

BioNews

Fall 2014 Issue 17

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DEPARTMENT OF BIOLOGY

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*Advancing Global Health
and the Biosphere
Educating Generations of
Scientists,
Health Professionals,
Teachers and Citizens*

A Letter to Alumni & Friends from Biology Department Chair

Mike Goldman



A team led by our own Professor Leti Marquez-Magana, and including Associate Chair Carmen Domingo, just last month obtained \$17 million in funding from the National Institutes of Health for 'Building Infrastructure Leading to Diversity.' This effort will involve five SF State Departments (Biology, Math, Chemistry/Biochemistry, Geography & Environment and Psychology) in addition to a partnership with the University of California, San Francisco. Says Dr. Marquez-Magana, who has dedicated most of her career to this issue, "We need diversity because we need multiple perspectives in science, we need the trust of communities, we need to train the next generation of scientists." The program fits nicely with other efforts at institutional transformation, such as the Howard Hughes Medical Institute's Faculty Enhancement through Scientific Teaching, led by Professors Kimberly Tanner and Domingo.

I'm excited to welcome three new faculty members (see page 3). Dr. Pleuni Pennings, most recently from Stanford, joins us in bioinformatics, and Dr. Scott Simonin joins us as a plant physiologist and ecologist from the University of Sydney. We're also very fortunate to have Dr. Karina Nielsen, a marine biologist from Sonoma State University, who joined us this fall as Professor of Biology and Director of the Romberg Tiburon Center for Environmental Studies.

All of our programs and successes are built on the shoulders of giants, and I want to mention several of them who have left us recently (see pages 6-7). Veteran botanist James (Bob) Sweeney lived to nearly 100, retiring in the Sierra air. Bill Bigler, long-time Director of our Center for Biomedical Laboratory Science which merged with the Department of Biology in 2000, had legions of admirers among the laboratorians he trained. He passed away after a battle with cancer. Leslie Tobler had an amazing research career with the blood centers, and spent her Fridays teaching hematology for us. She passed away just shy of the end of the spring 2014 semester. Anthony (Tony) Catena and Remo Morelli had stunningly parallel careers in microbiology, joining us at the same time, enjoying the admiration of generations of students, retiring too young and taken from us far too soon.

We want to hear what you, our alumni and friends, are doing right now, and what you remember most about your time as a Biology major at SF State. We've got a new Facebook page (SFSU Biology Department) and hope you will visit us often.

Our heated contest for the most funds donated to Biology in memory of or in honor of a faculty member continues. When making a gift, please remember to write "Biology—use where the need is greatest" and "in honor of...." We depend on and thank you for your continued interest and support.



SF STATE

A TALE OF TWO GOALS

DR. BLAKE RIGGS joined the Biology faculty as an Assistant Professor of Cell and Molecular Biology in 2010 after earning a Ph.D. in Molecular, Cell and Developmental Biology from UC Santa Cruz. At SF State, he has two goals: 1) identify specific treatment strategies for cancer, and improve current treatment programs, and 2) recruit and retain successful minority Biology majors.

Goal one is his research focus on cancer. “Currently cancer treatments mainly rely on affecting the physiology of a tumor to promote cell death rather than investigating the genetic basis. We are interested in identifying specific interactions between small molecule anti-cancer drugs and mutations commonly found in cancers. Our plan is to develop small molecule libraries for identification of compounds that slow or reduce tumor growth.” He along with student researchers are examining the synergy between anti-cancer agents and known oncogenes using the fruit fly *Drosophila melanogaster* as a model for tumorigenesis (the process through which normal cells are transformed into cancer cells). “Many current drug screening efforts rely on examination of mouse tumor models which are not genetically tractable, extremely costly and carry a high failure rate. *Drosophila* share many similarities with humans including 75% of disease-causing genes.”

