

REMEMBERING
DR. JACK
TOMLINSON

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BIONews

Published twice a year for SF State Biology alumni, students, faculty, staff, lecturers, donors and friends.

Congratulations 2010 Graduates!



Dear Alumni and Friends:

These last months have been the toughest I've had in my twenty-two years at SF State as the budget crisis hit us with full force by the start of this academic year. Yet, I am confident in saying that we've survived the worst intact. We maintain a stellar faculty and dedicated staff, and we can be proud of the quality and productivity of our research which has appeared in the very top professional journals and in the popular media. Our students are accepted into the best Ph.D. programs and medical schools. Our innovative programs reach out to corporate partners and the broader public. Our post-graduation celebration has been a stunning success, giving our graduates and their families a lasting and enjoyable memory of our Department. Loyal alumni work with us to organize events such as the upcoming May 25th Personalized Medicine 3.0 conference which exposes our students to industry and academic leaders, and establishes our Department's visibility in the field of genomic medicine. (*More information at: www.personalizedmedicine.sfsu.edu*)

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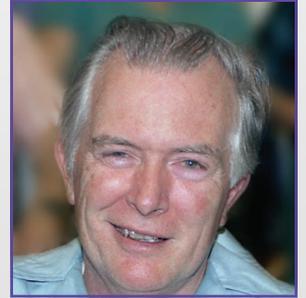
Photographer:
Justin Chan

Yet, in the wake of furloughs, hiring freezes and long-delayed salary increases, we face the prospect of losing superb faculty and staff, and have already seen some painful attrition and non-renewed positions for lecturers. With a budget reduced by nearly \$1 million, our faculty effectively shrunk from 55 to 40, the attractiveness of our program has swelled the ranks of our undergraduates from 1,200 to nearly 1,700 majors. Raising private, unrestricted funds to improve our infrastructure and day-to-day operation remains a key priority, and we are grateful to those who gave so generously to our program in 2009 (see page 7). Our website (<http://biology.sfsu.edu>) highlights the research and accomplishments of faculty, staff and students, and has a link "Make a Difference" which makes it easy to contribute to our programs. We must not and will not waiver from our goals of ensuring a superior education, maintaining a highly visible, respected and funded research program, and meeting the needs of our community by insuring that the Bay Area and California has the diverse academic, health professional, technical and teaching workforce and citizenry it needs to assure our place as Ground Zero in the Century of Biology and Biotechnology.

Mike Goldman 

*ADVANCING GLOBAL HEALTH AND THE BIOSPHERE:
Educating Future Generations of Scientists, Health Professionals, Teachers, and Citizens*

IN MEMORY
Jack T. Tomlinson
 1929-2009
An Extraordinary Man



Jack Tomlinson, Professor Emeritus, died November 9, 2009 at age 80. He earned a Ph.D. in Zoology from UC Berkeley in 1956, and joined the Biology faculty in 1957 where he taught until his retirement in 1988.

“Like Darwin,” remembers Professor Emeritus Robert Beeman, “Jack was an expert on barnacles.” Professor Tomlinson was recognized as a world authority on the order of Acrothoracida (burrowing barnacles) and authored 135 publications. He also worked with Dr. Stan Williams researching the effects of electromagnetic fields on bee communication and the natural antibiosis in some honeys. They maintained an observation hive on campus, and an experimental apiary in the Sierra Foothills. “Jack was a colleague of great energy, dedication and vision who contributed significantly in the growth of San Francisco State College into a University,” said Dr. Williams.

Dr. Tomlinson was a fellow of the California Academy of Sciences, a member of the Society of Sigma Xi, past president of the Western Society of Naturalists, and past Chair of SF State’s Department of Biology.

“I never met anyone else like Jack, and don’t think I ever will,” said Dr. Beeman. “He thought outside the box!” One example of Tomlinson’s thinking outside the box came in the 1960s when he initiated and sealed the world’s largest time capsule in the Mojave Desert—a feat that made it into the Guinness Book of Records.

**SF STATE
FUN FACT**

In 1976, Dr. Tomlinson, a certified hypnotist, hypnotized 40 students. While under, some of the participants relieved their childhood; others slept. Dr. Tomlinson considered the experiment a success but his request to be appointed official CSU hypnotist was denied by the Chancellor.

To make a donation in memory in memory of Professor Tomlinson, visit <http://biology.sfsu.edu> and click on the “Make a Difference” link. Please write “In Memory of Jack Tomlinson” in the “Comments” box. THANK YOU.

NEWS BRIEFS

● **FACILITY DIRECTOR
AWARDED**

Annette Chan received the **Eden Staff Award** for her contributions to the care and maintenance of the **Cell and Molecular Imaging Center**.



