

HARBOR BRANCH

FLORIDA ATLANTIC UNIVERSITY®

Ocean Science for a Better World®

BULLETIN

MARCH 2011

HARBOR BRANCH WELCOMES DR. MARGARET LEINEN



At a time when marine environments are a primary focus of climate change research, and with FAU beginning to play a prominent role in renewable marine energy research, Harbor Branch is pleased to welcome a new executive director with the experience and vision to help the Institute realize its full potential. Dr. Margaret Leinen, who also serves as the FAU associate provost of marine and environmental initiatives, assumed her post on February 21.

Most recently, Dr. Leinen led the Climate Response Fund, a non-profit organization she founded that works to foster discussion of climate engineering research to ensure that its techniques are adequately understood and regulated prior to use. From 2000 through 2007,

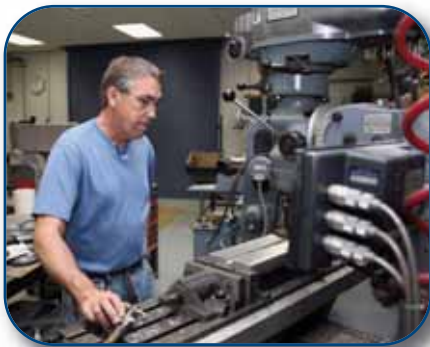
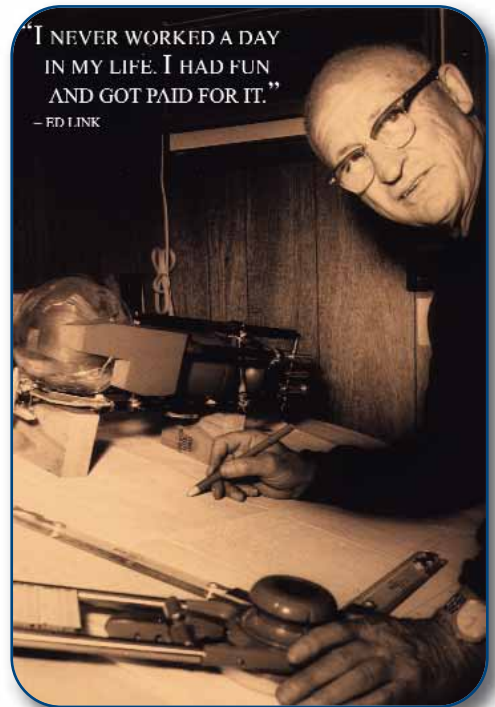
she was the National Science Foundation's assistant director for Geosciences, overseeing a \$700 million budget and helping direct governmental climate and ocean research initiatives. She joined NSF after 25 years at University of Rhode Island, where she earned her doctorate in oceanography and rose to become dean of the Graduate School of Oceanography.

"I am very pleased to have the opportunity to lead Harbor Branch with its distinguished record of marine research, engineering, and education," said Dr. Leinen. "While many fields will contribute to our quality of life over the next century, I believe that our sustainability as a global society will depend first on our ability to understand the ocean, the coasts, and our climate."



EDWIN A. LINK BUILDING RE-OPENED

After serving as a Harbor Branch focal point for more than 34 years, the Link Engineering Laboratory and General Office Building closed in early 2010 for a comprehensive renovation that left few internal walls standing. Some 12 months later, the Edwin A. Link Building re-opened to welcome back the people who help give the place its vibrancy.



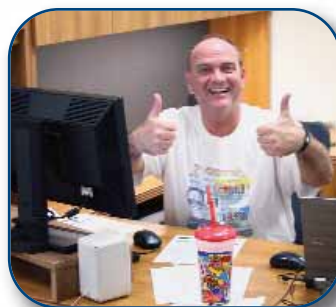
Mechanical engineer Mike Young continued working in the machine shop as the entire building – including the shop – was renovated around him.



After more than a dozen years in another location, the Harbor Branch Library is back in its original building under the direction of librarian Carla Robinson.



Associate Director of Facilities Planning Peter Thomson managed the renovation to a beautiful conclusion, both inside and outside.



HBOI Information Technology Director Nelson Beaman has come full circle with a new office in the same spot as his first Harbor Branch desk in 1991.



The Business Services Department's Bobbie Vann wasted no time making herself at home in her new space.

