



SF STATE

Bio News

Fall 2007

A Newsletter for Alumni and Friends of the Department of Biology

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A WORD FROM THE CHAIR



The Department's first graduation celebration last spring was everything we'd hoped for, and more. Over 900 people attended a spectacular, two-hour convocation, with every single graduate recognized. (Event photos on page 3.)

We're launching a Master of Science in Genetic Counseling (MSGC) program. This program is a cooperative venture between UCSF, CSU Stanislaus, Kaiser and our Department, and will be directed by CSU Stanislaus Biology Professor Janey Youngblom and the Kaiser-Permanente Genetic Counselor Department. Genetic Counselors play a crucial role in explaining the benefits of our understanding of the human genome, and we are very proud to have a role in their training.

We are also excited about the plans that are taking shape for a June 2008 conference on Personalized Medicine. The conference is the brainchild of Biology alumnus Dan Maher (BA '79), and co-organized by Mary Fermi (BA '77) and Ken Hitchner (BA '82).

The saddest news I have to share is that one of our young, promising and beloved faculty members, Assistant Professor Felipe-Andres Ramirez-Weber (or FARW for short) passed

away on November 1, at the age of 43, after a nearly 23-month battle with leukemia. We're dreadfully sad about our loss, but most of all the loss to Felipe's loving and incredibly dedicated wife, Heidi, and his parents, Ivan and Elena.

Felipe's life was far too short, but in that brief time he touched an astounding number of people. His science, involving cell communication in development, was groundbreaking. To share his findings with the world, and integrate them into a growing literature, he created a website

(<http://hedgehog.sfsu.edu>) that was number one on the hit list. Department faculty and staff loved working with him, and his kindness and scientific achievements had the attention of the College Dean, University Provost and President alike. Felipe taught rapid students in genetics and cell biology, but made the greatest impression on those apprenticed in his lab. I have been especially touched by the students who kept in contact with

Felipe to the end, and now mourn his passing. To honor Felipe and his work with students, we have established a student scholarship in his memory. For those who wish to contribute, please see the box below for more details.

Felipe's work and his interactions with students, faculty and staff show what a remarkable impression a short but rewarding career can make.

Dr. Michael Goldman



**Felipe-Andres Ramirez-Weber
1964-2007**

Editor's Note: We've established a scholarship in Dr. Ramirez-Weber's memory and contributions can be made by check payable to "University Corporation at SFSU" (or "SFSU") with "in memory of FARW" (or "FARW") on the memo line. Mail to: FARW Scholarship, Department of Biology, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132-1722. To donate online, click on <https://www.applyweb.com/public/contribute?s=sfsuceng>, select "Biology" on the "I would like to support" drop down form, and type "FARW" in the comment box. The site will accept Visa or MasterCard. You should receive an immediate confirmation by email. Thank you.

YOUR LETTERS

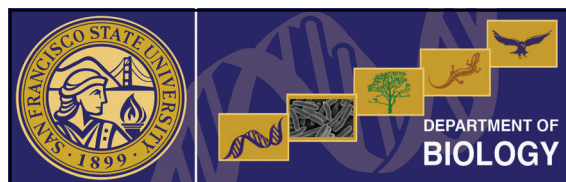
Should undergraduates be required to pass a bio-ethics course?

Again a nice glossy informative newsletter. Well done. On the bioethics course—how about a required but non-credit course? We might all agree on certain ethical questions on a standardized bioethics exam, but the answers may change as information expands. It might even be questionable to write exams or even grade discussions. Perhaps the need for this within the biology curriculum would be best met by charging all faculty with a responsibility to "air" bioethical issues within their courses.

Bill Bigler
(Ret) Professor, Biology

As Dr. Goldman said in his 'Word from the Chair,' nearly 300 professional biologists graduated this year. Professional biologists without some specified training in ethics, I don't think so! I'm sure that some ethical training is included in some or most courses, but we should codify the instruction. It doesn't need to be a specific course, and would be best, in my opinion, if integrated into existing courses.

Gregory A. Antipa
Professor, Biology



A New Logo

Love the logo. How about on a t-shirt?

Scott Mercer

Editor's Note: When we have t-shirts with the new logo available, we'll be sure to announce it in Bio News.

MICROORGANISMS WE LOVE TO EAT

Photos by Michael Fong

Each fall and spring, Biology Lecturer Terrye Light simulates an International Microbiology Symposium for her Microbiology and Public Health (BIOL 211) classes. Like other scientific meetings, participants wear nametags, mingle, even attend a pre-meeting mixer where they meet scientists they are collaborating with.

