

HARBOR BRANCH

FLORIDA ATLANTIC UNIVERSITY

Ocean Science for a Better World™

Bulletin

MARCH 2008

HARBOR BRANCH AND FAU CELEBRATE UNION

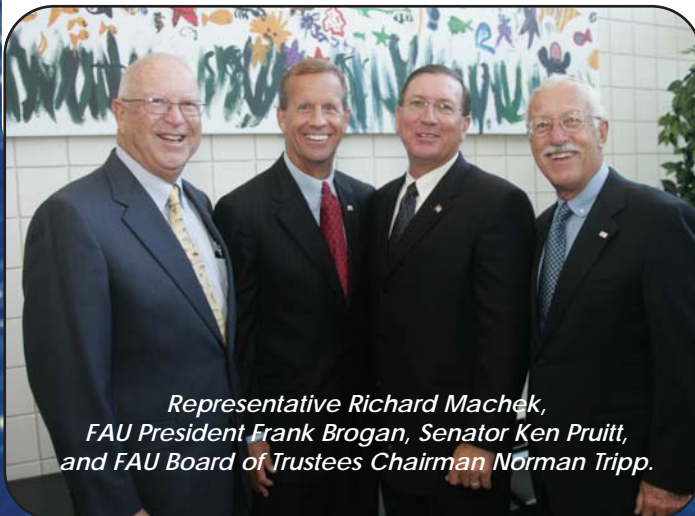
On November 20, officials and employees from FAU and Harbor Branch Oceanographic Institute (HBOI) celebrated the union of the two institutions. The celebration was held at Harbor Branch, in the Johnson Education Center. Harbor Branch President and CEO Dr. Shirley Pomponi thanked Florida Senate President Ken Pruitt for his vision, and FAU President Brogan and Provost Pritchett for their leadership and strong support for the merger.

"Harbor Branch is proud of our heritage and our accomplishments over the past 36 years. We are excited about this new chapter in our history: one that will enable Harbor Branch Oceanographic and Florida Atlantic University to join our talents to train the next generation of scientists and engineers and to tackle some of the most challenging issues facing our planet", said Dr. Pomponi in her introduction. President Brogan welcomed HBOI into the FAU organization and anticipated that merging HBOI with FAU will create additional educational benefits and economic opportunity for the Treasure Coast.



FAU President Frank Brogan and Harbor Branch Chairman of the Board Admiral Paul Yost toast to the new union.

"The state appropriations that FAU received for this expansion of its partnership with HBOI demonstrate Florida's ongoing commitment to the advancement of research and technology," said President Brogan. "Thanks to the tireless support of Senator Ken Pruitt and the Treasure Coast Legislative Delegation, this innovative venture succeeded and will help produce a new generation of marine scientists and leaders in environmental research and management."



Representative Richard Machek, FAU President Frank Brogan, Senator Ken Pruitt, and FAU Board of Trustees Chairman Norman Tripp.



Harbor Branch Executive Director Dr. Shirley A. Pomponi (right) with State Representative Gayle Harrell (left) and Merrill Lynch's Priscilla J. Reilly (center).

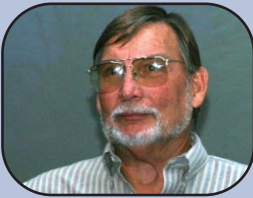
SERVICE AWARD CELEBRATION

HARBOR BRANCH held an annual service award celebration ceremony in December to recognize employees reaching milestone years of service as well as all employees of Harbor Branch and its subsidiaries, the ENVIRONMENTAL LABORATORY AND OCEANS, REEFS AND AQUARIUMS. There was a very special recognition for CHRIS TIETZE, who has been with Harbor Branch since its inception in 1971. To honor Chris' tenure, DR. SHIRLEY POMPONI announced that the Engineering test facility will be officially named the R.C. TIETZE ENGINEERING RESEARCH BUILDING. Congratulations and best wishes Chris! A reception followed the awards. Everyone toasted to Harbor Branch's history, employee accomplishments, and the excitement of a New Year and new beginning as part of FLORIDA ATLANTIC UNIVERSITY.