DOLPHIN RESEARCH

HIGHLIGHTS HUMAN IMPACTS ON INDIAN RIVER LAGOON ENVIRONMENT



Dolphin Rescue / Intervention team members representing six organizations that specialize in marine mammal care, rehabilitation and protection

As long-lived species at the top of the food chain, bottlenose dolphins help us to understand how the environment affects human health and how human activities affect environmental health. Since 1996, the Harbor Branch Marine Mammal Research and Conservation Program (MMRC) has been compiling data on Indian River Lagoon dolphins via population surveys, health and risk assessments, and pathology and life history studies, and by providing care and treatment to sick and injured dolphins; the latter increasingly in the form of 'high-risk' interventions to disentangle wild dolphins.

Last summer saw the return of the collaborative, integrated, multi-disciplinary Health and Environmental Risk Assessment project, which involves dolphin capture, examination, and release to develop indices of dolphin health and assess health threats. More than

165 dolphins have been sampled since 2003, and the research has yielded more than 50 scientific publications.

In January, the National Marine Fisheries Service once again called upon MMRC to lead a high-risk, multi-agency intervention to capture a mother dolphin and her calf, and to disentangle the calf from life-threatening fishing gear. Photographic sighting history data guided the search for the mother/calf pair within their 30-mile home range. Once located, both animals were encircled with 400 yards of net, which enabled the team to secure the calf, medically evaluate her condition, and remove the heavy monofilament and fishing weights. The pair was released, and follow-up sightings confirm the two are together and doing well.

All of these activities are supported by the sale of the Protect Wild Dolphins specialty license plate.

WAVE GLIDERS PROVIDE PERSISTENT GULF PRESENCE



Dr. Fraser Dalgleish



Harbor Branch engineers and scientists led by Assistant Research Professor Fraser Dalgleish, Ph.D., are teaming with California-based Liquid Robotics on behalf of BP to keep an eye trained on the Gulf of Mexico for remnants of the Deepwater Horizon oil spill with the help of a remarkable type of autonomous surface vehicle. The Wave Glider converts wave motion into forward thrust and sunlight into power for its sensors, enabling deployment durations of more than a year with only minor service

intervention. Satellite communications enable supervised autonomy of the units and access to data. Four gliders currently are at work in the Gulf, collecting and sending fluorometric data that can indicate the presence of hydrocarbons via satellite to the Harbor Branch Ocean Visibility and Optics Lab for processing and analysis. Beyond environmental monitoring, the Lab's role is to help demonstrate the viability of the technological approach, enhance detection methods, and augment surface data collection with satellite imagery.

Solar panels and sub-surface, wave-catching wings enable extended field deployments

PUBLICATIONS PROMOTE MARINE PRODUCTS PROGRESS VS. CANCER

The advance of science has always been chronicled in the peer-reviewed literature, and two imminent publications by the Harbor Branch Marine Biomedical and Biotechnology Research Program (MBBR) highlight recent progress in their pursuit of better cancer treatments. Most prominent is a study co-authored by the University of Cambridge's esteemed chemist Dr. Ian Paterson in *Angewandte Chemie International Edition*, one of the world's most influential general chemistry journals (Harbor Branch authors included Research Professor Amy Wright, Ph.D., Research Professor John Reed, and Assistant Research Professor Esther Guzmán, Ph.D.). The paper describes the

structure elucidation, using advanced NMR and computational methods, of leiodermatolide, a new macrolide from a deep-water sponge that potently blocks cancer cell division in a new, yet-to-be understood way. Dr. Guzmán also is the lead author and Dr. Wright a co-author of a publication appearing in the oncology journal *Investigational New Drugs* that describes the formerly unrecognized activity of the sponge-derived compound manzamine A to block cancer cell migration and sensitize pancreatic cancer cells to programmed cell suicide. The publications underscore the talent and dedication of MBBR researchers and staff.



Dr. Amy Wright



Dr. Esther Guzmán



John Reed

FAU POSTDOCTORAL INVESTIGATOR PROGRAM

IN MARINE SCIENCE, ENGINEERING, AND TECHNOLOGY (MARSET) UNDERWAY

The initial cohort of Postdoctoral Investigators with two-year appointments as Research Associates have all arrived and begun their research at Harbor Branch. Each postdoc is being co-mentored by a member of the HBOI research faculty and an FAU faculty member to strengthen collaborations between HBOI and FAU colleges, departments, and centers. The FAU Postdoctoral Program is supported by funds from Save our Seas and Florida Aquaculture specialty license plates. The MarSET Postdoctoral Investigators (2010-2012) are:



Georgios Kallifatidis, Ph.D.,

University of Heidelberg

Project Title: *Identification of Novel Inhibitors of Inflammation to be used as Chemopreventatives of Pancreatic Cancer*

