

## Newly dedicated facility to house NIEHS-funded labs

By Eddy Ball

Officials at the University of North Carolina Wilmington (UNCW) cut the ribbon Nov. 18 for a new facility that will serve NIEHS-funded labs on the N.C. coast participating in an innovative public-private partnership initiative to advance health research and translation.

The ceremony at the new 69,000 square-foot Marine Biotechnology in North Carolina (MARBIONC) building featured comments by UNCW Chancellor Gary Miller, Ph.D., the UNCW Board of Trustees, and Congressman Mike McIntyre, D-N.C. In attendance were NIEHS Program Director [Frederick Tyson, Ph.D.](#), grantee [Daniel Baden, Ph.D.](#),

([http://uncw.edu/bio/faculty\\_baden.html](http://uncw.edu/bio/faculty_baden.html))

representatives from the National Institute of Standards and Technology (NIST), National Oceanographic and Atmospheric Administration, and MARBIONC, as well as public-private partners and the general public.

### Linked Video

[Watch a UNC-TV story about marine biology research at UNCW \(06:24\)](#)

UNCW used 30-year bonds to pay for half of the \$30 million building. The other half came from federal stimulus money provided by NIST. The green building is LEED (Leadership in Energy and Environmental Design) silver certified and offers flexible modular lab space for lease.

Scientists in the university-related MARBIONC program have been working toward the goal of turning materials in the marine environment into new products, drugs, and technologies, as well as creating potential spin-off companies and jobs. As its UNCW website proclaims, "MARBIONC is in the business of transforming the mysteries of the deep into the miracles of the marketplace."

### The NIEHS connection

At the hub of the NIEHS connection with the [MARBIONC](#)

(<http://uncw.edu/cms/ResearchMARBIONC.htm>)

facility is Baden, an expert in the field of marine biology and an NIEHS grantee since 1991, when he was on the faculty at Miami University. Currently, Baden is director of the Center for Marine Science (CMS), which is the UNCW partner in MARBIONC, and administers the non-profit MARBIONC Development Group.

Research underway at CMS is emblematic of the way MARBIONC plans to translate basic research. Baden's work with extremely toxic microorganism blooms that flourish in warm Atlantic waters led to the surprise discovery of a natural antitoxin, brevenal, which is also produced by the organism. It turns out that brevenal has potential for treating patients with cystic fibrosis, chronic obstructive pulmonary disease, and other related lung diseases (see [story](#)).

"The antitoxin itself, known as brevenal, promotes a series of physiologic effects known as mucociliary clearance," Baden explained in an [interview](#)

(<http://www.loe.org/shows/segments.html?programID=11-P13-00013&segmentID=5>)

with Steve Curwood of the radio program Living on Earth. "And the easy way of saying that is it makes your mucus thinner and it makes it capable of being expelled from the lung much more readily."

"Put the two together, and it should be a therapy for anything that has thick, ropery mucus that can't be cleared from the lung."

According to Tyson, the opening of the MARBIONC marks a major success coming from the harmful algal bloom research that



Baden stands beside samples in the red tide study culture room. (Photo courtesy of UNCW and Jamie Moncrief)



Crest Research Park at UNCW is a place for university researchers, private firms, and government agencies to work together to create biotechnology products and solutions. (Photo courtesy of UNCW)



The MARBIONC building's labs are well-lit, spacious, easily adaptable for tenants, and filled with state-of-the-art equipment. (Photo courtesy of Dan Baden)

NIEHS has supported for several decades. "Characterization of the mechanisms of toxicity associated with brevetoxins, and the ultimate identification of brevenal and its therapeutic potential, was the key research driver that led to the establishment of MARBIONC Development Group and the state-of-the-art marine research facility," he said.



*Among the dignitaries speaking at the dedication of the new building was McIntyre, who represents the state's seventh congressional district, which includes Wilmington and much of southeastern N.C. (Photo courtesy of Dan Baden)*



*Tyson, right with orange tie, joined in the ribbon cutting that officially opened the new building. (Photo courtesy of Dan Baden)*