



**HARBOR BRANCH was founded in Ft. Pierce, Florida in 1971 to support the exploration and preservation of the world's oceans. The institution has held to this mission and grown into one of the world's leading oceanographic institutions with a 500-acre campus, over 200 personnel, and a fleet of sophisticated research ships and submersibles.**

**"It's been my total delight to work with HARBOR BRANCH for the past two-and-a-half decades. Its submersible system is as professionally managed as any I've worked with in my career. I know of no other in the world that runs as smoothly."**

*--Al Giddings, Emmy-winning director, producer, and cinematographer, whose credits include Titanic and numerous other ocean-themed films and documentaries*

Discodermolide, a potent anti-tumor agent isolated from a deep-sea sponge discovered by HARBOR BRANCH and licensed to a pharmaceutical partner, is currently on the path to FDA clinical approval for cancer treatment. The institution's Division of Biomedical Marine Research has also discovered and patented numerous other chemicals derived from marine organisms with pharmaceutical value and continues to search for new organisms with drug potential on expeditions. **(a)**

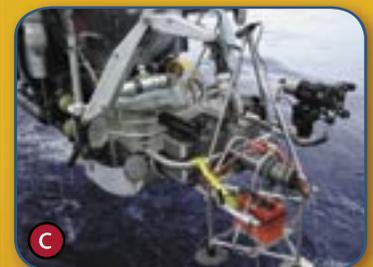
Working in conjunction with the U.S. Department of Agriculture, HARBOR BRANCH's Aquaculture Division is developing new and improved low-cost, energy-efficient, environmentally friendly techniques for raising marine fish and shellfish. The work is aimed at making aquaculture feasible in more regions of the world to help alleviate some of the high pressure currently placed on wild fish stocks, and providing technologies to reduce potential ecological impacts from aquaculture. **(b)**

The HARBOR BRANCH Engineering Division is in the process of producing and installing protection systems of its own design on navigational locks around Florida to prevent them from closing on manatees, a significant cause of death and injury for this endangered species. The system was developed at the request of the U.S. Army Corps of Engineers.

The quest to capture on film never before seen organisms or behaviors in the deep sea continues through deployments of a HARBOR BRANCH-built device known as the "Eye in the Sea." The instrument, designed by Dr. Edith Widder, has a sensor that triggers a camera when it detects even tiny flashes of bioluminescent light, which the vast majority of deep-sea organisms produce, so the creature that created the flash can be captured on film. **(c)**

Based on extensive submersible research in the ocean's midwaters, HARBOR BRANCH zooplankton biologist Dr. Marsh Youngbluth has found that populations of a large jellyfish known as *Nanomia cara*, whose ecological importance has traditionally been overlooked, eat the same food as the larvae of some commercially harvested fish. When plentiful, the jellyfish have the potential to cause precipitous fish catch declines by out-competing fish larvae, and by fouling nets. Research continues toward the goal of better understanding the species' ecological importance and eventually forecasting its impact on commercial catches during a given season. **(d)**

HARBOR BRANCH is now working to construct the world's first marine mammal teaching hospital. This multi-million-dollar facility will offer veterinary education, provide care for injured or diseased dolphins, whales and manatees, and act as an incubator for marine mammal research. **(e)**





**2002** – Relying in part on coral reef and ocean current research by HARBOR BRANCH scientists Dr. Brian Lapointe and Dr. Ned Smith, the National Research Council releases an influential study raising the question of whether plans for Everglades restoration might actually damage coral by increasing the amount of nutrients flowing into Florida Bay and out to reefs. **(a)**

**2002** – HBOI marine biologist Kevin Gaines reseeds a damaged coral reef with sea fans raised in captivity for the first time ever. The ultimate goal of the work is to repopulate Florida reefs where sea fans have become scarce due to disease and reef damage such as ship groundings. Work is also underway to cultivate elkhorn coral in hopes of eventually reseeding reefs throughout the Caribbean where the species has experienced epidemic losses. **(b)**

**2002** – Underwater photographer Wes Skiles and his Karst Productions team travel with HARBOR BRANCH to the Bahamas to capture the institution's submersibles and ships from the air and underwater on High Definition (HD) video and with still shots for use by the institution and media outlets. **(c)**

**2001** – Video footage of HARBOR BRANCH research and submersibles appears in the BBC-produced documentary series "The Blue Planet: Seas of Life," which was also seen on the Discovery Channel.

