



# BIOSPHERE

## The Weekly Bulletin of Biology

No Colloquium

Have a safe and joyous Winter Break!

### New Funding

Dr. **Mike Summers** was recently awarded a three-year grant from the National Science Foundation to study a new suborganelle in his favorite cyanobacterium.

The new grant—"Determination and functional analysis of the cyanobacterial lipid droplet proteome"—funds **Jenevieve Polin**, a full-time research associate, as well as student research assistants.

Their aim is to identify proteins associated with lipid droplets using mass analysis, to tag these proteins with a fluorescent protein, and to confirm that the proteins localize in lipid droplets. The project relies heavily on the department's confocal laser microscope.

The research is also improving teaching. Each student in the Bacterial Genetics course this semester cloned a confirmed lipid-droplet colocalizing protein into a bacterial two-hybrid plasmid. They then used it to screen a genomic library that the class built. The results helped to identify other proteins that associate with the lipid droplets.

Summers predicts this study will lead to the use of lipid droplets for the production of "green" biofuel and high-value biological compounds.

On a related note, recent grad student **Anantha Peramuna**, who pioneered the lipid droplet work, has been accepted into a Ph.D. program at the University of Copenhagen. His project will focus on harnessing lipid droplets from other organisms.

### New Publications

*Nature Scientific Reports* has published, "Water flow modulates the response of coral reef communities to ocean acidification" by Drs. **Steeve Comeau, Peter Edmunds, Coulson Lantz, and Robert Carpenter**.

*Cancer Research* has published, "A hypusine-eIF5A-PEAK1 switch regulates the pathogenesis of pancreatic cancer," with Dr. **Jonathan Kelber** as an author together with his collaborators from UC San Diego.

### Speaking Extramurally

Dr. **Gilberto Flores** gave a seminar at Portland State University: "Temporal variability of the human microbiome."

## Toluca Lake Garden Club Scholar

**Nickie Cammisa** is the 2015 Toluca Lake Garden Club Scholar (\$1500).

## CSUN Dominates at WSN

Biology faculty, students (both grad and undergrad), postdocs, and technicians had an abundant showing at the meeting of the Western Society of Naturalists:

### TALKS

- **Shannon Bayliss:** “Context dependent effects of herbivores on biotic resistance to plant invasion”
- **Stephanie Bensemenn:** “Distribution and growth estimates of young-of-the-year Giant Sea Bass, *Stereolepis gigas*, off Southern California”
- **Amy Briggs:** “The influence of light and photosynthesis on the calcification response of a tropical crustose coralline alga to ocean acidification”
- **Dr. Steeve Comeau:** “Comparative response of coral reef communities from French Polynesia and Hawaii to ocean acidification”
- **Dr. Peter Edmunds:** “Size-dependency in the response of the branching coral *Pocillopora verrucosa* to elevated temperature and high pCO<sub>2</sub>”
- **Ananda Ellis:** “The effects of temperature and substratum type on the settlement preference and post-settlement success of a reef coral”
- **Nick Evensen:** “The effects of ocean acidification on competitive interactions among corals in a simulated coral community”

- **Maureen Ho:** “Differential growth responses to water flow and lowered pH in marine macroalgae”
- **Erica Holdridge:** “Relative effect of exploitative and interference competition varies with population density”
- **Parker House:** “The return of the king: Giant Sea Bass, *Stereolepis gigas*, population and biomass densities off Santa Catalina Island, CA”
- **Coulson Lantz:** “Total alkalinity and dissolved inorganic carbon of an experimental coral reef community: methods to link organism and community metabolism”
- **Edwin Leung:** “The influence of environmental variation on year-class strength in White Seabass of Southern California”
- **Sarah Merolla:** “Effects of elevated CO<sub>2</sub> on developmental progression of larval summer flounder”
- **Carolina Mor:** “Light intensity influences the response of *Halimeda macroloba* to ocean acidification”
- **Leah Reidenbach:** “Surge uptake of nitrogen by *Solieria filiformis* in the Gulf of Mexico”
- **Jennifer Smolenski:** “The effect of temperature on the calcification of *Porites rus* does not explain the distributions of its color morphotypes”
- **Drs. Mark Steele and Mia Adreani:** “Reproductive ecology of three kelp forest fishes”
- **Dr. Casey terHorst:** “Indirect ecological effects drive non-additive selection on traits”

- **Sigfrido Zimmermann:** “Associational refuges among macroalgae across a flow gradient on the north shore of Moorea”

### POSTERS

- **Brian Clark:** “Reproductive behavior of Giant Sea Bass, *Stereolepis gigas*”
- **Elizabeth Lenz:** “Physiological tolerance in contrasting morphologies of the stony coral, *Porites rus* to elevated pCO<sub>2</sub> and flow”
- **Bradley Martin:** “Frequent overgrowth of octocorals by *Millepora* in St. John, US Virgin Islands”
- **Josh Manning:** “Preliminary study on the effects of ocean acidification on the coldwater coralline alga *Clathromorphum compactum*”
- **Sarah Merolla:** “Effects of elevated CO<sub>2</sub> on developmental progression of larval summer flounder”
- **Hannah Nelson:** “Effects of coral mortality on reef invertebrate communities”
- **Jessie Ohde:** “Effects of ocean acidification and flow on the macroalgae *Turbinaria ornata* and *Sargassum pacificum* in Moorea”
- **Daniel Sternberg:** “Have *Diadema antillarum* populations in Bonaire recovered 27 years after a mass-mortality event?”
- **Calvin Won:** “Spawning aggregation dynamics of the Barred Sand Bass, *Paralabrax nebulifer*, using active acoustic technology”

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