Mentors: Esther Guzmán, Ph.D. (HBOI-FAU),
Vijaya Iragavarapu-Charyulu, Ph.D. (Charles E. Schmidt College of Medicine)



Michelle McComb, Ph.D.,

Florida Atlantic University

Project Title: *Ecological Impacts of Habitat Degradation upon the Visual Performance of Marine Fishes*

Mentors: Tamara Frank, Ph.D. (HBOI-FAU), Stephen Kajjura, Ph.D.
(Charles E. Schmidt College of Science)



Holly Nance, Ph.D.,

Clemson University

Project Title: *Population Genetics Along the Gulf Coast of Florida: Effect of the Deepwater Horizon Oil Spill on Genetic Diversity and Connectivity*

Mentors: John Scarpa, Ph.D. (HBOI-FAU), Susan Laramore, Ph.D. (HBOI-FAU),
Ed Proffitt, Ph.D. (Charles E. Schmidt College of Science)



Gero Nootz, Ph.D.,

University of Central Florida

Project Title: *High-Resolution Imaging Through Turbulent Waters*

Mentors: Fraser Dalgleish, Ph.D. (HBOI-FAU), William Rhodes, Ph.D.
(College of Engineering and Computer Science)

Up to four additional MarSET Postdoctoral Investigators will begin in fall 2011, and the selection process is underway. The 2011-2013 MarSET Postdoctoral Investigators will be announced at the end of April in advance of their October 1 start. **For additional information contact: Dr. Dennis Hanisak, Harbor Branch Oceanographic Institute at Florida Atlantic University, 772-242-2306 or dhanisak@hboi.fau.edu.**

IN SUPPORT OF



Janet Alford Chosen to Lead HBOI Foundation

The Harbor Branch Oceanographic Institute Foundation, Inc., a named direct support organization affiliated with the FAU Foundation, Inc., has selected Janet M. Alford to be its executive director. The HBOI Foundation and its 12-member board of directors are responsible for the specialty license plate program and development operations supporting Harbor Branch research. Before coming to Harbor Branch, Alford led the restoration and rehabilitation of Vero Beach's historic McKee Botanical Garden as its executive director. Previously, she was director of the Harry P. Leu Gardens, development director at the Orlando Science Center, and foundation director at the West Orange Healthcare Foundation. Alford holds a master's degree in management from the Crummer School of Business at Rollins College and a bachelor's degree from Auburn University.



Aquaculture Pavilion Receives \$15,000 Challenge

The Wachovia Wells Fargo Foundation has awarded a \$15,000 challenge grant to create an aquaculture exhibit at the Harbor Branch Ocean Discovery Center. The campaign's initial \$50,000 goal will be used to build a dynamic exhibit with separate systems demonstrating culture of freshwater tilapia, red drum, Florida pompano, and Florida apple snails. The exhibit also will illustrate aquaculture goals including food production and cultivation of marine species for resource conservation and stock enhancement. Sponsorships and naming opportunities are available. For more information, contact the Harbor Branch Development Office at 772-242-2204 or jaylor@fau.edu.

Snowdon Endowment Tops \$1 Million

The Edward W. and Lee Hill Snowdon Harbor Branch Manned Submersible Fund is the first Harbor Branch endowment to cross the \$1 million mark as administered through the FAU Foundation, Inc. The fund began in 2000 with a \$75,000 gift to support ocean exploration, and since has benefited through the generous support of the Edward W. Snowdon Trust, matching funds from the FAU Clearwire Endowment Match, and the promise of a future match via the State of Florida's Matching Gift Program. For more information on matching gift programs, contact the Harbor Branch Development Office at 772-242-2204 or jaylor@fau.edu.

River Branch Foundation Supports Coral Reef Research

Dr. Josh Voss is a second-year recipient of a \$50,000 research grant from the River Branch Foundation of Jacksonville Beach to study the decline in world coral reef communities. Dr. Voss, an assistant research professor in Harbor Branch's Robertson Coral Reef Program, has nine years of experience in coral reef ecology focusing on coral health and the environmental factors that influence coral degradation in the Caribbean. The River Branch Foundation has supported Harbor Branch research programs for more than 15 years.



Antaya Gift Establishes Endowment

Donald Antaya of Stuart, a long-time Harbor Branch supporter and founder of worldwide automotive electronics supplier Antaya Technologies, died in 2009 and, through estate planning, made a \$25,000 bequest to Harbor Branch. The legacy of his and wife Mary's generosity is the Harbor Branch Research Development Fund, an endowment supporting unrestricted research awards, and the annual Donald Antaya Research Award. The Research Development Fund is open to all contributors, and additional named awards will be accepted.

