



BIOSPHERE

The Weekly Bulletin of Biology

Biology Colloquium: Friday, 23 September 2011, 2:00 pm in CR 5125

“Evolutionary Ecomorphology of Lizards: Feeding, Fighting, and Fitness”

Kristopher Lappin, Ph.D.

Department of Biology, California State Polytechnic University

1st place in the CSU!

Jenny Gowan won 1st place in a CSU-system-wide competition of research presentations. Her advisor for her master's thesis is **Dr. Robert Carpenter**.

Faculty Receive Internal Grants

The following faculty members received mini-grants from CSUN's Research and Sponsored Projects competition: Drs. **Larry Baresi, Randy Cohen, Steven Dudgeon, Robert Espinoza, David Gray, Fritz Hertel, Cheryl Hogue, Ray Hong, Tim Karels, Janet Kübler, Cindy Malone, Aida Metzenberg, Michael Summers, and Virginia Vandergon**. In addition, the College of Science and Mathematics awarded Drs. **Sean Murray and Rheem Medh** funds to bridge their operations between external grants.

New Publications

Dr. Ray Hong and Jessica Cinkornpumin have a publication in *The Journal for Visualized Experiments*, “RNAi mediated gene knockdown and transgenesis by microinjection in the necromenic nematode *Pristionchus pacificus*.” The methods are described in short videos.

Jessica Bredvik, Christiana Boerger, and Dr. Larry Allen have a paper in *Bulletin of the Southern California Academy of Sciences*, “Age and growth of two herbivorous, kelp forest fishes, the opaleye and the halfmoon.”

Acta Histochemica has published, “A glycobiology review: carbohydrates, lectins, and implications in cancer therapeutics” by **Haike Ghazarian, Brian Itoni, and Dr. Steve Oppenheimer**.

Greg Avellis has a paper in *The Wilson Journal of Ornithology*, “Tail pumping by the Black Phoebe.” Avellis is a master's student in the **Dr. Fritz Hertel's** lab.

Professor Biofuel

Dr. Chhandak Basu recently joined the department as an Assistant Professor. This semester he is teaching Biological Principles II (BIOL 107) and Biotechnology (BIOL 470). Basu was raised in Kolkata, India, a city of 11 million people. “I was born in a family of teachers,” he says, “I always wanted to be a teacher.”

After completing a Bachelor's of Agricultural Sciences from the State Agricultural University, West Bengal, he came to the U.S. for advanced studies. He earned his Ph.D. at the University of Rhode



Island. He did his postdoctoral training at the University of Tennessee. He then took his first faculty job at the University of Northern Colorado.

As a graduate student, Basu studied reporter gene expression in various tissues of different plant species. "I used a 'gene gun' and bombarded different cell types. My goal was to identify an ideal gene-promoter construct that could be used in genetic transformation experiments." As a graduate student, Basu received a Sigma Xi grant that funded a trip to the University of Manitoba for training in plant bioinformatics. His postdoctoral research involved attaching a sea jelly gene that codes for a green fluorescent protein to a noxious weed genome to understand the molecular basis of invasiveness in plants.

Recently, Basu's lab, in collaboration with scientists at the National Center for Atmospheric Research, published a high-profile paper on plant-environment

interactions in *Science*. They found that plants could differentially express genes to alter their metabolism under various stressful conditions including air pollution. Dr. Basu's research was featured on ABC, NBC, Fox News, and in many local and national newspapers.

Currently, Basu's research focuses on molecular-genetic approaches to produce biofuel. "We need to find a solution for the current energy crisis," says Basu. His research involves use of plants and algae for the production of biofuel. He is interested in cloning genes from a tropical tree, the "diesel tree," and expressing the genes in other plants and algae. Students in his lab will have the opportunity to gain hands-on experience with cutting-edge biotechnology.

Basu is currently seeking students to join his research team. His students will clone genes responsible for hydrocarbon synthesis and genetically modify plants and algae with those genes. "We want to produce lots of long-chain hydrocarbons in cells. A typical diesel fuel molecule is nothing but a long-chain hydrocarbon." Basu's lab will focus on identifying enzymes responsible for synthesis of long-chain hydrocarbons and metabolically engineer cells for production of diesel fuel. "The cells will be used as factories for biofuel production," he says.

Basu is a recipient of the national Biology Mentor Award given by the National Council on Undergraduate Research. Basu, an avid fan of Harry Belafonte and Cliff Richard, plays guitar and likes to cook. "I would have become a chef," he says with a smile, "if I were not a professor."

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