A grant from the American Society for Cell Biology’s Minority Affairs Committee is helping Dr. Riggs achieve his second goal by enabling him to launch the Biology Undergraduate Mentor Program (BUMP) which partners successful upper division biology majors with introductory biology majors. They meet once a week to discuss their classes, answer questions about the major and careers, and provide information on scholarships and research opportunities within the department. “SF State is one of the most diverse institutions in the nation, but our recruitment and retention of African American and Native American biology majors is poor. As an African American scientist my success in higher education was due to the cohort of students of color in my classes and role models.” During its pilot year four pioneering BUMP Mentors: **Chelsie Anderson, Julian Bustamante, Maria Jose Pastor-Infantas** and **Diego Rivera Gelsinger** were selected from a strong candidate pool.

To learn more about Dr. Riggs and his research, visit: http://userwww.sfsu.edu/riggs/Riggs_web/Site/Home.html



“I want to be instrumental in the development of a diverse generation of the Science, Technology, Engineering, and Math (STEM) workforce.”



Graduate Ecology, Evolution & Conservation Biology major **Shayle Matsuda** is the 2014 recipient of the CSU Trustees Award — the highest student distinction within the CSU system — for his extraordinary public service. Shayle has worked with minority and low-income youth for many years, and now runs a Project Group in the Careers in Science Program at the California Academy of Sciences where he is a graduate assistant in the Invertebrate Zoology and Geology departments.

Shayle researches nudibranchs, specifically the phylogeny of *Glossodoris*, in Dr. Terrence Gosliner’s lab where he uses molecular and morphological data to untangle the evolutionary relationships among these clades (groups). He is interested in color pattern and shape, and has discovered a cryptic species complex in one of the taxa.

Shayle will graduate in Spring 2015, and is applying to Ph.D. programs where he can research the effects of climate change on corals. “I want to study gene response to heat stress and ocean acidification to have an impact on strategic coral transplanting efforts and overall reef health.” To learn more about his work with youth and his research, email him at: smatusda@calacademy.org



DR. KEVIN SIMONIN

Dr. Kevin Simonin joined the Biology Faculty as Assistant Professor in Plant Physiology and Ecology this Fall. Before coming to SF State, he earned his Ph.D. in Integrative Biology from UC Berkeley (2009), and was a faculty member in the Department of Environmental Science at the University of Sydney, Australia. Dr. Simonin's research focuses on plant water use strategies in response to changing climates. He has co-authored articles for *New Phytologist*, *Plant Cell and Environmental Tree Physiology*, *Agricultural and Forest Meteorology* and *Oecologia*.



"I believe that in a time of rapid environmental change, I am charged with the task of teaching basic biology, ecology and earth system processes to future policy makers and voters."

To learn more about Dr. Simonin's research and lab, visit: <http://kevinsimonin.weebly.com>



DR. KARINA NIELSEN

Dr. Karina Nielsen is the new Director of the Romberg Tiburon Center (RTC) where she will oversee research, fundraising, outreach and operations. Before coming to SF State, Dr. Nielsen earned a Ph.D. from Oregon State University in 1998, and was a Professor of Biology at Sonoma State University. Her research focuses on the ecology and conservation of coastal ecosystems. She serves as the co-chair of the California Ocean Protection Council's Science Advisory Team, and is a member of the Governing Council for the Central and Northern California Ocean Observing System.

"The Romberg Tiburon Center is one of the hidden gems of SFSU and the Bay Area. It is a site of regionally historic significance whose story is linked to our understanding of marine ecosystems and how humans and changing climate affect nature and human society. I look forward to building an integrative center that works across disciplinary boundaries to find creative and sustainable solutions to the environmental problems confronting the Bay, and to continue our leadership in scientific discovery and excellence in educating the next generation of marine and coastal researchers."



DR. PLEUNI PLENNIGS

Dr. Pleuni Pennings joined the Biology Faculty as an Assistant Professor in Bioinformatics this Fall. Before coming to SF State, she earned a Ph.D. in Evolutionary Biology from Ludwig Maximilian's University in Munich, Germany (2006), and was a Postdoctoral Fellow at Stanford University. Her research focuses on the evolution of drug resistance in HIV. In addition to co-authoring numerous papers, she has received awards for her videos including first prize for "Why do Slave Ants Kill Slavemakers?" and a prize for best educational video for the web "Evolution Before Our Eyes." In 2008, she was selected for a national German Think Tank consisting of 100 people under the age of 35.