YEARS OF SERVICE:	# OF EMPLOYEES:
35	1
30 - 26	6
25 - 29	8
20 - 24	10
15 - 19	13
10 - 14	32
5 - 9	29
up to 4	92

Meet our Milestone staff:

35 YEARS OF SERVICE



In 1965, CHRIS TIETZE was part of the crew of Edwin Link's part-research vessel *Sea Diver* when he and his crew first saw the small port that became Harbor Branch. Chris remained an integral part of the Harbor Branch legacy from that day forward. Chris was a key player in the design of the Johnson-Sea-Link submersibles and their scientific tool packages. As a storied diver, he logged many lock-out dives from the submersibles. An extraordinary engineer, his real talent lay in his creative solutions to address scientific needs. Chris retired in December 2007 as the only employee to be at the Harbor Branch from its beginning to the merger with Florida Atlantic University.

30 YEARS OF SERVICE



A scientist, educator, and mentor, DR. DENNIS HANISAK has been instrumental in shaping Harbor Branch's scientific and educational programs. Renowned nationally and internationally for his research on the Indian River Lagoon and marine algae & seagrasses. He is also known throughout the local community for his education and outreach programs. Dennis' efforts have led to the highly successful FAU academic program "Semester by the Sea" and a Fort Pierce / Vero Beach community favorite, the Ocean Science Lecture Series.

30 YEARS OF SERVICE



As the Chief Submersible Pilot and manager of undersea vehicles, DON LIBERATORE oversees one of the longest and most successful submersible programs in the world. With over 1700 dives, Don has led the submersible operations team to locations throughout the world in support of a wide variety of scientific and archeological expeditions, many of which have been well documented by such organizations as the National Geographic and The Discovery Channel. Don's early years at Harbor Branch were spent as dive chamber operator, diver medic, and lock-out diver.

30 YEARS OF SERVICE



LEROY CLEMENZI came from the Air Force to Harbor Branch in 1977 as a courier, quickly rose to shipping and receiving clerk, then buyer, and as purchasing manager. Leroy was the last to leave Harbor Branch after insuring that anyone who needed last minute help getting prepared for the Hurricane got it and he was among the first back after the Hurricane passed to pitch in and get Harbor Branch back up and running. Those characteristics of Leroy have earned him the respect of the Institute - his immense loyalty and a willingness to lend a helping hand no matter what the task.

25 YEARS OF SERVICE



PAM KEEN has proven to be one of Harbor Branch's most versatile employees, growing her skill sets and value along with the institution. While beginning with Human Resources, she spent many years providing administrative and logistic support for Marine Operations with a "can do" attitude that ensured the job could always get done. In recognition of her abilities and value, Pam has been promoted to direct Harbor Branch's Research Administration Office.

25 YEARS OF SERVICE



LARRY TAYLOR brought his Air Force leadership and technical training to Harbor Branch and quickly established himself as a significant asset to the Engineering team. Ultimately, his skills led to his management of the highly successful Manatee Protection Systems Team. Working for the Army Corps of Engineers and the State Water Management Districts, Larry and his teams have installed state of the art systems throughout the state to ensure that manatees are not harmed by manmade lock systems in our waterways.

25 YEARS OF SERVICE



CRAIG CADDIGAN has spent his career at Harbor Branch with the submersible program, with over 1,000 dives and 21 years as a pilot. In the early part of his career, he served as a lock-out diver from the submersibles, participating in the recovery of the civil war era ship, the USS Monitor and participated in the Challenger recovery efforts.

20 YEARS OF SERVICE



Starting as a Secretary in the Marine Science Division, JILL SUNDERLAND has played many roles for Harbor Branch over the years, including several years in the Environmental Lab before moving over to the Education Center. A critical part of the Marine Education Program, Jill has become the face of Harbor Branch for teachers and professors who bring their students, interns and students who spend semesters and summers at Harbor Branch and for many in the community who enjoy the Education Center facilities and outreach programs.

