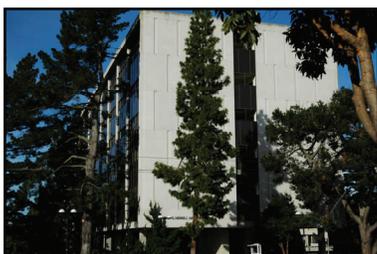


Department of Biology San Francisco State University

BioNews

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Hensill Hall

Home to SF State's
Department of Biology
Photo by Justin Chan

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A Word from the Chair

Dear Alumni and Friends:

This is the time of year when things are abuzz in the Department. We are preparing for our 5th annual Baccalaureate & Masters Recognition Ceremony where we congratulate and recognize the accomplishments of the Class of 2011. While classroom and laboratories continue at their feverish pace, we prepare for record attendance at our annual fundraiser *Personalized Medicine 4.0: Pharmacogenomics & Consumer Genetic Testing* (<http://personalizedmedicine.sfsu.edu>) on May 26 at the South San Francisco Convention Center, celebrating our innovative new academic and industry partnership with South City.

One of the highlights of this issue is an account of the work of Professor (and Alumnus) Dennis Desjardin whose work on novel mycological specimens has attracted international attention both in the news and in the professional community. (See page 4.) Dr. Desjardin developed his passion for his work in the laboratory of the beloved Professor Emeritus Harry D. Thiers for whom our outstanding Herbarium is named. (See page 5.) These two generations of stunning achievements are but a small part of the excitement in every area of biology here at SF State.

You are all well aware of California's serious budget deficit, and the consequences it is having for the University's mission to provide accessible, quality education for the State's diverse population. We in Biology bear much of SF State's obligations to students as our major continues to be in high demand. We have nearly 1,800 undergraduate majors right now, and more than 200 graduate students.

We as biologists also have an obligation unprecedented in its importance: we must provide the next generation of scientists, health care professionals and teachers to a world that is more dependent on expertise in all aspects of biological science to contend with our ever-changing planet. Moreover, we provide the talent for California's growing sustainability and biotechnology industries' workforce.

Now is a time when we crucially need you, our alumni, friends, current and former faculty and staff. Your accomplishments are the lifeblood of our Department. We've had many generous gifts (see page 2) and our students, faculty and staff are tremendously grateful. We are counting on you to help us enhance our program in these very difficult times in higher education. Send us what you can afford in honor of your friends, colleagues or favorite teachers. Visit us or call. Write to us and tell us what's happening in your life.



Mike Goldman


Thank You for Supporting Education

**Our heartfelt thanks goes
to the following
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whose generous gifts
funded inspiration,
innovation, creativity,
exploration, vision and
dreams in 2010.**

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IN MEMORY

Margaret Bradbury

1927-2010

Talented Artist, Dedicated Ichthyologist, Superb Educator



Margaret G. Bradbury, Professor Emerita, died in Pacific Grove, California on October 9, 2010.

Dr. Bradbury began her scientific career as a Staff Artist in the Department of Zoology at the Chicago Natural History Museum (now Field Museum) while attending Roosevelt College. She received her B.A. in Zoology in 1955.

After graduation, she entered the doctoral program at Stanford University, and worked with Dr. Rolf Bolin at Hopkins Marine Station in Pacific Grove. There, Margaret formed lifelong friendships with many fellow students who later became leaders in marine biology.

Dr. Bradbury received her Ph.D. in Biological Sciences in 1962, and joined SF State's Department of Biology faculty in 1963. She taught Ichthyology, Biology of Fishes, Comparative Vertebrate Anatomy,

History of Biology, and Evolution. "One of her notable contributions came just before her retirement," recalls Professor Emeritus Dr. Ralph Larson, "when the Biology Department switched from a Zoology/Botany introductory sequence for majors to an integrated one-year, two-semester course. She served on the committee that took charge of developing the second-semester course which focused on evolution, the diversity of life and ecology."

Dr. Bradbury led many class trips along the California coast from Big Sur to Mendocino. Former College of Science and Engineering Dean Dr. James Kelley remembers that she "never questioned the value of field research, in fact she was happiest when she was doing just that."

