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Julie Cohen

The Deep, Deep Blue Sea

UC Santa Barbara geologist Matthew Jackson will be glad to be back on dry land after spending three weeks aboard the Okeanos Explorer, a research vessel managed by the National Oceanic and Atmospheric Administration's (NOAA) Office of Marine and Aviation Operations. He is the geology lead on a telepresence-enabled cruise collecting critical baseline information on unknown and poorly known deepwater areas in American Samoa and Samoa. A website features live video and photography as well as daily updates and mission logs.

At-sea and shore-based science teams are working together to map the seafloor and make some of the first deepwater scientific observations in these areas. Jackson's role is to advise on geologic features the scientific team observes on the submarine portions of islands, atolls and seamounts in the region, which were active volcanoes millions of years ago. Jackson hopes to dive at the Vailulu'u seamount to gather information about the earliest stages in the evolution of a volcano in the Samoan region. Vailulu'u is completely underwater, yet scientific evidence suggests this volcano may continue to be active.

"I am interested in understanding the various stages of a volcano's eruptive history from the younger stages of incipient volcanism to the waning stages — or "last gasps — of older volcanoes," said Jackson, an associate professor in the Department of Earth Science. "I want to know how volcanoes in the region evolved chemically over their life cycle and exactly how long is that life cycle is."

Using a remotely operated vehicle, members of the expedition are conducting 24-hour operations consisting of daytime ROV dives and overnight mapping operations, including during transit. The team is working in and around Rose Atoll Marine National Monument, the National Marine Sanctuary of American Samoa and the National Park of American Samoa.

The venture is part of NOAA's Campaign to Address Pacific monument Science, Technology, and Ocean NEeds, known as CAPSTONE, a major multiyear science initiative focusing on the deep ocean of U.S. marine protected areas in the central and western Pacific. This is the first of two cruise this year in and around American Samoa and Samoa.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.