"The goal of my research is to increase our understanding of adaptation in natural populations and in pathogens, so that ultimately we know how to halt adaptation such as drug resistance or how to speed up adaptation such as when adaptation allows a rare species to adapt to a changing climate. As a researcher, I see possibilities in the Department of Biology for collaborations with evolutionary biologists, ecologists and virologists. As a teacher and mentor, I want to create research opportunities where students' work will lead to concrete results."

For more information about Dr. Pennings, visit: <http://pleunipennings.wordpress.com> or email her at: pennings@sfsu.edu



SF STATE



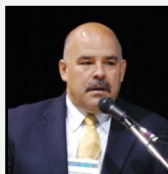
HIBBA ASHRAF

(MS Physiology 2014) is a Biology Instructor at Bakersfield Community College.



LISA BHATTACHARYYA

(MS Ecology, Evolution & Conservation Biology 2013) is an Operations Associate for the National Audubon Society.



ESTEBAN BURCHARD

(BS Cell & Molecular Biology 1990) is a pulmonologist at UCSF. His research on how differences in lung function track with Mexican genetic variation was featured in AAAS journal *Science*.



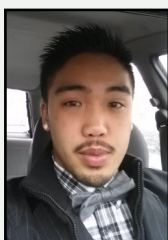
REBECCA GARCIA

(BS Cell & Molecular Biology, 2008; MS Cell & Molecular Biology 2010) is a Kindergartener teacher at the San Francisco Day School, and is pursuing a combined credential and Master's in Education through the Bay Area Teacher Training Institute Program.



BRIGETTE JONG

(BS Cell & Molecular Biology 2013) was awarded a National Science Foundation's Graduate Research Fellowship.



JON-THOMAS LEE

(BS Physiology 2014) is Project Director of UCSF's Emotion, Health and Psychophysiology Lab.



KHOUANCY SOUVONG OAKGROVE

(MS Microbiology 2013) co-authored "Distribution, Diversity and Drivers of Blood-Borne Parasite Co-Infections in Alaskan Bird Populations" published in the *International Journal for Parasitology*.



KRISTINE OKIMURA

(MS Marine Biology 2013) is a SF State Oceanography Lecturer.

Gary Williams

MA Marine Biology 1975

Curator

Invertebrate Zoology

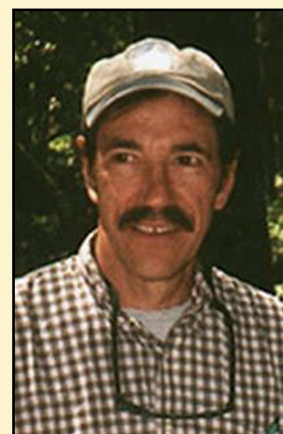
California Academy

of Sciences

Research Professor

Department of Biology

SF State



What are your research interests?

My research interests include the systematics and evolutionary biology of soft corals, gorgonians, and pennatulaceans (sea pens) — a group of corals characterized by having eight feathery tentacles surrounding the mouth of each polyp. These are some of the most beautiful and morphologically diverse animals in the world's oceans. Due to the paucity of good characters and the great phenotypic variability of species, octocoral systematics has traditionally been difficult and disputatious — partly explaining why there is a corresponding paucity of octocoral systematists! Soft corals are most abundant on shallow reef flats, while gorgonians are more abundant on slopes, walls, and rocky outcrops in a wide depth range. Sea pens are encountered at all depths and are often important constituents of the ocean floor. My field research program is currently focused on two bathymetrically (*ocean depth*) opposite regions of the world's oceans: coral reefs of the tropical western Pacific (the Philippines, Melanesia, and Micronesia), and the deep-sea benthos (particularly the west coast of North America).

What professional achievements are you most proud of?

I have discovered, named, and described 20 new genera and over 100 new species of octocoral cnidarians as well as a few opisthobranch gastropods.

What do you remember about your time at SF State?