● **PROFESSOR SEEKS
CAUSE FOR DEADLY
AQUATIC FUNGUS.**

Dr. Vance Vredenburg’s research was featured in a **National Science Foundation** online “**Science Nation**” video “**Disappearing Frogs: Trying to Save the World’s Amphibians.**”



Award-Winning Lecturer Advances Microbiology Education

Brinda Govindan found her “calling” after joining the Department as a lecturer in Spring 1999— and she loves it!

Dr. Govindan is both an instructor and lab coordinator for Microbiology and Public Health (BIOL 210/211) and General Microbiology (BIOL 402). She also teaches Genetics (BIOL 355) and Human Biology Lab (BIOL 101).

She enjoys teaching because it engages her creativity and allows her to share her passion for science with her students.

“Every semester is a chance to try something new in the classroom or in the lab. There are always new breakthroughs in research to share. And, I thoroughly enjoy keeping up with the scientific literature, and giving students an idea of what’s going on in the field.”

Before coming to SF State, Dr. Govindan earned a B.S. in Biology (cum laude) from Cornell University (1989), and a Ph.D. in Cell Biology from Yale University



“Teaching allows me to share my passion for science with others, and show them why science matters in their lives.”

(1995). She taught at UCSF where she was awarded a 3-year Damon Runyon postdoctoral research grant, then worked as a consulting scientist for Proteome, Inc.

In Spring 2009, Dr. Govindan was selected for the NSF-funded Biology Scholars Program, and is currently working on projects to improve undergraduate microbiology education. She also compiled and edited the first edition of *Annual Editions in Microbiology* published by McGraw-Hill in fall 2009.

When asked about her approach to teaching, she describes her classroom as an active learning environment where “students have to be on their toes and think. I want to create an atmosphere that encourages discussion...this helps students learn from each other because they all have important experiences that they bring to the classroom.”

Dr. Govindan strives to make what she teaches relevant by showing students how what they are learning relates to their own lives. And, judging by the number of students who “come to me long after they’ve taken my classes and tell me about something they heard or read about that relates to what we discussed in class” — she is succeeding in her goal of advancing microbiology education at SF State.

Dr. Govindan can be contacted at: brinda@sfsu.edu

NEWS BRIEFS



● TWO NEW ACADEMY FELLOWS

Drs. Gretchen LeBuhn, Associate Professor of Biology and Frank Cipriano, Director of the Conservation Genetics Laboratory were elected Fellows of the California Academy of Sciences. The fellowship is a governing group composed of a maximum of 300 eminent scientists who are elected in recognition of their notable contributions to the natural sciences.



PROFESSOR WORKS FOR EQUALITY IN HEALTH ACCESS AND OUTCOMES

LETICIA MÁRQUEZ-MAGAÑA, Ph.D.



Leticia Márquez-Magaña works with scientists, health professionals and policy makers to end cancer disparities, and to make the changes that will result in an equal opportunity for health to all members of our society.

“Cancer disparities are defined as the unequal burden of cancer incidence or mortality for a particular population,” explains Dr. Márquez-Magaña who is the Professor of Biology in SF State’s Health Equity Institute for Research, Practice and Policy. “For example, African-Americans die the most from twelve of the thirteen cancers that are recorded for the U.S. population.”

Dr. Márquez-Magaña and her research team want to find the answers to three questions:

- *How does individual ancestry affect particular cancer disparities?*
- *What are the cultural barriers to recruiting minority populations to cancer trials and biospecimen accrual?*

“My research interests lie in disentangling the biological and sociopolitical causes of cancer disparities.”

- *What are the best practices for training minority students to become future transdisciplinary researchers that are needed to eliminate cancer disparities?*

“We have submitted a proposal to gather qualitative data from Latinas about their sociocultural beliefs to better understand why some minority populations are generally reluctant to donate biospecimens for scientific investigations,” said Dr. Márquez-Magaña.

One preliminary survey result suggests that minority populations are more likely to donate saliva than blood or tissue. In a collaborative project led by graduate student Cathy Samayoa and Biochemistry Professor Ursula Simonis the feasibility of using saliva as a culturally -acceptable biospecimen for breast cancer research is being studied.

“We are studying the NMR spectra of saliva obtained from healthy women, and will compare it to the NMR spectra of breast cancer patients,” said Dr. Márquez-Magaña. “If reproducible molecular differences are found in the saliva from these populations, we may be on the path to identifying a more culturally-acceptable approach to early diagnosis of breast cancer.”

Her cancer disparities team is also interested in learning more about the beliefs of physicians with regard to clinical studies because their attitudes may be a barrier to

including minority populations in these studies. Thus, undergraduate investigator Angel Ku is developing a survey for community-based physicians. The overall goal of this collaborative project with Kathy Kim, the Health Equity Institute Professor in Residence in Biology is to create an automated Clinical Trial Alert system for these physicians that matches electronic health records to eligibility criteria for active clinical trials.

