CSUN Department of Biology

BIOSPHERE

The Weekly Bulletin of Biology

Biology Colloquium: Friday, 3 October 2014, 2:00 pm in CR 5125

"The Importance of Niches and Neutrality in Community Structure"

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New Publication

Jesse Tootell and Dr. **Mark Steele** have a paper published in *Coral Reefs*, "Vermetid gastropods reduce foraging by herbivorous fishes on algae on coral reefs." The research was part of Tootell's MS thesis research.

How to Apply to Grad School

Dr. **MariaElena Zavala** will be giving a special presentation, *So you want to go to Graduate School: Tips for Preparing a Successful Application*. The talk is from 2:30–3:30 pm on Thursday, 2 October, in CR 5201. Everyone is welcome.

Coral Reef REU in Moorea

—Alexis Estrada

Last spring break I traveled to Moorea, French Polynesia to conduct coral reef research with the polyp lab. Dr. **Peter Edmunds** received a supplement to his grant to provide a Research Experience for an Undergraduate (REU). His primary grant is to study the coral reefs off of Moorea.

My project was to count coral polyps and determine the surface areas of colonies of *Pocillopora verrucosa* using the wax-dipping method. Surface area is an important determinant of photosynthesis, which occurs via algal symbionts living within the coral tissues. Net photosynthesis is often measured in coral experiments because it is a major component of a coral's health.

To determine coral surface area, I first established a surface-area standard to compare coral colonies to. I used wooden dowels of known surface areas and dipped them in wax a first time to coat the dowel, and then a second time to measure the change in mass between the first and second dipping. From that I was able to generate a standard curve by plotting surface area against the change in mass. Using the equation from that regression, I was able to estimate coral-colony surface area by plugging in the mass of the wax

added to a coral and solving for surface area. See: taking Design and Analysis of Experiments paid off!

While I was in Moorea, I spent half of a typical day in the lab working on my project and the other half snorkeling, learning about the reefs, and study sites included in the long-term ecological research study. I helped out where I could. It was awesome! I'd go swimming with Pete and the team to collect the data, and then back at the research station we'd process those data. In the field, images are taken of the same places year after year. From those images, it is possible to track changes in biodiversity at the sites over time, as well as which organisms are the major players in terms of abundance. Long-term research such as this allows researchers like Pete to follow how ecosystems respond to environmental change.

It was pretty cool to find myself snorkeling a tropical reef, pondering some of the most amazing biodiversity on the planet, that this stuff is actually out there to not only see, but study and understand. There were coral formations larger than me that from far away seemed like large boulders, yet when I swam closer and the details came into focus, I could see the individual coral colonies, differentiate among coral species, and see the many organisms living on and around the reef, urchins and fishes galore! Before my trip, living in Santa Clarita and going to school in the San Fernando Valley, it was difficult to conceive just how impressive these coral reefs are. It was surreal for me to be in an environment that I had read about and attended lectures on but hadn't really seen.

In addition to the research experience, I was able to get a hands-on glimpse of graduate research. The grad students offered a wealth of information on what graduate school is like and how they came to be working in the Edmunds lab. I also got some advice from Pete about what advisors look for in applicants. I was seriously considering applying to graduate school prior to this REU, and the whole experience validated my plans to pursue a graduate degree in marine biology. Despite the extra years in school and the obvious long hours, I see attending graduate school as an opportunity to further my education and scientific training by studying ecosystems like tropical reefs and exploring interesting questions about them. The trip was amazing, maybe life changing.

I would recommend that undergraduate students seek out REUs as a chance to branch out and experience the subjects they want to study. There are many opportunities out there for students to take advantage of, with our professors and over summer at other institutions. Get involved in research. Give yourself a larger sense of the world and the opportunities that are in it.

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