



BIOSPHERE

The Weekly Bulletin of Biology

Biology Colloquium: Friday, 16 October 2015, 2:00 pm in CR 5125

“The Role of Coral Ecophysiology in a Warmer and More Acidic World”

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Thesis Defense on Corals

Ananda Ellis will defend her MS thesis at 9 am on Tuesday, 13 October in the Altadena Room of the USU. Her title is: “The impacts of temperature and other environmental factors on an early life scleractinian coral.” All are welcome.

Workshop on CVs

The Marine Biology Graduate Student Association and the Behavior, Ecology, and Evolution Research Club are cohosting a workshop at 7 pm on Monday, 19 October in MG 4111. This one will demystify the curriculum vitae, which is the equivalent of résumés for academics. Workshops are aimed at helping undergrads, especially those in the **Marine Biology** and **Ecology and Evolution** options. The goal is to review the styles and effectiveness of participants’ CVs. If you don’t have a CV yet, this workshop is still for you. The experience will help you develop your own CV based on the advice of those with more experience.

New Publication

California Cooperative Oceanic Fisheries Investigations Reports has published, “The genetic diversity and population structure of barred sand bass: a historically important fisheries species off Southern and Baja California,” by **Corinne Paterson, Chris Chabot, Dr. Jeanne Robertson, J. Cota-Nieto, B. Erisman, and Dr. Larry Allen.**

Grad Student Awarded \$4K

Maria Akopyan received a Graduate Equity Fellowship for 2015–16, which was funded by the Office of Graduate Studies and worth \$4000 in financial aid.

Student Defrays Research Costs

Rachel Rhymer won a \$1000 Herpetological Natural History grant from the *International Herpetological Symposium* for: “Determining the role of maternal care in an Argentinean lizard.”

Botanic Garden Honored

Biology's Botanic Garden has been named among the top-50 university botanic gardens in the country by [Best Colleges Online](#). Other prestigious gardens on the list included those from UC Berkeley, UC Davis, University of Chicago, University of Washington, and Cornell University. The rating system considered each garden's number of species, conservation efforts, and use in education.

Research with Dr. Oppenheimer

By popular demand, the Department has added additional "seats" in 495D Directed Research with Dr. **Steven Oppenheimer** for spring 2016. To sign up, check with Dr. Oppenheimer and get a form from the department office.

Cancer cells in clumps are more dangerous than single cancer cells because cells in clumps are protected from many of the body's defenses. Blood cells in clumps can cause heart attacks and strokes. Clumped pathogens can infect human cells. Students will assay reagents to test whether they can "unclump" yeast cells.

Here are questions asked in a recent medical school interview.

(1) *"Why did you choose the reagents that you used, for instance, citric acid?"* Reagents are part of a decade-long program to test all safe sugars, salts, amino acids, etc. that are available. For example, the lab found that magnesium sulfate is as good an unclumper of yeast as it is an unclumper of human cells, which helps justify the yeast assay. Most reagents are not good unclumpers, but we need to test them to find out. Knowing which

are not unclumpers is as important as knowing which are unclumpers.

- (2) *"How can your data be applied to human treatment? For example, are you planning to ask people to take these reagents?"* No—the Oppenheimer lab does the basic research. Others who read our work may try human applications.
- (3) *"Some of the reagents you use are already present in our bodies, so how is it going to make a difference? For example, you used magnesium sulfate, which is already used in human applications. Google magnesium sulfate antithrombotic agent."* If applied correctly, some of these reagents, whether in our body or not, can be clinically useful. That is for others to quantify in a clinical setting.
- (4) *"Acid and other chemicals can unclump cells; how are these chemicals different from what you used? Why can't we use acids or other reagents that are known to unclump cells?"* The Oppenheimer lab has tried everything. Right now they are trying citric acid. What makes the work special is the number of replicates. Good experiments have a high number of replicates and thorough statistical analyses of the results. When 50 students repeat experiments that makes the results more reliable. What is also special is the yeast assay. It is simple, highly quantitative, and safe.

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