HARBOR BRANCH



Funding Supports Oil Spill Research

In support of various projects related to the Deepwater Horizon tragedy in the Gulf of Mexico, Harbor Branch researchers Dr. Sara Edge, Dr. Susan Laramore, Dr. Peter McCarthy, and Dr. Ed Proffitt received approximately \$400,000 from the Florida Institute of Oceanography Council, which was chosen to administer Florida's initial disbursement of BP funds, and Dr. Brian Lapointe received \$20,000 from the HBOI Foundation. In response to a special fundraising appeal, the Friends of Harbor Branch have supplied an additional \$25,000 from more than 100 contributions to support graduate student assistants for the researchers.

PNC Bank and Friends Sponsor Ocean Science Lecture Series



PNC Bank and the Friends of Harbor Branch have been named Premier Sponsors for the 2011 Ocean Science Lecture Series (OSLS). The OSLS provides a forum for the public to learn about Harbor Branch marine science and technology discoveries directly from the researchers who made them. Lectures in the current series are held at 4 P.M. and 7 P.M. Wednesdays through March 23 at the Johnson Education Center and are followed by a meet-the-speaker reception.

Take a Walk on the Wild Side



The Friends of Harbor Branch "Walk the 'Branch'" program is back in session. Friends are invited to join Harbor Branch researchers and guest naturalists for walking campus tours to study wildlife and botany. The walks, which are held every two weeks during the winter months, provide rare opportunities to experience the marine mammals, fowl, fauna, flora, and historical sites of Harbor Branch. For more information, contact the Friends of Harbor Branch at 772-242-2559.

Richter Grows Right Whale Research

Harry Richter of Sebastian, a Friend of Harbor Branch for more than 15 years, is helping fund expansion of Harbor Branch right whale research. He has traveled the globe to observe whales and has a particular interest in North Atlantic right whales. In 2003, Richter donated a boat to the Marine Mammal Research and Conservation Program (MMRC) for work such as the dolphin Health and Environmental Risk Assessments, and his latest commitment of \$10,000 garnered a corporate match from IBM, his former employer. MMRC project manager Steve McCulloch will coordinate with other groups, leverage existing assets including Protect Florida Whales specialty license plate funds, and obtain the necessary permits and equipment to photograph and monitor whale activity, perform disentanglements, and lead the collaborative research effort.



Art Show Benefits Research

Gallery 14, a premier Vero Beach art gallery located at 1911 14th Avenue, hosted the month-long "Our Beautiful Ocean" exhibition to benefit the Harbor Branch Research Development Fund. With artwork depicting the ocean, wildlife, and beaches of Florida, the show attracted more than 900 visitors for two receptions in December and January, according to gallery partner Lila Blakeslee.



(l to r): Gallery partner Lila Blakeslee, HBOIF Foundation Executive Director Janet Alford, HBOI Associate Executive Director Megan Davis, Ph.D.

HARBOR BRANCH

FLORIDA ATLANTIC UNIVERSITY*

Ocean Science for a Better World®

5600 US1 North
Fort Pierce, FL 34946

Florida Atlantic University, a member of Florida's State University System, was established by legislative act in 1961. In addition to its original 850-acre campus in Boca Raton, FAU has campuses in Fort Lauderdale, Davie, Dania Beach, Jupiter, Port St. Lucie and Fort Pierce. Fully accredited by the Southern Association of Colleges and Schools, FAU is currently serving 28,000 regularly enrolled, degree-seeking students through its 10 colleges.

FAU's Harbor Branch Oceanographic Institute is dedicated to exploring the world's oceans—integrating the science and technology of the sea with the needs of humankind. Harbor Branch is involved in research and education in the marine sciences; biological, chemical, and environmental sciences; marine biomedical sciences; marine mammal conservation; aquaculture; and ocean engineering.



VISIT THE HARBOR BRANCH OCEAN DISCOVERY CENTER!

Gift Shop and Friends of Harbor Branch program office located on site.

Hours: Monday-Friday, 10 a.m. to 5 p.m.; Saturday 10 a.m. to 2 p.m..

Phone: 772-242-2293

For group tours, please call 772-242-2417 for scheduling.



Harbor Branch Florida specialty license plates
support research, conservation, and education.
Visit hboi.fau.edu for details.