I was most fortunate to have my M.A. thesis committee composed of three eminent biology professors: Robert Beeman and Margaret Bradbury from SF State and James Nybakken from Moss Landing Marine Laboratories.

To learn more about Dr. Williams' octocoral research, visit: http://researcharchive.calacademy.org/research/izg/orc_home.html



James R. Garey

BA Marine Biology 1977

MA Physiology 1979

**Chair and Professor
Department of
Cell Biology,
Microbiology &
Molecular Biology
University of
South Florida, Tampa**

What are your research interests?

My research has centered around molecular phylogenetics, and I was a co-discoverer of Ecdysozoa, the clade of molting animals. My research now encompasses the geology, hydrology and molecular biogeochemistry of coastal underwater cave systems in Florida. We are exploring the role of submarine springs in the formation and ecology of near-shore estuaries in the Gulf of Mexico's coastal karst environments. (*Karst is a geological term for a landscape dominated by limestone formations, and accounts for about 25% of landmass worldwide.*)

What professional achievements are you most proud of?

While a graduate student at SF State, I received an outstanding graduate student award. In 2012, I was elected a Fellow of the American Association for the Advancement of Science, and this May I was elected a Fellow of the Linnaean Society of London.

What do you remember about your time at SF State?

I paid my way through college working for the San Francisco Maritime Museum and lived aboard the sailing vessel Balclutha that is now at Aquatic Park.

The Biology faculty who most inspired me were Joe Hall whose excellent Natural History of the Vertebrates course motivated me to continue in Biology when I was ready to quit college after being on academic probation for my entire first year; Margaret Bradbury, who was my advisor through my time at SFSU; and Bob Beeman, whose challenging invertebrate zoology course instilled the knowledge and curiosity that led me to study the evolution of the Metazoa (multicellular animals) throughout my career.

Share your academic and professional news with other Biology alums. Email: silver@sfsu.edu

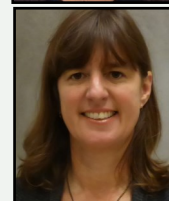
JODI PANDAY

(BS Physiology 2013) is a Biology teacher at George Washington High School in San Francisco.



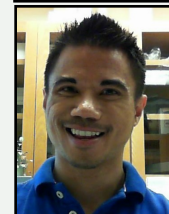
CHRISTINA PIOTROWSKI

(MS Ecology & Systematic Biology 2007) is the Invertebrate Zoology Collections Manager at the California Academy of Sciences.



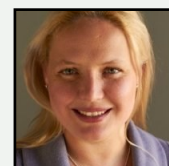
ARMBIEN SABILLO

(BS Physiology 2012) was awarded a National Science Foundation Graduate Research Fellowship.



SHANNON SEABERG

(BS Zoology 2001) is a Global Project Manager in the late stage clinical group at Genentech.



RILEY SMITH

(BS Ecology 2013) is in a Ph.D. program at Northern Arizona University where she is studying amphibian genetic biomarkers related to contaminants in aquatic ecosystems.



AI-MAN AMY TANG

(MS Cell & Molecular Biology 2008) is a Lab Manager in UCSF's Pathology Department.



BIOLOGY ALUMNI CELEBRATE EARTH DAY



Panelists (L-R): Drs. Jose de la Torre, John Hafernik, Gretchen LeBuhn, Leticia Marquez-Magana, Blake Riggs and Ravinder Sehgal (Photo by Pablo Platon.)

On April 22, 2014, the Department of Biology held an Earth Day Celebration and second annual Biology Alumni event. This free event featured a viewing of the documentary "Living Downstream," a panel discussion "The Science of Our Changing Environment" and reception. To be notified for our next free alumni event, email: silver@sfsu.edu



NOTABLE ALUMNI

DEPARTMENT OF BIOLOGY

**DR. WILLIAM BIGLER****1937-2014****Professor Emeritus William Bigler**

passed away on February 23. Before coming to SF State, Dr. Bigler earned a Ph.D. in Biochemistry from the University of Colorado, Boulder, and was an Assistant Professor at the Rochester Institute of Technology (New York).