And, of course, they do what everyone



Spring 2007 BIOL 211 Class

does at a meeting, they shake hands. Terrye uses this practice to create a "synthetic epidemic." Before students shake each other's hand, they handle pieces of candy — one or two of which, unknown to the students, have been inoculated with *S. marcescens* which changes from no pigment to a red color when incubated at room temperature. After students shake hands, they place two fingers from the gloved hand they used onto an agar plate. The next class period they learn whether or not they have been contaminated with a "disease."

Students also consume foods that have associations with microorganisms including **sourdough bread** which gets its distinctive flavor and texture from a yeast, *Saccharomyces exiguus* and bacteria, *Lactobacilli*. The holes in **Swiss cheese** are generated by gas production from a microorganism called *Propionibacterium shermanii*. *Penicillium camembertii* causes skin to develop on **Brie and Camembert** surfaces. The blue veins in **Stilton and Roquefort** are produced by *Penicillium roqueforti*, a natural contaminant. Other foods include **dill pickles, olives, and luncheon meats**—all products that rely heavily on microorganisms. Beer and wine is for display only while students enjoy nonalcoholic sparkling cider.

"Students are aware of some of the foods that are made with yeast, but most are surprised at the number of bacteria they once thought dangerous are in safe and delicious foods."



Terrye Light (second from the right) with student participants.

Terrye, who has taught for Biology since 1999, has held the symposium for the last four years, and always finds it worthwhile. She is teaching General Microbiology Lab (BIOL 402) during fall, and can be contacted at:

tlight@sfsu.edu



Congratulations to our future scientific leaders!

PEOPLE IN THE NEWS

Dr. John Hafernik was elected to the Executive Committee of the Pacific Division of [American Association for the Advancement of Science](#).

[Why should we care if the mountain yellow-legged frog becomes extinct?](#) Dr. Vance Vredenburg (see page 5) works to save endangered amphibians. *USA Weekend*, September 30.

Biology lecturer, Jonathan Stern was named Alternate Chair of Research for the Scientific Advisory Committee for the Gulf of the Farallones Marine Sanctuary. Read more about Jonathan's work in [San Francisco State professor Jonathan Stern might be the most important whale researcher, but he'd be the last to let you know](#). *San Francisco Chronicle*, September 2.

Dr. Dennis Desjardin received the Distinguished Faculty Award for Excellence in Research sponsored by the San Francisco State Office of Academic Affairs.

Mentor and Microbiologist, Dr. Leticia Marquez-Magana is profiled at <http://justgarciahill.org/jghdocs/webarticleddl.asp?AID=339>

[Molecular characterization and cell-specific expression of an ion transport peptide in the tobacco hornworm, *Manduca sexta*](#). Students Anna Drexler, Marilyn Asuncion-Uchi, Myra Grace Dela Pena and Professor Megumi Fuse work with the tobacco hornworm. *Cell and Tissue Research*, Volume 329, Number 2. August 2007.

[NSF supports undergrad's research](#). Student Amy Rodelo studies tunicates at RTC. *SF State News*. July 3.

Michelle Roland (BS'88, Biology) was appointed chief of California's Office of AIDS for the Department of Public Health on July 1, 2007. For more information, <http://www.ebar.com/news/article.php?sec=news&article=1968>

2007 COMMENCEMENT

The Commencement Ceremony Committee held the department's first Commencement Ceremony on May 26. The event was attended by over 900 graduates, faculty, staff and volunteers. Speakers included College of Science and Engineering Dean Sheldon Axler, Biology Chair Dr. Michael Goldman (see below), keynote speaker Dr. Kenneth Fong (see below), graduate class speaker Diana Marina (see below), undergraduate class speaker Nora Branning, Biology Professors Nan Carnal, Zheng-Hui He, Robert Patterson, and Lily Chen.

Editor's Note: If you would like to volunteer your time or make a donation towards the 2008 Commencement, please contact bionews@sfsu.edu



Master of Ceremony Dr. Michael Goldman (right) awards Dr. Kenneth Fong (SFSU 2006 Alumnus of the Year, 1976 Biology graduate and keynote speaker) a Certificate of Appreciation.



College of Science and Engineering Academic Hood, and graduate class speaker Diana Marina (M.S., Cell and Molecular Biology)

The Department Welcomes



KAREN CROW-SANCHEZ

ANIMAL ECOLOGY AND EVOLUTION

"I am excited to be returning to coastal California."

Dr. Crow-Sanchez comes to SFSU from Yale University. She received her Ph.D. in Ecology and Evolutionary Biology from UC Santa Cruz in 2003. Dr. Crow-Sanchez's research interests include the molecular ecology of fishes, and the effects of gene duplication in the evolution of ray-finned fishes and vertebrates. She will teach Fisheries Biology (BIOL 570), Molecular Evolution (BIOL 862) and Principles of Ecology (BIOL 313). Dr. Crow-Sanchez can be contacted at crow@sfsu.edu

RAVINDER SEHGAL

MICROBIOLOGY

"I enjoy working in the Biology Department because of the diversity of the students, the excellence in teaching, and breadth of research."