**2001** – After years of studying the spread of harmful native seaweed species on Florida reefs, HARBOR BRANCH researchers led by marine ecologist Dr. Brian Lapointe discovered that acres of Florida reef have been overgrown by *Caulerpa brachypus*, an invasive algal species from the Pacific closely related to an alga that has caused billions in damage to Mediterranean reefs and economies. The group is currently studying the factors controlling the spread of *C. brachypus* and other species, which appears to be fueled by nutrients from pollution.

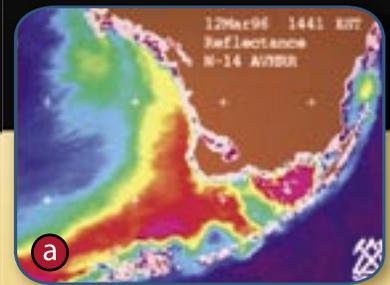
**2000** – HARBOR BRANCH's Aquaculture Division is the first to successfully raise queen conch that lay egg masses in captivity. This work, along with efforts to educate the public regarding the importance of conch conservation efforts, is aimed at the goal of helping to restore queen conch populations in the Caribbean and the Florida Keys, many of which have been decimated by commercial harvest. **(d)**

**1999** – The Smithsonian-produced IMAX® film "Galapagos 3-D" about a HARBOR BRANCH expedition to explore deep waters around the islands is released. An earlier HARBOR BRANCH voyage to the region was the subject of the Discovery Channel documentary "Galapagos: Beyond Darwin," which was produced and directed by Al Giddings and Dave Clark and was the channel's third-highest rated program.

**1999** – Discovery Channel releases "Cuba: Forbidden Depths," produced by Al Giddings and Jim Lipscomb and narrated by Martin Sheen, which chronicles a month-long expedition to explore waters around Cuba by scuba and submersible from HARBOR BRANCH's R/V *Seward Johnson*. Research during the cruise was conducted in collaboration with Cuban scientists and President Fidel Castro toured the ship and a submersible.

**1998** – Dr. Gregory Bossart, director of HARBOR BRANCH's Division of Marine Mammal Research and Conservation, and colleagues document the first virus ever in manatees. Because the pathogen, called Papillomavirus, is similar to a virus that causes cervical cancer in humans, ongoing research aimed at curing the condition in endangered manatees is proceeding in collaboration with medical doctors and could eventually contribute to development of a treatment for cervical cancer. **(e)**

**1997** – HARBOR BRANCH researchers discover a bizarre deep-sea octopus with bioluminescent light organs instead of suckers, which it uses to lure prey into a net of sorts created by webbed arms. **(f)**



**1997** – Veteran HARBOR BRANCH submersible pilot Phil Santos and Penn State researcher Dr. Chuck Fisher discover the first animals ever living on and in mounds of methane ice called hydrates. The one to two-inch “ice worms” were found in the Gulf of Mexico at about 1,800 feet deep. While their ecological roles are not yet clear, these ice worms could have an important influence on the formation or stability of hydrates, which are being considered as energy sources and may have even played a role in controlling ice age shifts. **g**



**1995** – HARBOR BRANCH begins a new training program for fishermen displaced by a Florida net ban to jump start a new clam farming industry. Hundreds of fishermen have now successfully made the transition into what has become an approximately \$20 million per year clam harvest.



