian River Lagoon Symposium, and will be participating in the 2017 LYL Gala Dinner on February 3<sup>rd</sup>.

*D. Work visit Dr. Sunshine Menezes 11-13 Jan 2017 (HBOIF discretionary support)*

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Dr. Sunshine Menezes, Executive Director of the Metcalf Institute for Environmental Reporting, visited to explore synergies between her Institute and FAU Harbor Branch. She presented a well-attended seminar for faculty and staff on Metcalf's capabilities and on strategies for effective communication. She is interested in establishing a science journalism workshop at HBOI and in working with faculty to strengthen their message when communicating with diverse audiences.

## E. *FAU Harbor Branch faculty retreat 20 Jan 2017 (HBOIF discretionary support)*

A major first step towards establishing the FAU Harbor Branch Pillar for Ocean Science & Technology and Environmental Sciences was made during this faculty. Some 130 participants representing nearly all FAU Colleges, discussed cross-cutting research themes along with their requirements for core support and facilities. The participants rallied behind the presented vision for Ocean & Environmental Science and there was widespread enthusiasm for HBOI to become the "nerve center" of this new pillar.

## 2. **FAU HBOI Research and Education Selected Highlights**

- a. FAU Academic Leadership Team meeting: January 3
- b. Mission Ocean Discovery update: Successful opening on January 3 with new exhibits (Marine Biomedical and Aquaculture) and a facelift on other exhibits. During the first week there were 111 visitors. The weekly tours started last week and the first Marine Science Friday is January 27. These lunch lectures are given by graduate students and they highlight their research.
- c. Old Vero Ice Age Site update: The site was opened on January 9 and preparations for excavation are underway. The newly discovered bison bone bed at the end of 2016 excavation season will be a major focus for this dig season. Recommend that HBOIF Board members sign up to visit the site between February - April to take a tour.
- d. Meeting with Carolyn Boltin-Kelly January 10 (pillar support and April 1 Gala)
- e. College of Science Semester-by-the-Sea is in its 17<sup>th</sup> year at HBOI. Undergraduate students come from College of Science and Honors College. There are 6 courses taught at HBOI and this year there are around 22 students enrolled.
- f. NASA PACE Workshop: January 17-19
- g. MS Marine Science and Oceanography degree program update: The proposal and budget are being reviewed by the Provost and the College of Science committee. The proposal/budget will move through a series of committees over the next few months with the goal to launch the degree fall 2017. This is a joint degree with College of Science and HBOI.
- h. Indian River Lagoon Symposium *Indian River Lagoon: An Estuary in Peril*: Will be

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held at HBOI on Feb 9-10. The first day are scientific presentations and day two is devoted to citizen science and will focus on the effects of the algal blooms and how citizens can get involved in the IRL activities. Encourage HBOIF to register and come to the symposium

- i. USDA-Aquaculture Research Service (ARS) and FAU are working together to establish a warm-water marine aquaculture center for excellence at Harbor Branch. Megan Davis et al at FAU Harbor Branch is working with USDA ARS administrators, legislators and scientists to build out the concept.
- j. Development – Annual Appeal
- k. Communications – HBOI Annual Report
- l. DoR Owl Research and Innovation magazine