Dr. Sehgal received his Ph.D. in Cell Biology from UC San Francisco in 1997. He first came to SFSU as a Postdoctoral Fellow in 2000, then became an Adjunct Professor in 2003. Dr. Sehgal's research focuses on the effects of deforestation on the prevalence of blood-borne pathogens in African rainforest birds, and on the effects of infectious diseases on migratory hawks. He is currently working on a grant from the NSF/NIH Ecology of Infectious Disease program. His most recent publications can be found in the Journal of Parasitology and Molecular Ecology. He has taught BIOL 478 (Ornithology) and BIOL 380 (Comparative Embryology), and plans to teach Emerging Infectious Diseases and Parasitology. Dr. Sehgal can be contacted at sehgal@sfsu.edu



CHRIS SMITH

BIOINFORMATICS

"I am excited to be a new professor in the diverse environment at SFSU where I can enhance my genome research with collaborators studying everything from field biology to computer science."

Dr. Smith's research interests include an informatics approach to the understanding of genes, and repeated DNA sequences in the *Drosophila* and other insect genomes. He received his Ph.D. in Biochemistry and Molecular Biology from UCSF in 2000. Dr. Smith is currently teaching Bioinformatics (BIOL 877) and Chromatin Structure (BIOL 861). He is also a visiting faculty member in the Genomics division of Lawrence Berkeley National Lab as a part of the *Drosophila* Heterochromatin Genome Project (www.dhgp.org). Dr. Smith can be contacted at smithcd@sfsu.edu



Five New Faculty



VANCE VREDENBURG ANIMAL ECOLOGY AND EVOLUTION

"Earning both my bachelors and Ph.D. degrees at public institutions in California, I am a strong believer in the public education system in this state and I am proud to join the team."

Dr. Vredenburg is assistant director and co-founder of AmphibiaWeb.org, an online bioinformatics project promoting science and conservation of the world's amphibians. He comes to SFSU from the UC Berkeley Department of Integrative Biology and Museum of Vertebrate Zoology. He received his Ph.D. in Integrative Biology from UC Berkeley in 2002. Dr. Vredenburg's research investigates the impacts of emerging infectious diseases, introduced predators, and habitat loss on threatened amphibians. Supported by a NSF Ecology of Infectious Diseases grant, he is researching the pathogen *Batrachochytrium dendrobatidis* which causes the amphibian disease chytridiomycosis which is associated with amphibian population declines and extinctions around the world. His focus is on threatened Sierran and southern mountain yellow-legged frogs (*Rana muscosa* and *Rana sierrae*). He will teach Ecology (BIOL 482) during Fall semesters, and plans to teach an amphibian conservation course in coming semesters. Dr. Vredenburg can be contacted at vancev@sfsu.edu



ANDY ZINK BEHAVIORAL ECOLOGY

"I have broad interests that span the entire field of biology, so I am excited to have colleagues who address a wide range of questions in their research. I'm also thrilled to join a University that truly values teaching, and where faculty have the opportunity to make important contributions in both the classroom and the laboratory."

Dr. Zink received his Ph.D. in Ecology and Evolutionary Biology from Cornell University in 2002 before moving to UC Davis as a USDA Post-doctoral Fellow. His research focuses on the evolution of social behavior in animals, combining mathematical modeling with laboratory and field experiments on social insects. He is currently co-teaching Introductory Biology (BIOL 240), and will be teaching Animal Behavior (BIOL 600) and Behavioral Ecology (BIOL 848) in Spring 2008. Dr. Zink can be contacted at zink@sfsu.edu



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LINDSEY CARR BY RAYNELLE RINO



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As an avid diver, Lindsey Carr spends much of her time in the San Francisco Bay investigating food web dynamics. Her research contributes to restoration techniques in restored and unrestored beds of eelgrass, *Zostera marina*. Knowing which species play important roles in the health of eelgrass beds not only provides clues into the system's ecology, but also gives Lindsey fundamental information needed in order to perform successful restoration techniques in this declining habitat.

As an undergraduate at UC Santa Barbara, Lindsey had the opportunity to work in coral reef systems in Tahiti. Now a SFSU Master's student, Lindsey works in [Dr. Katharyn Boyer's](#) lab at the [Romberg Tiburon Center for Environmental Studies](#) developing restoration techniques for the Bay's eelgrass beds. Lindsey's research aims to answer important ecological questions such as why eelgrass beds are declining, who are the participants in the eelgrass community, and how do they contribute to maintaining a productive habitat?

"The most important thing that I have learned is how to design, execute and run statistical tests on experiments."