THIRD INTERNATIONAL SUSTAINABLE MARINE FISH CULTURE CONFERENCE

The **THIRD INTERNATIONAL SUSTAINABLE MARINE FISH CULTURE CONFERENCE** took place at **HARBOR BRANCH!**



HELEN LOPEZ, Biological Scientist at HBOI at FAU with a 'seafood extravaganza' dinner served at the Conference. The pompano was farmed raised at Harbor Branch.

The vast untapped potential of marine fish culture – whether for wild stock enhancement, food fish production, or marine ornamental species – and the large and growing movement to position US producers as leaders and key players in marine aquaculture on a global scale, prompted *Fish Farming News* to

devote an entire special issue to coverage of the October 2007 Marine Fish Culture Conference at Harbor Branch.

Nearly 150 U.S. and international attendees converged on the campus of Harbor Branch for an intense two-day program that included more than two dozen presentations covering a broad range of topics related to marine fish aquaculture production.

Attendees were also given an opportunity while at the conference to tour the **HARBOR BRANCH AQUACULTURE DEVELOPMENT PARK**, that featured the **USDA-ARS/HBOI SUSTAINABLE TANK AQUACULTURE RECIRCULATING RESEARCH (STARR)** facility along with the Marine Fish Engineering, Nutrition and Early Development facilities. A dinner, highlighted by the serving of USDA/HBOI grown Florida pompano was a clear crowd pleaser and demonstrated the benefits of creating robust aquaculture programs as global food sources.

The main sponsors of the conference were **HARBOR BRANCH OCEANOGRAPHIC INSTITUTE**, the **UNITED STATES DEPARTMENT OF AGRICULTURE-AGRICULTURAL RESEARCH SERVICE**, **DARDEN ENVIRONMENTAL TRUST**, and several other industry partners.

"We are very excited about the outcome of the conference. It provided an excellent forum for researchers, government agencies, industry members and the public to discuss methods to advance marine fish aquaculture for the production of safe and wholesome seafood products. These important goals are needed to meet the ever increasing global seafood needs as well as reducing the US seafood trade deficit," said **DR. MEGAN DAVIS, Director, CENTER FOR AQUACULTURE AND HABITAT RESTORATION AT HARBOR BRANCH**. Visit www.sustainableaquaculture.org.

The conference was attended by U.S. and international researchers, industry members, government agencies and other stakeholders to identify economically feasible and environmentally sustainable opportunities to farm marine fish.



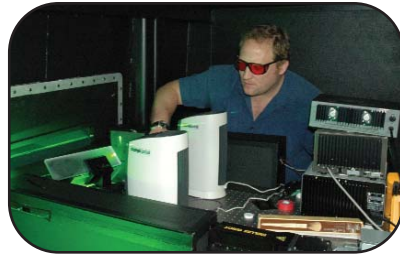
DEEP VISION

In the previous issue, we dangled the promise of this story in front of you: What gadget would Q serve up for **JAMES BOND** if MI-6's finest were to be sent to find a ticking nuclear bomb hidden in the murky waters of **LONDON'S RIVER THAMES**. Well, the truth is Q wouldn't have one and would have to turn to Harbor Branch's Scottish underwater imaging expert to make one.

Who is he? The name is **DALGLEISH**, **DR. FRASER DALGLEISH**. Fraser, a former Scottish rugby player of note, has

assembled a team of engineers that he directs with quiet, methodical, and unstoppable determination, perhaps traits that he learned from the sport of rugby. Hailing from **NORTH BERWICK**, a small fishing town on southern coast of the **FIRTH OF FORTH**, he remembers snorkeling off the beach as a child and being disappointed that rather than the sharks and octopi he had imagined, he could barely see his hands. He obtained a **B. ENG. in ELECTRONICS AND ELECTRICAL ENGINEERING** from **THE UNIVERSITY OF EDINBURGH**, an **M.Sc. in OFFSHORE AND OCEAN ENGINEERING** and **Ph.D. in UNDERWATER OPTICS** from **CRANFIELD UNIVERSITY** in **ENGLAND**, before joining Harbor Branch in 2004 as a **POSTDOCTORAL FELLOW** in Ocean Engineering.