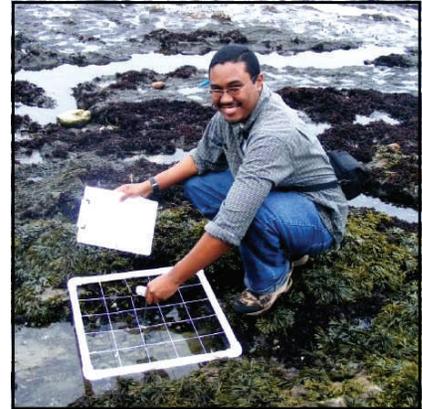
Before joining the Biology faculty in 1994, Dr. Márquez-Magaña earned a B.S./M.S. in Biological Sciences from Stanford University and a Ph.D. in Biochemistry from UC Berkeley. She was a post-doctoral fellow in Molecular Pharmacology at the Stanford Medical Center.

As professor, researcher and mentor, Dr. Márquez-Magaña is committed to the success of her students. In her lab, students are treated as young scientists who are integral members of the research team. She describes mentoring as one of her “most profoundly rewarding activities at SF State. I am able to combine my fascination with scientific discovery and my need to serve the community by being a role model for students wishing to pursue careers in science that are aimed at the attainment of social justice.”

Dr. Márquez-Magaña can be contacted at marquez@sfsu.edu

Identifying the Stars of the Sea

by Chantal Jolagh



Richard Coleman was 16 years old when he first set foot on a beach — little did he know then that a decade later he would be a graduating marine biologist.

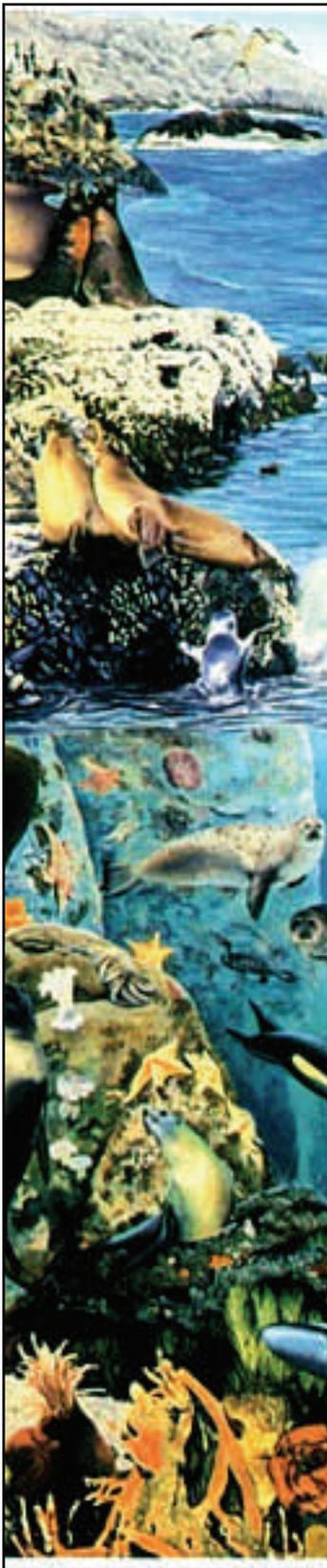
“I always saw the ocean from afar, but never had a chance to touch the waves and explore it,” recalls Richard who grew up far from the beach in Japan’s interior at the Fussa City U.S. Air Force Base. “The lack of access to a marine environment instilled the goal in me to be a marine biologist.”

Before Richard became a full time student, he worked in finance for six years, but his passion for marine biology remained, so he enrolled in SF State’s Department of Biology. “I chose to attend SF State because of the marine research station at Tiburon.” said Coleman. “The classes offered there provided hands-on opportunities to go out in the field and get dirty.”

Richard’s interest in seastars began during a visit to a rocky intertidal zone where he was helping another graduate student who was researching seastar reproductive ecology. Now a graduating senior in Dr. Sarah Cohen’s lab, he researches the ecological genetics of six-rayed seastars in the genus *Leptasterias* (photo below). His research addresses pressing questions about how nearshore habitat diversity may promote species diversity. Richard has characterized in detail the genetic and morphological traits of 158 individuals from diverse microhabitats using PCR and sequencing to identify different species. “Although there have been numerous studies regarding the systematics of *Leptasterias*,” explains Richard, “few studies have focused on Central California (Greyhound Rock to Fort Ross) so their taxonomic status remains unresolved.”