Her Ph.D. dissertation focused on the batfish family *Ogcocephalidae* — a group she continued to study well into her retirement years. According to Dr. Theodore Pietsch in a 1967 paper "The Genera of Batfishes" Dr. Bradbury "examined the group as a whole, precisely defining the limits of the family and each of the nine genera (then recognized) providing a list of species for each genus and a phylogenetic analysis. In 1980, Dr. Bradbury produced a detailed and beautifully illustrated revision of the new world batfish genus *Ogcocephalus* in which she recognized 12 species, describing five as new to science. Equally impressive revisions of the allied genera *Halieutopsis* containing

descriptions of four new species and *Dibranchus* with descriptions of a new genus and four new species appeared in 1988 and 1999, respectively. In total, Dr. Bradbury described 16 new species and one new genus."

"Margaret was a wonderful ichthyologist who marveled at the fishes she studied and admired."

- Dr. Gregor Caillet, MLML

Dr. Bradbury was a Research Associate and Fellow of the California Academy of Sciences where she carried out much of her research. She was both a member and served as Chair of the Moss Landing Marine Laboratories (MLML) Governing Board, and after her retirement, the Board of the Friends of MLML.

Dr. Bradbury retired from SF State in 1994, but her legacy lives on through the many students who benefitted from her guidance, support, encouragement and mentorship—and by her work in systematics which was exemplary, careful and precise, setting high standards for others to follow.

The Editor thanks Dr. Tomio Iwamoto, Curator and Chair, Department of Ichthyology, California Academy of Science for his contribution to this article.

To make a donation in memory of Dr. Bradbury, visit <http://biology.sfsu.edu> and click on the "Make a Difference" link. Please select "Biology Department" in the drop down list and write "In Memory of Dr. Margaret Bradbury" in the "Comments" box. Thank you.



DENNIS DESJARDIN

MUSHROOM HUNTER EXTRAORDINAIRE

Dennis Desjardin is the Indiana Jones of the fungal discovery world. He has research projects in West Africa (São Tome and Príncipe), Brazil, Micronesia, Thailand, Indonesia, Malaysia, and the Hawaiian Islands. In Thailand, he helped establish the Mushroom Research Centre which includes a laboratory, restaurant, visitors' lodge, student chalets, and a mushroom-shaped swimming pool. His planning for research expeditions can involve years of negotiating with foreign governments and universities, often promising host nations microscopes, computers, and other equipment, training local students and providing duplicate specimens of every fungus his team removes from the countryside.

Professor Desjardin learned how to identify a trio of edible fungi species (champignons, porcini and chanterelles) at the age three from his parents and Swiss grandparents who routinely gathered mushrooms when they lived in Switzerland. An alumnus of SF State's Department of Biology, he earned a BS in Biology in 1983, and a M.A. in Ecology and Systematic Biology in 1985. He received his Ph.D. in 1989 at the University of Tennessee, and taught at Oberlin College before joining the Biology faculty in 1990. In addition to teaching and researching mushrooms worldwide, he also finds the time to serve as Director and Curator of the Harry D. Thiers Herbarium (see page 5) collection of 140,000 preserved specimens of plants and fungi.

Dr. Desjardin's research focuses

on discovering and documenting the diversity of fleshy fungi from under-explored tropical habitats worldwide. He wants to learn which species are present, their function in the ecosystem, who they are related to, how they got there, where they came from, and their uses by indigenous people.

Dr. Desjardin has published 105 scientific papers in which he has described over 220 new species of mushrooms. In 2009, he discovered seven new glow-in-the-dark mushroom species, including *Mycena luxaeterna* (eternal

light) (see page 5) and *Mycena luxperpetua* (perpetual light) increasing the number of known luminescent fungi species from 64 to 71.

The secret to his success is simple: he is knowledgeable about mushrooms and he goes to places no other mycologists have been. In 1998, Dr.

Desjardin was awarded the Alexopoulos Prize from the Mycological Society of America for outstanding research and the Weston Award for outstanding teaching.