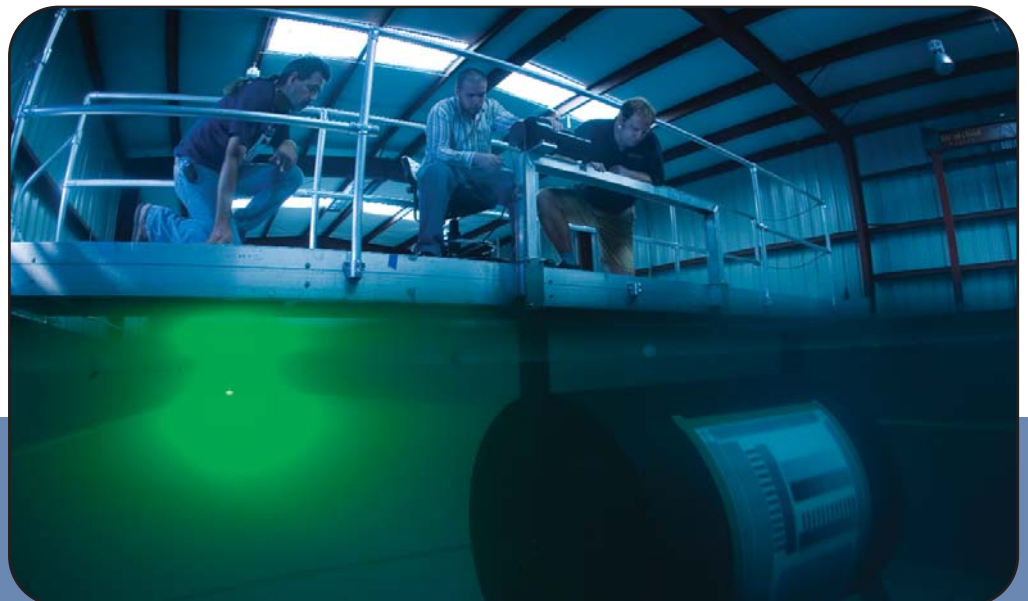
Having had the rugby analogy forced upon him, Fraser graciously elaborated in this way, "...aspects of leading a team of engineers can be compared with a sport like rugby. I think one thing to be said is that we have tackled a challenging problem in undersea imaging, and that in order to carry the ball down the park, a coordinated team approach is required, where each component of the team



Dr. Fraser Dalgleish in action.

depends on the others for component-level and overall success – the components being 1) simulation 2) hardware 3) test facilities. The other thing is to keep people challenged and to occasionally make it fun."

The team consists of **YUETING WAN**, putting his **Ph.D. in OPTICAL PHYSICS** to work to do simulations; hardware specialists **WALTER BRITTON** and **CARL ANDREN**; software engineer **BRIAN RAMOS**; **MARK WHITLOCK**, overseeing the test facility and laser safety, and holding guru status is **DR. FRANK CAIMI** whose expertise is in electromagnetics, and whose advice on hardware, testing and simulation activities is always valued. Over the last two years, they have been busy designing, building, testing and refining what will be a laser-based device that can acquire three-dimensional, high-resolution images of targets located in turbid water at three to four times the distance than is possible by a diver or camera with powerful lights. This device, and the pictures it will yield, will serve many interested sectors. "Whether a patroller, a protector, an explorer or an exploiter of the ocean, you're probably going to need high resolution optical imaging at some point. I believe that together with swarming UUV's, undersea imaging technology such as we have at Harbor Branch will one day be capable of revealing large 3D expanses of ocean and coastal waters to sub-centimeter resolution to be viewed in near-real time by those needing such data." **DR. FRASER DALGLEISH**, Assistant Research Professor, Underwater Optics.



From left to right, Mark Whitlock, Brian Ramos and Fraser Dalgleish make adjustments to an underwater imaging experiment

Currently, Fraser and his team are funded by the **US NAVY** to develop the device. The Navy is interested in the reconnaissance potential of a device that can “see” and “identify” threats, obstacles, and seabed objects in coastal waters and ports that both normal lights with video cameras, and state-of-the-art sonar devices can’t discern. Other likely users are the **COAST GUARD** for their homeland security efforts; the scientific community interested in characterizing and monitoring large segments of ecosystems; and more recently, the oil and gas industry. Representatives of the extraction services industries are in fact calling for a tool that can do exactly what Fraser’s team is working on delivering.

