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Jeff Godfrey Dives into Science

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The roll of the deck never stops: up, down, up, down.

As the late-evening light fades, the darkness brings a sense of loss. Beyond the lights of the deck, there is nothing but pitch-black emptiness.

Despite the darkness and the frigid Antarctic temperatures, those about to go over the side are excited. They're hundreds of miles from land, about to jump into water that's several thousand feet deep and beyond cold. This is what they call extreme science.

Although this scene may sound like a screen play for a Hollywood action-thriller, it's actually a group of dedicated marine scientists in search of a gelatinous creature, a chordate called a salp. Keeping the scientists safe during their search is Jeff M. Godfrey, University of Connecticut's diving-safety officer.

"Safety is job one," said Godfrey. "By the time you become a diving officer, you have enough experience to make sure you facilitate their work, so that when they come to you with questions, you can help them develop their experiments."

No one can just walk into the marine sciences building and ask to become a scientific diver. Just to be considered for UConn's program, a diver must hold an open-water certification, and that's just the start.

"We don't supervise our divers directly, as you would during a commercial dive operation. We have to rely on training to make sure our divers have the necessary skills and knowledge to work safely in the water," he said.

This training includes a thorough physical assessment approved by a panel of doctors from the American Academy of Underwater Scientists to start. There are training sessions in CPR, first aid, oxygen administration, and knowledge reviews in physics, physiology and many other subjects.

All together the program totals over 100 hours of cumulative training, lasts seven weeks and consists of classroom training, open-water dives and a swim test. The results of this training regimen will get qualified divers to a depth of 30 feet. To go deeper, even more detailed and rigorous training is required.



UConn photo

Jeff M. Godfrey, UConn's diving safety officer.

By the time a marine scientist is fully qualified most will have over 100 dives. To stay current, divers must dive 12 times a year and at least once at their deepest dive depth. Currently the 23 divers at Avery Point are all past that point and on their way to deeper dives and more exciting scientific finds.

Godfrey points out that deeper isn't necessarily better. "The vast majority (of diving) is done on open surface scuba. It's inexpensive, the gear is readily available and most scientific diving takes place in 30 feet of water or less, so it's the appropriate gear to use," he stated.

University of Connecticut Celebrates Twenty Years of the Sea Grant College Program

Peg Van Patten

October 5, 2008 marked exactly twenty years since UConn was formally designated the nation's 23rd Sea Grant College. This status is an honor bestowed by the U.S. Department of Commerce through its National Oceanic and Atmospheric Administration and is the highest level to which a Sea Grant program can aspire. The program is based at UConn's Avery Point campus, where a ceremony with dignitaries was held in 1988. At the time, Governor William A. O'Neill declared October 5 to be Sea Grant College Day in Connecticut. The Sea Grant College plaque is mounted on the shore-side exterior of Branford House at UConn Avery Point. The program, which supports competitive research, outreach, and education activities is one of a national network of such programs in flagship research universities. Dr. Edward C. Monahan, program director during the 1988 designation, was responsible for achieving a full research component, including many international activities. The process had been initiated by his predecessor, Dr. Victor Scottron, who passed away this year. Today, under the leadership of Dr. Sylvain De Guise, the program's vision is "to foster sustainable use and conservation of coastal and marine resources for the benefit of the environment and current and future generations of residents of Connecticut and the region". The extension and education programs have expanded in recent years. To view the program's plans for the future, see the summary of its Strategic Plan for 2007-2011 on the program's web site at <http://www.seagrant.uconn.edu/blueprint2.pdf>. "The Year in Numbers", this year's annual report, can be viewed at <http://www.seagrant.uconn.edu/annrpt08>.

Jeff Godfrey Dives into Science ...continued

Many university-level diving programs are trying to upgrade to rebreather gear. This is a closed-circuit unit that has built in filters that "scrub" the carbon dioxide once a diver exhales and turns it into breathable oxygen. "Every time you exhale, you're blowing out 16 percent oxygen," he said. It's all about mobility and the amount of time you can spend underwater; and about how physically fit you are. When a scientific diver wants to go deeper than 30 feet, it takes a lot of heavy gear to get there. Doesn't the rebreather eliminate a lot of the weight?

Godfrey estimates that the gear necessary for a diver to go down to 230 feet weighs over 200 pounds, and when they get there, it's only for about 25 minutes. "Your gas supply is limited by what you can carry on your back. That really limits the dives to people who have the physical capability," he said. "The rebreather gives you mobility and you're independent from the surface. If you see something over here and you want to look at it, you can go and look at it."

What is currently limiting scientific divers more than heavy gear is the heavy cost of a rebreather unit. They're difficult to get and once you do, the sticker shock will hit you harder than the frigid Antarctic water: a unit built in Europe runs about \$12,000.

Godfrey points out there are differences between diving for fun and scientific diving. Not too many recreational divers are going to head for the southern ocean of Antarctica. Recreational diving is for what you can see or find. Scientific diving is an exercise in looking for specific things in specific places.

Whether it's a dive in Antarctica, Hawaii, the Great Barrier Reef of Australia or right off the Connecticut coast in Long Island Sound, no matter what kind of diving it is, safety in the water is the number one priority. That's one of the main reasons scientific divers want Godfrey to come along.

"They like me to go with them because then they don't have to be the safety diver," he said. If he's not diving, he's keeping busy filling tanks, repairing equipment and preparing scientific gathering supplies. "I generally try to help out in the lab or wherever I can be a service to the divers."

Whatever he does, wherever he does it, Godfrey is always looking forward to his "dream dive"...his next one, of course!

About the Author

Paul Mantikoski is an undergraduate student who wrote this profile for his Journalism 200W class at UConn, taught by Greg Stone.