"Although edible and pharmaceutical mushrooms have become big business, the numbers of biologists who specialize in fungi are becoming less and less," said Dr. Desjardin who encourages the education and training of young taxonomists around the world. To facilitate this goal, he is an Adjunct or Honorary Professor at five universities in Southeast Asia. Dr. Desjardin can be contacted at: ded@sfsu.edu

"The natural roles of fungi are diverse—they decompose dead logs, form symbiotic relationships with plant roots to take up water and nutrients and repel disease. But, much of their extraordinary powers probably are still unknown"



Spongiforma thailandica
Photo by
D.E. Desjardin



Marasmius tageticolor (left)
Photo by
D. Jean Lodge



Phallus drewesii (right)
Photo by
Brian Perry

THE HARRY D. THIERS HERBARIUM

Photo by Justin Chan



Located in Hensill Hall Room 429 is the Harry D. Thiers Herbarium. This facility houses over 40,000 specimens with over 85,000 specimens of fleshy fungi — the largest and most important collection of fleshy fungi west of the Mississippi.

The Herbarium began in the early 1960s with a few herbarium cases in the office of Dr. Harry Thiers, a mycologist who joined the San Francisco State College Biology faculty in 1959. Dr. Thiers earned a B.A. from Schreiner Institute (Texas) in 1941 and a M.A. from the University of Texas at Austin (1947) where he was first

introduced to mycology. After receiving his Ph.D. from the University of Michigan (1956), he moved to California where the knowledge of California's agarics was poorly understood.

Dr. Thiers' research in California, North America, and trips abroad led to his publication of over 150 new species of fungi, eight published books, and 50 papers in leading scientific journals. He became recognized worldwide as the leading authority on boletes and as an innovator in secotioid fungi research. One of his greatest joys was training students, and he supervised 36 master's degree theses — all of which contributed in some way to the documentation of the cryptogamic flora of California. He received numerous honors including the Mycological Society of America's Distinguished Mycologist Award and the Fellows Medal from the California Academy of Sciences — its highest award and the first ever presented to a mycologist. He was also honored by fourteen different taxa named after him including the genus *Thiersia*.

Dr. Thiers believed that properly named and preserved specimens for groups of organisms that are poorly documented in the scientific literature are essential reference tools for teaching and research. He was so dedicated to his collection that he took type specimens home for protection during the 1960s student riots at SF State. First started as a few herbarium cases in a faculty office, the Harry D. Thiers Herbarium has grown today to be one of California's national treasures.



Dr. Harry D. Thiers
(1919-2000)

To donate in memory of Dr. Thiers and/or in support of the Herbarium, please visit <http://biology.sfsu.edu>, and click on the "Make a Difference" link. Select "Biology Department" and please write "In Memory of Dr. Harry Thiers." Thank you!



Mycena luxaeterna

Photos by
Cassius Stevani



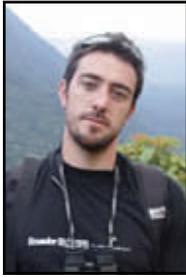
**Advancing
Global Health and
the Biosphere:**

**Educating
Generations of
Scientists,
Health
Professionals,
Teachers
and Citizens**



ALUMNI NEWS

Dr. Kristin Byrd (*MA Ecology and Systematic Biology 1998*) is a physical scientist with the U.S. Geological Survey working on the Puget Sound Ecosystem Portfolio Model that evaluates how future urban growth may alter nearshore ecosystems.



Dr. Jaime Chaves (*MA Ecology and Systematic Biology 2004*) received his Ph.D. from the UC Los Angeles in 2010. He is a Postdoctoral Fellow at the Marjorie Barrick Museum of Natural History (Nevada) and a Senior Research Fellow at UCLA's Center for Tropical Research.

Dr. Andrew Kangas (*BA Biology 1969*) received his Ph.D. and ND degrees in Naturopathy from Clayton College of Natural Health in 2010, and owns a stem cell research lab in San Francisco where he is working on a cure for TB and malaria.



Vanja Krneta-Stankic (*M.S. Cell and Molecular Biology 2010*) is a PhD candidate in Developmental Biology in the lab of noble-laureate Dr. Christiane Nüsslein-Volhard at the Max Planck Institute, Germany.