Not only is the team putting together the necessary hardware to pull this off, they are creating models, writing software, and have even built a testing facility. The facility, located at the southwest corner of Harbor Branch, includes a large test tank in which light levels and turbidity can be adjusted and set to the requirements of a particular test.

Most of the features of the testing facility were requirements set by Fraser in order to simulate the conditions with which an underwater imaging system must contend. However, when it came to finding ways to deliver those requirements, Harbor Branch’s chief - and recently retired - tool inventor, **CHRIS TIETZE** was brought in. Chris invented and designed many of the novel features of this facility.

Four years of Navy support will result in a prototype that can be packaged to fit in the payload bay of a 21-inch diameter Navy **UUV**. However, the team wants to see the project through to a completed product. Once the demonstration prototype has been developed for the Navy, there will still be numerous additional challenges to overcome. Nonetheless, the team is confident that the technology is significant enough to attract attention from other probable users, but most likely not James Bond.



This view of the surface of the test facility tank shows plastic balls deployed from a main hopper above the tank to control the amount of ambient light that penetrates into the water below.

OCEAN DISCOVERY CENTER IS OPEN AND READY FOR YOUR VISIT!

Walk into an Ocean Planet experience at the newly completed **OCEAN DISCOVERY CENTER** at **HARBOR BRANCH**. The **HARBOR BRANCH OCEAN DISCOVERY CENTER** is the public gateway to Harbor Branch Oceanographic Institute at **FLORIDA ATLANTIC UNIVERSITY**. It houses a continually evolving array of educational static, interactive, and live animal displays and exhibits depicting the research efforts of the institution. The **HARBOR BRANCH ASSOCIATE PROGRAM** office and the Harbor Branch gift shop are also located at the Ocean Discovery Center. Operating hours are 10am - 5pm Monday through Friday, and 10am - 2pm on Saturday so bring the family for a fun, learning experience. For more information contact The Ocean Discovery Center at 772-465-2400, ext. 293.



MOON PARTY!

Nothing says the Holiday Season like the **HARBOR BRANCH MOON PARTY** – our annual wacky, fun, family event culminating in the not-so-famous 2nd annual golf cart parade. **BMR's (BIOMEDICAL MARINE RESEARCH)** golf cart of sponges and reef life complete with its own bubble maker and signature license plate tied for first place with the Submarine Crew's replica of the **LINK TRAINER**, loved by Board member **MARILYN LINK**, and ready for action with a first aid kit containing "hooch" and cigarettes. The **MARINE MAMMAL** ambulance was decked out in - what else? - dolphin lights, the schooner crew's golf cart was . . . well, a schooner, and Facilities lit up the night in a beautifully decorated pontoon boat with a smoke machine. Highlights of the festivities included a human Velcro wall on which chief submersible pilot **DON LIBERATORE** mastered the most creative ways to get stuck. An indestructible piñata, ring toss and **SANTA's** visit were the kid's favorites. The Bungee Run brought out the competitors in the group, while the bonfire lit up the night and was the perfect place for S'mores. Barbeque and homemade goodies kept everyone's energy up for the festivities. **DR. AMY WRIGHT** and her committee created a great event. The 2nd annual Harbor Branch Moon Party was a huge success and **KIM COCHRAN's** T-shirt for the evening summed it up: "HBOI Native."



WYLAND EVENT TEAMS ARTISTIC AND MARINE MAMMAL RESCUE EFFORTS

What do you get when you mix a world-renowned artist and a critically needed cause of rescuing marine mammals? A great event with incredible art and an altruistic message of helping our Ocean Planet. Over a hundred benefactors joined famed marine artist, **WYLAND** at **HARBOR BRANCH** for **AN EVENING OF OCEAN DISCOVERY** where Wyland previewed his re-edited film narrated by the late actor **LOYD BRIDGES** and created **SUMI-E** (Japanese brush art) paintings at the crowd's request. The evening was a huge success with proceeds going to the **HARBOR BRANCH MARINE MAMMAL RESCUE CENTER** and the **WYLAND CLEAN WATER FOUNDATION**.

