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## Undersea link

### UNCW scientists join exploration of a world beneath sea

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Under the deep blue sea lies a world of the unknown – a dark, serene place that is home to marine life that few people have ever seen.

Scientists and researchers teamed up June 8 for “Life on the Edge,” a two-week deep-sea exploration to discover a new world of marine species and study the condition of coral reef while traveling northward along the continental shelf and the Gulf Stream from Fort Pierce, Fla., to the coast of the Carolinas.

In its sixth year, the project is staged from the Harbor Branch Oceanographic Institute’s 204-foot research vessel Seward Johnson, which was built in 1984 and named after the institute’s founder, J. Seward Johnson Sr.

The Cape Fear, UNCW’s 70-foot research vessel, transported about 14 guests Thursday to the Seward Johnson, which was 80 miles from the North Carolina coast.

Visitors learned about the team, which consists of 17 scientists, 11 crewmembers and six submersible vessel pilots and engineers whose mission is to investigate deep-sea habitats that include Lophelia, the dominant type of coral bank off North Carolina, home to a variety of little-known marine species.

Steve Ross, chief scientist and research professor at the Center for Marine Science at the University of North Carolina at Wilmington, said that one part of the team’s mission is to research the condition of the coral reef habitat.

“If you destroy a coral reef, you destroy a whole community and species could face endangerment,” he said.

But “Life on the Edge” goes a step beyond dropping nets and trawling

the ocean for never-before-seen creatures. It uses the Sea-Link I, a four-man submersible vessel, to explore the deep-sea waters and cliffs, from 300 feet to a maximum depth of 3,000 feet under water.

The battery-powered sub’s many features including a vacuum sample collection system, 3-D laser imaging device, high-definition camera and a digital still camera.

Its forward chamber, a 5-inch-thick acrylic sphere, allows one pilot and one scientist to view the ocean in a new way. Another pilot and scientist sit in the stern, behind the sphere, during the exploration.

Although the sub has the capability to stay submerged for five days, each dive lasts no longer than 3 hours and it takes 4 hours to recharge the main battery.

“It’s 3 hours of very intense activity,” Dr. Ross said. “We try to maximize every minute that we’re down there.”

A spare battery is attached to the sub just in case of an emergency.

The collection system rotates 12 buckets during the sub’s two dives each day to gather samples.

One of Thursday’s dives brought back samples of sea urchins, plankton, Lophelia, a deepwater angler fish, and a crab that belongs to a group of Galatheid crabs commonly known as “squat lobsters.”

“What is unique in our work is that we’re seeing and identifying these animals in their natural habitat, something no one has done before,” Dr. Ross said.

Cheryl Morrison, a U.S. Geological Survey biologist who works onboard in the conservation genetics lab, said this is her first year to participate in the project. While working in the lab she sees all types of species including fish, turtles and amphibians.



PHOTO COURTESY OF UNCW

**A squat lobster clings to coral under the Atlantic Ocean as seen from cameras on board the Sea-Link I. TOP: A deep-water angler fish is one of several creatures pulled from the ocean by UNCW researchers using Sea-Link**

She said the technique used in the coral reef sampling is similar to human DNA sampling used to investigate crime scenes.

“It’s a similar technique, but coral is a new research project,” she said. “Coral creates a habitat for fish and other species that are equally important and we should be concerned about their conditions.”

Martha Nizinski, a zoologist with the National Oceanic and Atmospheric Administration (NOAA), said she’s participated in the project for three years and sees it as a good way to learn about species that she had only heard about.

“We knew a lot of these species existed,” she said. “But now we can see them and learn more about them ourselves.”

A multi-agency partnership including NOAA, UNCW, USGS, the National Marine Fisheries Service and

the North Carolina Museum of Natural Sciences helps fund the project.

Liz Baird, coordinator of distance learning at the museum, said that each day on the vessel, she tries to translate what scientists are doing in a way the public can understand.

Ms. Baird sent daily “Life on the Edge” journals, reports and images via satellite to the museum’s Web site, which kept those on shore aware of what was happening.

“It’s an unbelievable experience,” she said. “It’s a fun adventure out here.”

Ms. Baird said the museum is creating a video production and CD-ROM of the exploration to bring the action from the sea to the public.

The exploration was scheduled to end today, but photos, journals and other data can still be accessed at the museum’s Web site, [www.naturalsciences.org](http://www.naturalsciences.org).