**1994** – HARBOR BRANCH, in collaboration with the University of California, Santa Barbara, patents the first of several powerful anti-inflammatory compounds called topsentins from deep-sea marine sponges found in the central Atlantic Ocean. Dr. Amy Wright, director of HBOI's Division of Biomedical Marine Research, and colleagues, have since developed and patented a synthetic version of one of these compounds, called Soritin. Soritin is under investigation by several pharmaceutical companies for use as a prescription or over-the-counter drug to treat allergic reactions, burns and arthritis. **h**

**1994** – HARBOR BRANCH submersible *Clelia* is used to explore and document the wreck of the Edmund Fitzgerald, gathering information about why and how the famous vessel sunk.



**1993** – National Geographic documentary “Ocean Drifters” filmed using sound stage setup at HARBOR BRANCH. The film prominently features the research of HBOI bioluminescence specialist Dr. Edith Widder and director Rodger Jackman was awarded an Emmy for the project. **i**

**1986** – NASA requests help from HARBOR BRANCH in searching for wreckage of the space shuttle *Challenger*. The critical booster rocket O-ring joint that confirmed engineers' suspicions about the cause of the disaster was recovered using a *Johnson-Sea-Link* submersible. **j**



**1998** – HARBOR BRANCH's Division of Marine Mammal Research and Conservation begins the development of an innovative digital photo-identification system that uses computer assisted hardware and software to identify individual dolphins by their unique dorsal fin markings. Over 400 dolphins in Florida's Indian River Lagoon have now been logged into the system allowing their health and activity to be tracked, aiding efforts to develop better methods for protecting them and the ecosystems on which they rely.

**1984** – After discovering and then studying them for years, HARBOR BRANCH scientist John Reed and others convince the federal government to designate the deep coral reefs of the Oculina Banks off Florida's coast as a research reserve closed to trawling. These reefs of Ivory Tree Coral in pinnacles up to 100 feet tall are found nowhere else on Earth. In the early '80s, using HBOI submersibles, scientists discovered that the fragile reefs had to a large extent been decimated, most likely by fishing trawlers. Work to study and protect the reefs continues. **k**



**1977-2003** – HARBOR BRANCH submersible pilot and current director of Marine Operations Division Tim Askew and an East Carolina University archaeologist become the first humans to see the wreck of the Civil War ironclad *USS Monitor* since it sank in 1862. On later expeditions between then and the mid '80s, HARBOR BRANCH lockout divers operating out of the *Johnson-Sea-Link* submersibles recovered numerous artifacts from the wreck including its distress lantern, numerous items from the captain's cabin area, the anchor, and pieces of deck plate, paving the way for such recent projects as raising the ship's gun turret, in which HARBOR BRANCH was also involved. **l**