Currently, she has found the community to consist of mostly invasive small animals called epifauna who graze on algae found on the surface of eelgrass blades. One interesting discovery she and others in the Boyer lab have made while diving in the beds was the unusual feeding behavior of an amphipod, *Amphithoe valida*. This amphipod, native to New England, had never been reported to consume eelgrass tissue, only the algae on the surface of the blades. It may be that an increase in epifauna limits this resource, and causes grazers to switch from ephiphytic algae to eelgrass plant tissue. Lindsey argues that this increase in



epifauna may be due to a decline in fish populations that would normally consume the epifauna, bringing the food chain into balance. One restoration technique involves transplanting whole eelgrass from a donor site into a restoration site; hence, epifaunal feeding behavior and trophic dynamics may be very important to restoration success.

Lindsey hopes to contribute baseline data on the

importance of fish and epifauna populations in the Bay that will inform future conservation and restoration efforts. She recently presented a poster at the [California Estuarine Research Society](#) conference at the [Bodega Marine Laboratory](#).

Lindsey will graduate in May 2008, and is currently applying to Ph.D. programs. She hopes to work in the Caribbean implementing coral reef restoration techniques.

Lindsey can be contacted at linseyac@gmail.com

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FRANK CIPRIANO, DIRECTOR CONSERVATION GENETICS LABORATORY

Dr. Frank Cipriano oversees the [Conservation Genetics Laboratory](#) (CGL) where molecular genetics equipment and computer analysis software support the research activities of 30-40 students, postdoctoral researchers and technicians. Scientists and students from the Romberg Tiburon Center, California Academy of Sciences, other California State University campuses and outside the U.S. come to the CGL (Hensill Hall Rooms 442-445) to study population structure, systematics, and conservation genetics of plants, animals and fungi.



Dr. Frank Cipriano leaving Heron Island, Great Barrier Reef, Australia

Frank first became interested in animal behavior at a very young age, and, while in high school, went to hear Jane Goodall speak. He enrolled as a general biology major at San Jose State, but switched to marine biology after taking an invertebrate zoology course taught by Steve Webster—his high school scuba diving instructor (and later co-founder of the Monterey Bay Aquarium). While studying phytoplankton primary productivity as a Master's student in marine sciences at the [Moss Landing Marine Laboratories](#) (MLML), he assisted with the recovery of beach-cast and stranded marine mammals. After completing his MLML MSMS(!), Frank designed a research project on the ecology of dusky dolphins (one of the most acrobatic dolphin species), and worked his way to New Zealand aboard a container ship. The study formed the basis for Frank's Ph.D. dissertation (University of Arizona, 1992).

"I joined the department in 1999 as the CGL Director because it was an opportunity to develop a core molecular facility to support the work of graduate students, department faculty and my own research, and also it was a great way to expand the molecular skills in my toolkit."

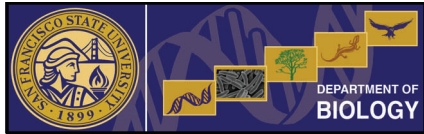
When not overseeing the CGL or teaching BIOL 818, Molecular Techniques in Evolution and Ecology, Frank collaborates with dolphin, plant, copepod, bacteria, cyanobacteria, even mummy researchers. He also performs surveys to document the species identity and pollutant loads of whale and dolphin products sold in Japanese and Korean markets. Frank continues to develop molecular techniques for documenting the occurrence of endangered species in commercial markets. His future plans include spending more time working on the systematics, population biology and biogeography of dolphins and porpoises. To contact Frank, email cipriano@sfsu.edu

MEET THE STAFF

A NEW LOOK FOR HENSILL HALL

Thirty-seven glass-enclosed wall display cases were installed in Hensill Hall last summer. The 5th floor department showcase (across from the elevators) features research photos submitted by faculty, students or staff. (Photos are changed monthly.) Other cases are being used to highlight the exceptional work of the department's students. Stop by when you are in the neighborhood and check them out!

Editor's Note: Corporate and private sponsors are being sought for each of the boards. Sponsors' names will be identified on a small notice posted on the board. For more information contact: bionews@sfsu.edu



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A Newsletter for Alumni and Friends of San Francisco State University's Department of Biology

Bio News is published two times a year and is distributed to more than 3000 alumni and friends of the department.

We want to hear from you! Have you moved, changed jobs, received an award or have other news? Email your news, feedback, letters to the Editor (may be edited for length and clarity), photos, cartoons, crossword puzzles, or the email address of someone you think would like to receive this newsletter to bionews@sfsu.edu. (Please include your degree, and year of graduation.)

New! Each week, the Department sends out an electronic "Bio Bulletin" which announces Department, College and University news, upcoming seminars and workshops, scholarship, grant, research, employment and internship opportunities. If you would like to receive the weekly "Bio Bulletin" email bionews@sfsu.edu

**SFSU's Department of Biology:
Protecting Human Health and the Biosphere**