



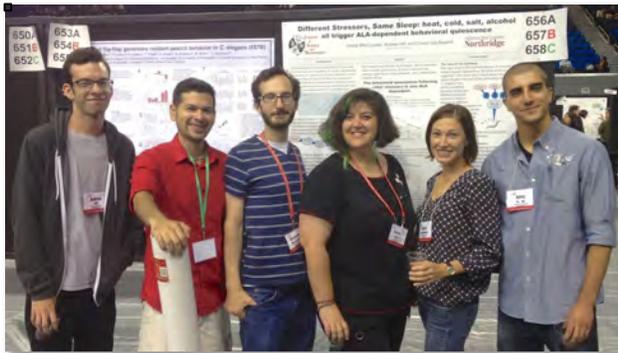
BIOSPHERE

The Weekly Bulletin of Biology

Biology Colloquium: Friday, 20 September 2013, 2:00 pm in CR 5125

“Why the Toad Wouldn’t Croak: Mating Signal Evolution and Sexual Selection in Western Toads”

Gregory B. Pauly, Ph.D.
Natural History Museum of Los Angeles County



Nematode Meeting

Students of Drs. **Cheryl Van Buskirk** and **Ray Hong** presented their work at the 19th International *C. elegans* (AKA Worm) meeting:

- **Andrew Hill** gave a plenary session platform presentation “Epidermal growth factor signaling mediates heat-induced quiescence in *C. elegans*.”

The following posters were also presented (only student authors are listed):

- **Jessie Lopez**, “Different stressors, same sleep: heat, cold, salt, alcohol all trigger ALA-dependent behavioral quiescence”

- **Richard Mansfield**, “Characterization of the *hsf-1*-independent behavioral response to heat shock”
- **Dany Roman** and **Adrig Sarian**, “Student-directed projects on ALA-dependent sleep”
- **Georgina Aguilar-Portillo, Jimmy Escobedo, and Neomal Muthumala**, “The *Pristionchus pacificus* *obi-3* mutant lacks attraction to beetle host pheromone and shows increased turning frequency”
- **Victor Lewis, Maryn Cook, and Justin Alonso**, “A comparative analysis of the genetic basis of molting in the necromenic nematode *Pristionchus pacificus*”
- **James Go**, “Fainting towards necromeny: anesthesia caused by a beetle pheromone is mediated by a lipid-binding protein in *Pristionchus pacificus*”
- **Eduardo Bernal and Neomal Muthumala**, “A mutant in another cGMP-dependent protein kinase, PKG-2, is defective in short and long-term odor adaptation”

New Ecology Professor

Dr. **Casey terHorst** joins the Biology faculty this fall as an Assistant Professor. For the last three years he has been a postdoctoral researcher at the Kellogg Biological Station, which is Michigan State University's field station. He earned his Ph.D. from Florida State University in 2010, and his master's degree from CSUN in 2004.

As an undergraduate, terHorst followed the pre-law curriculum and received a bachelor's degree in History from the University of Southern California. During his senior year, he took a GE class in Evolution. "I just thought evolution was such a nice logical process that I really wanted to learn more about it. Plus, as a scientist, I get to spend way more time with critters in nature than I ever would have as a lawyer!"

terHorst soon took the Marine Biology Semester taught by CSUN faculty on Santa Catalina Island (next offered here in fall 2014). "The Catalina Semester gave me a great start not only in classes on marine biology, but also the opportunity to do independent research. I was hooked."

"When I was at CSUN before," says terHorst, "I spent my time working in marine systems. Then in Florida, I found that any field experiment in the ocean was quickly destroyed by a hurricane, red tides, bull sharks, or inquisitive fishermen. I settled down using a terrestrial system that was much more tractable for doing the sorts of experiments I was becoming interested in."

"Carnivorous pitcher plants form a cup-shaped leaf that fills with rainwater. The plant lures insects inside the leaf, where they drown, and their nutrients are eventually used by the plant. Within the leaf, there's a natural microcosm of bacteria, protozoa, rotifers, and mosquito larvae. This community is quite tractable for imposing experimental manipulations."

terHorst now uses this system to ask how rapidly evolution progresses. He asks how evolution is affected by interactions among species. For example, over the course of several days, protozoa that are with predatory mosquito larvae evolve to be smaller and to have faster reproductive rates. The evolution of these traits allows these protozoa to cope better with the negative effects of predation.

Additionally, terHorst works with an invasive plant species to determine what traits allow this species to invade certain habitats. Burr Clover has successfully invaded nearly every continent in the world. terHorst examines genetic variation in this plant to determine whether some genotypes are better invaders than others, and whether certain traits affect interactions with other species, such as competing plant species, herbivorous insects, or mutualistic bacteria.

When not working, terHorst plays volleyball, softball, and golf. "What with the new-found height among the Biology faculty [other new >6-foot hires], I'm thinking of starting a basketball team. We'll need a few fast guards though..." says terHorst, "I'm also interested in learning how to surf, which I never learned to do, despite being a native Angeleno."

terHorst is interested in recruiting undergraduates into his Evolutionary Ecology lab. If you have an interest in ecology or evolution and working with microscopic organisms in the lab, feel free to contact him.

terHorst is starting out with two master's students: **Shannon Bayliss**, a recent graduate from the University of Virginia and **Erica Holdridge**, a recent graduate of Florida State. Holdridge reverses the flow of the flume in that back in the day CSUN sent four of our best MS students to Florida State, where they have or will soon earn Ph.D.s—**Jamie Kneitel**, **Mia Adreani**, **Janna Fierst**, **Will Ryan**, and **Casey terHorst**.

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Department of Biology

California State University, Northridge

Editors: Paul Wilson and Robert Espinoza

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