## JOURNALISTS:

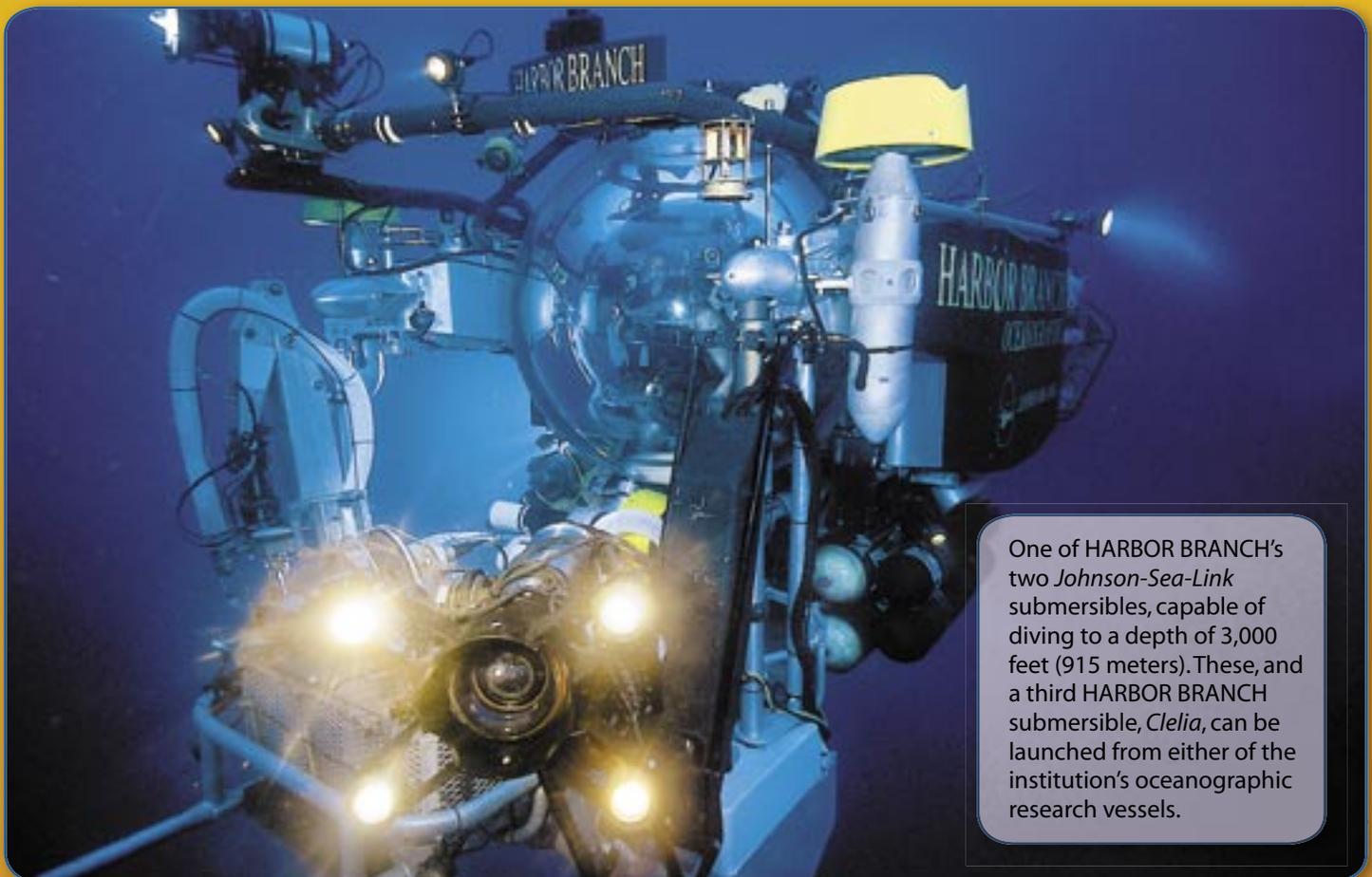
For more information about HARBOR BRANCH, to sign up for our press release mailing list, or to download our quarterly newsletter, go to <http://www.hboi.edu/media> or contact Mark Schrope, (772) 465-2400 ext. 433 • [schrope@hboi.edu](mailto:schrope@hboi.edu)

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HARBOR BRANCH has an extensive video and photo library that includes professional images and broadcast-quality footage in various formats of ships and submersibles, countless marine animals and plants, and a wide variety of ocean habitats, as well as material specifically related to all HARBOR BRANCH research programs.

To see some of the material available or for licensing information regarding these libraries, go to: <http://www.hboi.edu/gallery.html> or contact Jan Petri, (772) 465-2400 ext. 241 • [petri@hboi.edu](mailto:petri@hboi.edu)

Materials used to illustrate stories about HARBOR BRANCH are available at no charge.



One of HARBOR BRANCH's two *Johnson-Sea-Link* submersibles, capable of diving to a depth of 3,000 feet (915 meters). These, and a third HARBOR BRANCH submersible, *Clelia*, can be launched from either of the institution's oceanographic research vessels.