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Biology Students Join Professor Studying Deep-Sea Creatures in the Bahamas

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Recommended Citation

Aubry, Ann, "Biology Students Join Professor Studying Deep-Sea Creatures in the Bahamas" (2007). *News and Events*. 3156. https://digitalcommons.iwu.edu/news/3156

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Above, Associate Professor of Biology Will Jaeckle displays the swordfish larvae caught during a marine research expedition in the Bahamas. Below, Oluwakemi Onajin '09 prepares to sort and identify specimens of deep-sea invertebrate larvae. <u>View</u> <u>more photos</u> from the expedition.



Biology Students Join Professor Studying Deep-Sea Creatures in the Bahamas July 12, 2007

BLOOMINGTON, III. – In a snapshot from the Bahamas, Will Jaeckle stands in the traditional proud fisherman's pose, arm held high to display his prized catch.

However, hanging from his raised hand is not a magnificent adult sport fish, but a tiny pipette containing three swordfish in their larval stage. For the associate professor of biology from Illinois Wesleyan University, the swordfish weren't a fisherman's triumph, but a byproduct of the nets and collection bottles that were cast deep into the ocean from the deck of the *R/V F.G. Walton Smith* during a recent research voyage. The intended targets included larvae of bottom-dwelling invertebrates, which spend their lives in the water column, and cyanobacteria (microscopic photosynthetic bacteria) upon which the larvae may feed.

Jaeckle, along with Illinois Wesleyan biology majors Oluwakemi Onajin '09 and newly graduated Sarah Lewis '07, were joined by counterparts from the University of Oregon on the first leg of a four-year project funded by the National Science Foundation. The opportunity proved illuminating for both students.

Jaeckle's group is studying the invertebrate larvae from deep-sea species to learn how these developmental stages get the necessary sustenance to complete their developmental cycle. The cyanobacteria that are hypothesized as a potential food source are the research interest of grant collaborator Michelle Wood, a biologist from the University of Oregon. Specimens were captured at controlled depths starting 1,000 meters below the surface and then sorted and identified while being viewed through microscopes during 16-hour work days.

Knowledge about the development of deep-sea creatures is limited, Jaeckle said. "We're just trying to understand how these developmental stages of deep-water organisms make their living. We are somewhat ignorant of what processes occur at depths that we can only see by towing cameras or using submarines. Even then we're only getting a narrow snapshot."

Lewis, a Barrington Community High School graduate from Deer Park, found the research voyage to be such an "absolutely amazing experience," it prompted a revision in her plans for graduate study in order to spend more time at sea. Onajin, who is from Ikeja, Lagos in Nigeria, admitted that at first the experience was overwhelming because it was her first time on a boat.

"However, all that was forgotten as soon as we began to work on the deep-sea invertebrates," she said, adding that the handson learning piqued her interest in invertebrate zoology. She also hopes her experience encourages other international students to consider research opportunities.

"It was definitely the highlight of my summer," she said. "I am grateful for that once-in-a-lifetime opportunity."

Jaeckle has conducted similar study of marine invertebrates on two previous expeditions to Antarctica. Future expeditions supported by this NSF grant will take the researchers back to the Bahamas and then the Gulf of Mexico.

Photos from the expedition can be viewed at https://sun.iwu.edu/~iwunews/BahamasResearch/

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