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Science students studying endangered coral species in lab

Sarah Gardner

Dominican University of California, sarah.gardner@dominican.edu

Dave Albee

Dominican University of California, david.albee@dominican.edu

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Science students studying endangered coral species in lab

Eight undergraduate students and three teaching assistants in Vania Coelho's Bio Research Methodology class at Dominican have been handed the task and responsibility of studying a threatened species of coral native to Florida.

The project is tied to [Coelho's research](#) "Mitigating thermal bleaching through shading in a coral species native to Florida" which has been approved by the National Oceanic and Atmospheric Administration's Florida Keys National Marine Sanctuary (FKNMS). It will involve more than 300 corals of *Orbicella faveolata* (formally known as *Montastrea faveolata*); a key frame-building coral in Caribbean reefs that has declined in abundance at alarming rates over the last few decades, in great part due to global climate change.

The corals, handled and shipped by Mote Marine Laboratory, in Summerland Key, FL, arrived March 4 at Dominican from the FKNMS. They are being observed in a laboratory in the science center.

"Talk above relevance; this is as relevant as it gets. This is a species that needs help, and we are so excited to have a chance of finding solutions," says Coelho, a professor in the [Department of Natural Sciences and Mathematics](#) in the [School of Health and Natural Sciences](#). "This is the first time we are studying a boulder coral species in my lab, and it is a species native to the Caribbean, which has some of the most vulnerable reefs in the world."

Coelho was inspired to contact Mote Marine Laboratory after reading a [New York Times article](#) last November about a quick-grow technique, called microfragmenting, which potentially could mass-produce reef-building corals for transplanting onto dead or dying reefs. Coelho requested a permit through FKNMS to receive *Orbicella faveolata* corals from their coral nursery, which were handled and shipped by Mote.

"This is what we call a massive type of coral, which is much more difficult to handle, and fragment for lab experiments than branching corals," she says.

Students will be studying tiny disks of the species, roughly 2-by-2 centimeters. While Coelho leads another class on a field trip to New Zealand, the teaching assistants and undergraduate students at Dominican will oversee and manage the coral as it acclimates for about two weeks. The research team will nurse the corals and then begin lab experiments upon Coelho's return. Students normally spend up to two hours a day in the lab, but sometimes they may have to spend up to 5 hours.

"There are no weekends for them. No spring break for most of them either. It's a major commitment and they agreed to do that," Coelho says. "My undergraduate students have been training for months to be able to do this, my teaching assistants have already done a similarly high demanding research project with me in the past, and came back to help. It is impossible for me not to be proud of them, not just any student would be willing to do that. They knew it would be a tremendous amount of work and they chose to do it anyway. . Not only that, but they are enthusiastic about it; they are engaged in a real-life problem, it is original research, and it's great to be a part of it. As a teacher, I could not possibly feel more rewarded than having them as my students."

The task, Coelho said, is to keep the corals alive under higher temperatures and varying levels of light intensity with the goal of discovering a means of protecting the coral through shading. The research team will carry on the experiment through the spring semester and analyze data in the fall semester.

"If everything goes well," Coelho says, "potentially we could design field experiments in Florida, and learn if what we are observing in the lab reflects how corals would respond in the field."