

At a university research facility, scientists and students find that the ocean and the creatures in it hold the potential for changing what we know and how we live.



PHOTOGRAPHS: J. SAVAGE GIBSON

Sea of Knowledge

above: The three-year-old Center for Marine Science facility at Myrtle Grove backs up to the Intracoastal Waterway. Inside, the 75,000-square-foot building contains classrooms and marine science labs, plus a teaching auditorium that seats 150. **above, right:** Graduate student Chris Woolridge (right), with Dr. Wade Watanabe looking on, studies flounder egg fertilization rates.

When you're a kid curious about sea life, the idea of becoming a marine scientist sounds extremely cool. Of course, the same goes for a lot of other ambitions that lose their luster when you learn the ugly truths. But, good news for those nurturing the singular passion for studying the sea: At the University of North Carolina at Wilmington's Center for Marine Science, work retains its sense of fun and adventure. Consider, for instance, the work of Dr. Laela Sayigh, who regularly leads expeditions to study dolphins and listen to their communications. Laela and her students identify individual dolphins by their dorsal fins as easily as old mends. And their findings suggest that dolphins, like human beings and unlike most animals, *learn* the distinctive noises that they use to talk to one another.

Or ponder the possibility of finding solutions to large problems. Dr. Wade Watanabe directs a project to determine if flounder and sea bass can be raised commercially. If his experiments prove what he believes, diminishing wild fish populations might be protected while North Carolina develops a whole new industry. This work "can potentially help the world's food supply," he says. "To have that overall goal is very worthwhile."

Or think about Dr. Martin Posey, who studies the interrelationships of life in tidal marshes and estuaries. His research may find ways to restore coastal creeks and oyster beds.

Watching these scientists and their students work, you get the idea that nothing could be more fun-or potentially more useful-than spending your time with saltwater plants and animals. ▶

"You know we're here because we like the work."

Dr. Martin Posey

But the work is not always a delight. There's drudgery in the preparation and cleanup, and there's more than a little discomfort when the weather turns nasty. "For every four volunteers I get for my research," says Laela, "three drop out within six months. It's definitely not for everybody. But the ones who do stick it out are really into it."

The marine sciences share that kind of attraction with other professions that involve field research, says Martin, "where you get to be out there in the environment, to have the critters right there in front of you in their natural habitat. Because the marine world is so different than the day-to-day world, it adds an element of excitement and discovery."

A Facility for Learning

The Center for Marine Science's lineage dates back some 30 years to the formation of the UNCW Institute for Marine Biomedical Research at Wrightsville Beach. It got its new name in the early 1990s, and in

2000, it moved into a \$17.5 million, 75,000-square-foot facility in Myrtle Grove, 7 miles southeast of UNCW's main campus.

The new facility's location on the Intracoastal Waterway provides perfect access to the marine environments the scientists study. The facility boasts a 900-foot pier and docking facilities, and fresh seawater can be piped directly into the building for its labs and aquariums.

The center uses private industry grants and federal and state funding to buy specialty equipment the scientists use, everything from the steel research vessel *Cape Fear* to sophisticated analytical gear. By seeding its own pilot studies that can be used for much larger federal grants and by developing relationships with other agencies and industries, UNCW Marine Sciences has grown its total research budget from \$2.8 million in 1999 to \$12.8 million in 2001. "We've doubled our funding each of the last three years," says center director Dr. Daniel Baden.

Competitive Teams

The center's success at attracting government and industry attention, says the director, comes from its determination to pool expertise from a variety of scientific disciplines, such as geology, physics, chemistry, and biomedical studies, as well as from obvious fields such as oceanography and marine biology. "We seek to put interdisciplinary teams together to make them more competitive at the federal level," Dan says. "I am convinced the pilot projects make a big difference in getting federal funding later."

Seeing the connections between the biology of marine life, the chemical composition of the water, the physics of ocean currents, and the geological structure of a coast requires no big leap for individual research scientists. They're trained to see interrelationships. But universities separate the sciences into departments, and institutions tend to cluster specialists, so these groups haven't always operated that way.

Some of the world's largest ma-



With her students on the research vessel *Cape Fear*, Dr. Laela Sayigh (center) monitors the movements and sounds of dolphins in the Intracoastal Waterway.

rine science institutes have evolved in that direction, Dan says. "But the difference at UNCW is that we were developed specifically to do that, to carry out interdisciplinary science."

Good Potential

Dan says it helps that the marine sciences, in general, are applied sciences. "Industries look at our research and say, 'There's potential for us there,' " he says. "That leads us into groups interested in venture capital, patents, and copyrights. All of that is really active here."

The scientists also actively show their enthusiasm for working with undergraduates, which is not always a top priority in research institutions. "First and foremost is the teaching. That's our job. It's one of the cool things about UNCW, one of the things I really like," Laela says.

"Let's face it," Martin says, "we all could have picked professions that would have been more financially rewarding. So you know we're here because we like the work."

BEN BROWN

marine questions?

Want to learn more about marine science without having to be a UNCW student? The university's public outreach program MarineQuest might be just what you're looking for, whether you're a parent or a teacher or just, someone who wants to get your feet wet. MarineQuest offers travel adventures, summer camps, and other programs. For more information call (910) 962.2886, or visit www.uncwil.edu.