Dr. Bigler served as Director of SF State's Center for Advanced Medical Technology (later renamed the Center for Biomedical Laboratory Science) from 1981-2003.

"Dr. Bigler was devoted to the Center and its students," said Nina Hagiwara, his long-time administrative assistant. Another long-time administrative assistant Colleen Francis said, "What I remember most about Dr. Bigler was his 'open door' policy. He was always available to offer advice and help. He wanted everyone to succeed."

Biology Professor Lily Chen said that "Bill welcomed all students regardless of age, gender and race. And, he was a champion of clinical science education and professions."

Dr. Bigler served on the California Department of Health Services Committee which developed standards of education and clinical training for clinical laboratory scientists. He was a WHO Consultant for a clinical laboratory quality assurance program in Shanghai, China. As a Fulbright Scholar, he assisted in a clinical laboratory science program at Debrecen Medical University in Hungary in 2001.

Dr. Bigler also received numerous awards including an 'Outstanding Contributions to Clinical Chemistry Education' award from the American Association for Clinical Chemistry.

"Bill's intense scientific curiosity never lessened," said Professor Emerita Linda Blackwood. "He was a true science nerd, and proud of it."

Dr. Bigler was also a long-time bird watcher who pursued bird sightings all over the world eventually recording over 1200 species sighted.

On April 10, California Assembly member Kevin Mullin presented a resolution to the State Assembly memorializing Dr. Bigler's illustrious professional and civic achievements.

**DR.
ANTHONY CATENA**
1941-2014**Professor Emeritus Anthony (Tony)**

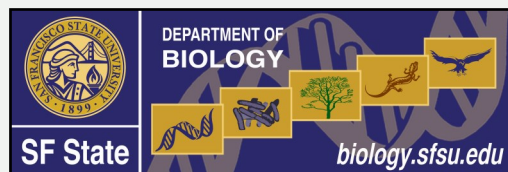
Catena passed away on June 7 at the age of 73. Dr. Catena earned his Ph.D. in 1968 from the University of Illinois. For thirty years he taught microbiology at SF State. Dr. Catena retired in 2001.

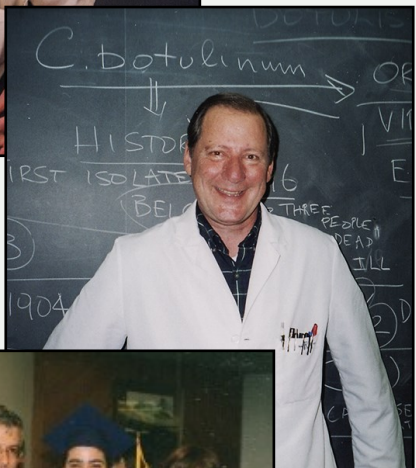
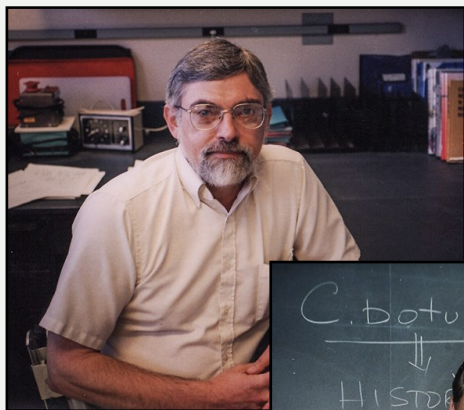
**DR.
JAMES SWEENEY****Professor Emeritus James (Bob) Sweeney**

passed away on March 29 at the age of 98. An SF State alumnus (BA Biology 1941), Dr. Sweeney earned a Ph.D. in Botany from UC Berkeley. He joined the Biology faculty in 1954, taught Plant Taxonomy and Plant Ecology and researched fire ecology. He served as the President of the California Botanical Society from 1959-1960. Dr. Sweeney retired from SF State in 1981.

"Bob was a popular teacher of plant ecology and systematics, beloved by his students for taking them into the field and showing them California's natural world first-hand, a critical approach to training future stewards of the environment."

