



Kim Watford, right, of the Florida Department of Health, checks Coke Handgen's ability to expel air before and after exposure to red tide as part of the Red Tide Aerosols and Respiratory Illness Research Study in Sarasota, Fla. UNCW is a partner in the research project. *Sarasota Herald-Tribune/Rob Mattson*

\$7.53 million grant fuels study of red tide toxins

Red tide, naturally occurring algae that “bloom” along Florida’s Gulf Coast, emits harmful toxins, which irritate the eyes and lungs of beachgoers. It poisons fish and marine mammals. But it may also provide compounds that treat cystic fibrosis and other lung diseases.

UNCW received a five-year \$7.53 million grant from the National Institute of Environmental Health Sciences to continue its study of the chronic effects of red tide brevetoxins and their potential as a therapeutic agent. Research over the past six years has yielded more than 80 published articles detailing findings and three patents dealing with seafood poisoning and pulmonary therapeutics.

UNCW researchers involved include: Daniel Baden, William R. Kenan Distinguished Professor of Marine Sciences and program director for the study; Carmelo Tomas, professor of biology and marine biology; Andrea Bourdelais and Jerome Naar, research associate professors; Sophie Michelliza, Henry Jacocks and Thomas Schuster, research assistant professors.

Project collaborators include the Centers for Disease Control and Prevention, the Florida Department of Health, Lovelace Respiratory Research Institute, Mote Marine Laboratory, the University of Miami Rosenstiel School of Marine and Atmospheric Science and Mount Sinai Medical Center of Miami Beach.



Connie Yee, a graduate student from Hong Kong University of Science and Technology, is pictured with a giant barrel sponge. Yee participated in the summer 2003 research cruise which UNCW professor Joe Pawlik hosted.

Fulbright visiting scholar Susanna Lopez-Legentil and Joe Pawlik in June at Conch Reef.

Sponges under stress

When giant barrel sponges are under stress, they can experience fatal bleaching, turning into something that looks like “white bread in water.” What causes this stress is unknown, but one UNCW researcher has discovered something that plays a significant role.

“I have isolated the stress protein in this sponge. This is the first time it has been done,” said Susanna Lopez-Legentil, a Fulbright Visiting Scholar working with Joe Pawlik, professor of biology and marine biology. In her lab at the UNCW Center for Marine Science, she is subjecting the stress or “heat shock” protein to variations in salinity and temperature in

an attempt to understand what is stressing the giant barrel sponges.

Lopez-Legentil is a postdoctoral researcher from the University of Barcelona, Spain. She became interested in studying with Pawlik after meeting him at a conference, where they learned of their shared interest in marine chemical ecology.

In June, the National Science Foundation awarded Pawlik a \$524,000 four-year grant to continue his work. He has been monitoring the sponges, called the “redwoods of the reef,” since 1997 and has amassed the first comprehensive set of basic demographic data on the species.