Dr. Joshua McDill (*MA Ecology and Systematic Biology 2001*) received his Ph.D. from the University of Texas in 2008, and is a post-doctoral fellow at the University of Edmonton in Alberta.



Erica Swinney (*MA Ecology and Systematic Biology 2004*) is the Director of Career & Community Programs at Austin Polytechnical Academy which prepares high school students for advanced manufacturing careers. She also works with community leaders to promote green economic development.



Isidore Szczepaniak (*MA Marine Biology 1990*) is a Research Associate at the California Academy of Sciences' Department of Mammalogy, a naturalist for the Oceanic Society, and Co-Principal Investigator of the Golden Gate Cetacean Research Group.



MICHELINE CAPRIO BIOLOGY'S OLDEST LIVING ALUMNA?

Alicia Leon Jhong (*BS Clinical Science 1981*) wrote to us about her classmate 88 year old **Micheline Caprio** (*BS Clinical Science*) of Walnut Creek, California. Micheline was in her 50's when she attended SF State, and especially enjoyed her classes with **Drs. William Wu, Bernie Goldstein and Remo Morelli** though her favorite class was "Medical Illustration." What she enjoyed best in her biology classes was the opportunity to use the microscope. Originally from France, Micheline worked as a midwife in Paris. After graduating from SF State, she worked in hospital and pharmaceutical laboratories. According to Alicia, Micheline's house is adorned with the many paintings she has done of her native village. "She likes to transform whatever beauty she finds in nature into art."



A Biology Alum? Email silver@sfsu.edu and share your achievements.

KAREN ALROY—Veterinary Health Researcher

Karen Alroy is a former tech and postbac who worked in Dr. Sarah Cohen's lab while attending classes to complete vet school requirements. Karen wrote to us from Peru where she is conducting infectious disease research.

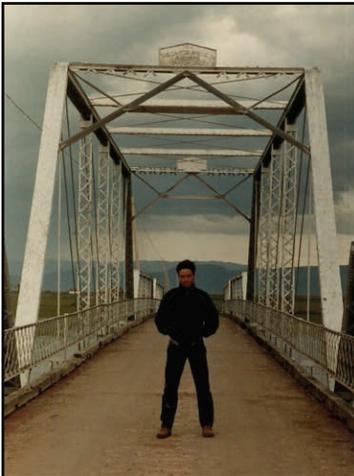
"While I am only one of a few veterinary students in the National Institutes of Health Fogarty Scholars Program, I have found a wonderful community of vets here in Peru who work closely with public health. I am also fortunate to have a fantastic mentor, Dr. Bob Gilman, who is a world renowned global health infectious disease researcher, and a faculty member at the Bloomberg School of Public Health at Johns Hopkins. I work on two projects here in Peru. The first one is an epidemiological study of Chagas disease in several remote communities in the Cajamarca region of Northern Peru. During a month-long field trip last fall, I led a team of biologists to take blood samples from guinea pigs and dogs. We also collected Triatomines (or Chirimachas as they are called here), the vector of the parasite that causes Chagas disease. My second project is based in Lima where I am working closely with veterinarians from the San Marcos School of Veterinary Medicine developing a minimally invasive experimental model for neurocysticercosis in pigs. Neurocysticercosis is another parasitic disease, and the leading cause of seizures in people in the developing world."

- Karen Alroy (Karen.Alroy@tufts.edu)

p.s. During my time in Peru I have also had the opportunity to learn Spanish, hike in the Andes, and even race a handmade raft 120 miles down the Rio Amazonas. It has been an incredible experience!"



THANKS FOR THE MEMORIES.....



Steel Bridge, Study Site 3, Sierra Valley

We asked alumni to write in and share their memories of their time at SF State.

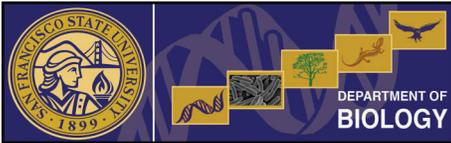
Alumni, UC Berkeley gardener and founding member and volunteer archivist for California's Green Party, **Hank Chapot**, (photo left) wrote to tell us about his experience.

