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Biosphere

The Weekly Bulletin of Biology

Biology Colloquium (Friday 2 PM in CR 5125)

Dr. Catalina Cuellar-Gempeler
CSUN & Florida State University

"The influences of multiple species pools on fiddler crab-associated microbial communities"

Strong CSUN Biology presence at Scientific Conference

Dr. Larry Allen's and **Dr. Mark Steele's** "Fish" Labs attended and presented their research at the *Joint Meeting of Ichthyologists & Herpetologists* in New Orleans this past summer. **Stephanie Benseman** presented "The Secret Life of Baby Giants: The Recruitment of the Endangered Giant Sea Bass"; **Brian (JR) Clark** presented "Courting Behavior of Giant Sea Bass, *Stereolepis gigas*"; **Brian Peña** talked about "Age Structure and Growth Rates of Vermilion Rockfish, *Sebastes miniatus*, along the California Coast" and **Calvin Won** presented "Moonlit Summer Love: Exploring the lunar effect on spatial patterns of spawning Barred Sand Bass". **Dr. Mark Steele** and **Mia Adreani** also presented a talk on "Effects of temperature on interannual variation in reproduction of three batch-spawning kelp forest fishes", while two more students presented posters: **Alexandra Meyer** on "Identification of SNP Loci in the Shovelnose Guitarfish, *Rhinobatos productus*, Using Next-Generation Sequencing" and **Stacey Virtue-Hilborn** on "Bay Pipefish Abundance, Distribution and Ecological Function in Southern California Eelgrass Beds".

Drs. Robert Espinoza, **Jeanne Robertson**, and **Gregory Pauly** from the Natural History Museum of Los Angeles County presented "Coming to America I. The Invasion History of the Mediterranean House Gecko (*Hemidactylus turcicus*) in the USA", while **Matthew Dickson** and **Jason Warner** from the Espinoza Lab presented "Coming to America II. A Genetic View of the Invasion History of the Mediterranean House Gecko (*Hemidactylus turcicus*) in the USA".

Topping CSUN's strong presence at the meeting, **Dr. Larry Allen** offered the ASIH Past Presidential Address during the opening plenary session commemorating the *100th Anniversary of the American Society of Ichthyologists and Herpetologists*, with a talk titled simply "GIANTS!".

SAVE THE DATE for the next **Biology Alumni Association BIOBASH**
Thursday November 3 at 6PM (free for Faculty and Students!)

Outstanding Service by CSUN Biology Professors

Dr. Steve Oppenheimer served as a Review Panel member for the NIH R24 grant, Resource-Related Research Projects for Development of Animal Models and Related Materials.

Dr. Maria Elena Zavala will continue as the Associate Director of the Mentoring and Networking Core of the National Research Networking and Mentoring project, an organization that offers career resources and opportunities for all scientists (nrmn.org).

Research Focus

New method to track genes expressed by cancer cells

Oncologists often preserve tumors extracted from patients in formalin-fixed, paraffin-embedded (FFPE) blocks. FFPE samples can later be studied through diverse biochemical and microscopic techniques, in order to characterize the tumor cells and their environment. For example, researchers can extract RNA from FFPE samples, and thus ask questions about differences in genetic expression between tumor cells and their normal counterparts. Until now, these extractions methods could often prove sub-optimal, leaving out RNA molecules that might be critical to understanding the biology of cells within a tumor. In order to solve this problem, **Malachia Hoover**, **Yvess Adamian**, **Dr. Jonathan Kelber** and their colleagues developed a new method that combines commercially available FFPE RNA extraction kits and the use of a newly-designed micro-homogenizer [1].

"When we separated the extracted RNAs using gel electrophoresis, we could show that the extracted RNAs were longer than those obtained using only the FFPE RNA extraction kit", explains Yvess, adding that their observations suggest that a lot of the RNA was lost during de-paraffinization with the old method. In fact, Yvess can't help but wonder how many new genes could turn out to be novel biomarkers – genes that cancer cells express in specific combinations (a genetic signature of sorts) and that can inform doctors about treatment options or realistic predictions of therapeutic outcome.

Malachia, on the other hand, is particularly excited about another shocking observation from their study: the genes expressed by the cancer cells depended on where they resided within the organism. She explains that the genes expressed by pancreatic cancer cells injected into a mouse pancreas (what researchers call an "orthotopic" injection) where in many ways different from those expressed by the same cancer cells injected just under the skin (or "subcutaneous" injection). According to Malachia, this may prove a cautionary tale for cancer researchers: "our findings make us question how beneficial it is for researchers to continue working with subcutaneous injections of cancer cells if their gene expression profiles might not reflect what happens in their actual environment".

[1] Hoover M, Adamian Y, Brown M, Maawy A, Chang A, Lee J, Gharibi A, Katz MH, Fleming J, Hoffman RM, Bouvet M, Doebler R, Kelber JA. *A novel method for RNA extraction from FFPE samples reveals significant differences in biomarker expression between orthotopic and subcutaneous pancreatic cancer patient-derived xenografts*. **Oncotarget** 2016 Sep 1. doi: 10.18632/oncotarget.11809. PubMed PMID: 27602776.

CSUPERB Grants, Scholarships and Awards

(applications due by 5pm on Monday September 26)

The CSU Biotechnology Program (CSUPERB) offers a series of award and scholarships for students and faculty, some of which have deadlines coming up. The Crellin Pauling Student Teaching Award, the Don Eden Graduate Student Research Award and the Glenn Nagel Undergraduate Student Research Award, as well as the Andreoli Faculty Service Award and CSUPERB Faculty Research Award, they are all due on **September 26, 2016**.

Graduate and Professional School Information Day

The Career Center is hosting the Graduate School Information Day, a great opportunity for students and alumni to gain important information about graduate and professional schools. Academic program representatives will be meeting with students one-on-one to share their programs in an arena-like setting.

Tuesday September 27, from 11am-2pm – USU Northridge Center.