— Dr. Bob Patterson
Professor of Biology (Botany)





Do you have memory of a Biology professor, lecturer or staff you want to share with other Biology alumni? Email: silver@sfsu.edu. To make an "In Memory" donation, visit: <http://biology.sfsu.edu> and click on the "Make a Difference" link. (Please write the name on the person you are making the donation for in the "comments" box.)

DR. REMO MORELLI 1941-2014



Professor Emeritus Remo Morelli, passed away on April 22, 2014 at the age of 72. Dr. Morelli earned a Ph.D. in microbiology from Stanford University and taught at SF State for 34 years. Gaetano (Tom) Vasta (B.A. Biology 1964) remembers Dr. Morelli's "boisterous, hearty laugh. He always had a big smile on his face. To put it simply, he was a good guy."

"Dr. Morelli was a much-loved Professor of Microbiology whose joy of science touched both students and colleagues."

— Dr. Michael Goldman
Chair, Department of Biology

DR. LESLIE TOBLER



Dr. Leslie Tobler passed away in April. She taught BIOL 625: Hematology at SF State for more than twenty years. Initially trained as a medical technologist at the Kantonsspital in St. Gallen, Switzerland, Dr. Tobler earned a Dr. P.H. in medical virology and immunology from UC Berkeley in 1981, and went on to complete post-doctoral fellowships at UCLA Medical Center and UCSF. She was a Senior Scientist at the Blood Systems Research Institute where she oversaw the Viral Reference Laboratory and Repository Core. Her research interests were in HIV-1, Hepatitis C virus and West Nile virus infections in blood donors. Dr. Tobler authored and co-authored over 30 publications.

"Dr. Tobler was a passionate and dedicated teacher; she was a true inspiration to many young minds."

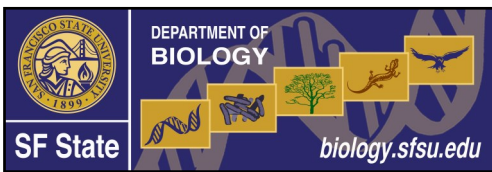
— Dr. Lily Chen
Professor of Biology



SF STATE

IN MEMORY

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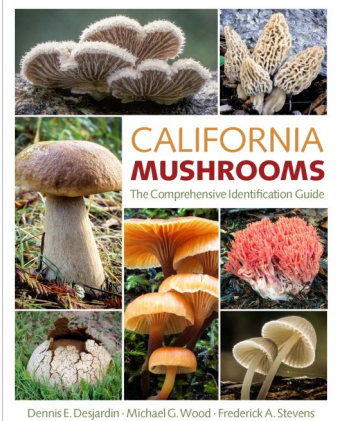
San Francisco, CA

Permit #7741

NEW FACULTY PUBLICATION



SF State Biology Professor and Director of the Harry D. Thiers Herbarium, **Dr. Dennis Desjardin**, has researched the diversity of fleshy fungi from under-explored tropical habitats worldwide since 1990. Now, he has turned his attention to local fungi with his newest publication *California Mushrooms: The Comprehensive Identification Guide* published by Timber Press. This field guide treats over 1100 species and includes complete descriptions for 650 species and over 750 color photos. *California Mushrooms* is available in bookstores and through Amazon.com



LOOKING BACK: SF STATE & ELEPHANT TRAINS

Submitted by **James Garey** (BA Marine Biology 1977; MS Physiology 1979)

In the early 1970s, students complained that it was difficult to walk uphill from the parking garage to the center of campus, so SF State President Dr. Samuel (S.I.) Hayakawa borrowed some surplus people movers from the SF Zoo. These were brightly colored little trains on regular wheels with the engine part molded in the shape of an elephant. The cars behind the engine were molded into various other zoo animal shapes.

President Hayakawa was such a feisty character with his multicolored tam-o-shanter, perfect for the times! This photo (right) shows him driving an elephant train when the campus first started using them in 1971 — which was also my first year at SFSU. He got quite a bit of publicity for himself and SFSU at the time. It was nice to have some light-heartedness in the midst of the war protests that were going on.