*"In 1972, I entered SF State as an art student with a fascination for natural history, and took a class called "Nature Study" from **Dr. J. Russell Gable**, an old-school naturalist with an office filled with mounted specimens and a live baby rattler. I changed my major, and committed myself to field trips starting with Gable's desert biology. I studied under **Dr. Bob Sweeney** (taxonomy and fire science), **Dr. George Batchelder** (Pleistocene biology), **Dr. G. Ledyard Stebbins** (plant population research), **Dr. Elizabeth McClintock** (trees) and **Dr. Jeannie Davis** (ecological physiology). In 1976, I participated in a*

NSF-funded study: A Biological Baseline Study of the Sierra Valley Marsh—California.

We stayed at University-owned Camp Leonard above Sierra City from June-August. Having received proper permits, we picked up road kill and collected a few bats to make

*study skins for the on-site camp collection. Participants included Director, **Patricia Bushnell**, who along with **Anthony James** studied birds and mammals, **Sally Blaisdell** (amphibians and reptiles), **Candice Cooperrider** and **An Susterich** (ichthyology), **Kathleen Groneck** and twins **Fred and Greg Sommers** (botany), **Frances Cave** and **Kate Richardson** (arthropods) and myself (water analysis, maps and weather). **Jim Hawkins'** participation was also important to the study. In the fall we took a class with **Dr. James Mackey** to complete the write-up. During Christmas 1976, Patty, David, Kate and I travelled to the NSF report-back in Washington, D.C. where we met other students who had completed NSF studies." - Hank Chapot (B.A. Ecology and Systematic Biology 1977), email: hchapot@igc.org*



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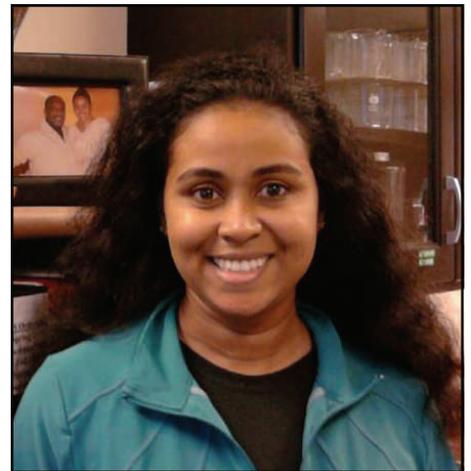
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Biology Staff is a Microbiology CSI!

Biology Instructional Services Facility Supervisor Darleen Franklin analyzed the content of a random BART seat for a New York Times article “On BART Trains, the Seats are Taken (by Bacteria)” — and her results may make BART riders want to stand during their next trip!

In two separate tests, Darleen identified characteristics of the MRSA bacteria (known as the “superbug” because of its resistance to antibiotics) in a swab taken from the seat cushion and headrest of a seat on a train headed from Daly City to Dublin/Pleasanton. The first test confirmed the presence of *staphylococcus aureus*, a skin-borne bacteria; a second test confirmed that the bacteria was resistant to the antibiotics methicillin and penicillin. A third test that confirms for MRSA strain came back negative. Even after Darleen cleaned the cloth cushion with an alcohol wipe potentially harmful bacteria were found growing in the fabric. A BART spokesman wrote that the findings were “not surprising,” considering that 330,000 commuters rode the trains daily, and that hygiene has emerged as a key issue as BART officials determine what kind of seats to install for a new fleet of cars in 2017. Darleen also tested random MUNI acrylic plastic seats on a No. 8 (San Francisco to Daly City) bus, and found two benign bacterial colonies. Unlike the BART seat analysis, after she cleaned the MUNI seat with an alcohol wipe no bacteria were detected.



“We have created an environment for bacteria to grow and become less resistant to drugs.”

A year after Darleen joined the Biology Department in 2005, she was asked by SF State’s [X]press newspaper to discover what types of bacteria and fungi lived in the University Gym. She swabbed the shower floor in the women’s locker room, a barbell from the weight room, a bathroom door handle in the men’s locker room, and a workout mat, and found mold, a fungus, *Micrococcus* (a common bacteria found on human skin and in water, dust and soil) and *Staphylococcus* (another common bacteria that lives harmlessly on skin especially in the crevices and in the nose.).