Earlier in the day, as a part of Harbor Branch's **EDUCATIONAL OUT-REACH PROGRAM**, 75 Indian River County students had the opportunity to paint with Wyland. The students were from **WESTWOOD HIGH SCHOOL'S MARINE OCEANOGRAPHIC ACADEMY**, **THE LEARNING GARDEN MONTESSORI**, and a group of home-schooled children. Each student painted on two murals alongside Wyland and experienced the **CLEAN WATER** mobile learning unit full of exhibits devoted to the water cycle, all designed to inspire awareness of water quality and conservation through art and science. You can view the murals at the **HARBOR BRANCH OCEAN DISCOVERY CENTER**.



Wyland thanks the crowd for "Making a Difference for our Ocean Planet"



Mike Gelety and Bill Casey of Oculina Bank, Peter Busch, Wyland and David Busch of the Busch Wildlife Foundation.

"What a wonderful opportunity to bring together Wyland, Harbor Branch, and our community to support the Institute and our plans to re-build the marine mammal stranding center at Harbor Branch."

STEVE McCULLOCH,
Program Manager,
Marine Mammal Research and
Conservation Program,
Harbor Branch.



Ryland & Denise LeClair-Robbins and Wyland



Don Liberatore, chief submersible pilot, Dr. Shirley Pomponi, Executive Director of Harbor Branch, and Wyland hold up a Sumi-e painting bought for the fundraiser.

NEXT ISSUE...

Harbor Branch has a long history of building prototype instrumentation and systems in support of marine science. This capability recently proved valuable in developing a fast-track prototype buoy under subcontract to RAYTHEON. HBOI built a totally self-contained, diesel powered buoy system providing electronics and communication support to the NAVY'S ADVANCED DEPLOYABLE SYSTEM. We'll explore this in the next issue.



DON'T MISS OUT!

The 2008 Harbor Branch's Ocean Science Lecture Series provides a forum for Harbor Branch's scientists and engineers to share their most recent discoveries with our neighboring communities. Lectures are held in the auditorium of the JOHNSON EDUCATION CENTER on the Harbor Branch campus, 5600 U.S. 1 North, Fort Pierce. Presentations are at 4:00 p.m. and 7:00 p.m., followed by a meet-the-speaker reception. There is no charge to attend so put these dates on your calendar:

February 6 - PETER MCCARTHY - *The Bacterial Community of Sponges: Microbial Ecology Meets Biotechnology*

February 13 - CLAY COOK - *Symbiosis in the Sea*

February 20 - FRASER DALGLEISH - *The Good, The Bad and The Ugly: Zooming in on Undersea Vision*

February 27 - AMBER SHAWL, MEGAN DAVIS, and PAUL WILLS - *The Ocean Needs More Fish: A Closer Look at Aquaculture and Stock and Enhancement.*

March 5 - JOHN SCARPA - *What's in Your Clam Chowder?*

March 12 - GREG BOSSART - *The Indian River Lagoon Dolphin Health Assessment Program: New Findings on What's Ailing A Flipper®*

March 19 - LEE FREY - *Intelligent Swarms: The Next Evolution in Marine Robotics*

March 26 - GREG O'CORRY-CROWE - *Molecular Genetic Studies of Arctic Marine Mammals: Top Predators in a Changing Environment*

TELL YOUR FRIENDS!

You know a lot of people: help us get the word out about Harbor Branch! Send us your contact names and we'll put them on the e-bulletin list. Send your contact e-mail addresses to: jmcduffie@hboi.edu. Please include their name in your email to Janice.

HAVE STORY IDEAS? NEED EXTRA COPIES?

Please Contact NANCY HATCH at 772-465-2400 x 439, nhatch@hboi.edu

www.hboi.fau.edu