“Richard is a whiz at picking up new techniques for genetics and figuring out how to keep invertebrates in the lab happy.” - Dr. Sarah Cohen

Coleman is a National Science Foundation Undergraduate Biology and Math Fellow. He presented his research at the West Coast Biological Sciences Undergraduate Research Conference, SFSU Student Project Showcase, and the 2010 Benthic Ecology meeting where he won an award for his poster. He will attend the M.S. degree program in Zoology at the University of Hawaii, Manoa where he plans to specialize in marine biology.



Painting by Ben Saturen



Are you an alumna, alumnus, alumni or alum?

An **Alumna** is a female graduate or former student of a college or university.

An **Alumnus** is a male graduate or former student of a college or university.

Alumni is the plural form for both genders.

Alum is the informal term for both genders.

Whichever you are, your contributions to the past and future of the Department are highly valued.

So, please keep in touch!

Who is Biology's oldest living alum?

Think you know?

Email:
silver@sfsu.edu

Carla Bonilla (MA Cell and Molecular Biology '02) received a Ph.D. in Biological Sciences from UCSF (2008) and is a Post Doc at the Massachusetts Institute of Technology. **Dr. Connie Clark** (MA Ecology and Systematic Biology '01) is a Woods Hole Oceanographic Institution Consortium Delegate who participated in the December 2009 U.N. Climate Change Conference in Copenhagen. **Mari Kimura** (MA Ecology and Systematic Biology '02) received a Ph.D. in Ecology and Evolutionary Biology from Cornell University (2008) and is an AAAS Science and Technology Fellow at the National Science Foundation's Division of Biological Infrastructure. **Eric Mabery** (MA Cell and Molecular Biology '05) received a Ph.D. in Immunology (2010) from Stanford University. **Jeremy Mallari** (BA General Biology '01) received a Ph.D. in Chemical Biology from UCSF (2008) and is a Post Doc at Washington University. **Monica Macal** (MS Cell and Molecular Biology '04) received a Ph.D. in Immunology from UC Davis (2009) and is a Post Doc at UC San Diego. **Dr. Brian Perry** (BS Ecology '96; MA Ecology and Systematic Biology '02) is an Assistant Professor of Biology at the University of Hawaii, Hilo. **Reno Reyes** (MS Cell and Molecular Biology '05) received a Ph.D. in Neuroscience from the University of Alabama, Birmingham (2009) and is a Post Doc at UCSF. **Amy Rogers** (MA Ecology and Systematic Biology '01) received a Ph.D. in Ecology and Evolutionary Biology from UC Los Angeles (2008) and is a Post Doc at the Pinchot Institute, Ecuador. **Rowena Suriben** (BS Cell and Molecular Biology '04) received a Ph.D. in TETRAD/Psychology (2009) from UCSF.

8 SF State Biology Graduates Work Towards their Ph.D.s....

Lindsey Carr (MS Marine Biology '08) Ph.D. in Marine Ecology and Conservation, University of North Carolina, Chapel Hill. **Myra Dela Pena** (BS Cell Molecular Biology '07) Ph.D. in Immunology, University of North Carolina School of Medicine. **Anna Drexler** (MS Physiology '06) Ph.D. in Entomology, UC Davis. **Brittany Huntington** (MS Marine Biology '07) Ph.D. in Marine Biology and Fisheries, University of Miami. **Jennifer Jacobs** (MS Ecology and Systematic Biology '09) Ph.D. in Integrative Biology, UC Berkeley. **Emily Merchasin** (MS Physiology and Behavioral Biology '09) Ph.D. in Neuroscience and Behavior, University of Massachusetts, Amherst. **Teresa Reyes** (BS Cell and Molecular Biology '08) Ph.D. in Cancer Biology, Stanford University. **Cornell Wells** (BS Physiology '03) M.D./Ph.D., Albert Einstein University.



SF State Department of Biology Faculty and Staff in 1978
Do you have a story or photograph to share? Email silver@sfsu.edu

T H A N K Y O U !

Every gift we receive in this critical time plays a role in assuring the affordability of a college education, recruiting and retaining the very best faculty and staff, and fostering new programs and innovative research. **We gratefully acknowledge the following individuals for their gifts during 2009.**

Anonymous (7)	Patricia and James Fuller	Maria Macabeo-Ong	Sina Rostam
Alex Abbas	Akiko Futamura	Ellen Macneale	Leticia Santos
Behrooz Aval	Elvira Gamboa-Austin	Daniel and Barbara Maher	Marian and Perrt Seto
Amos Barzilay	Charles Gockel	Shalimar Manalili	Amy Shen
Linda and Jonathan Bendor	Dr. Michael Goldman	Deborah Mead	Eddie Simeon, Jr.
Adrian Borbon	Dora Wong Goto	Natacha Merritt	Claire Spahn
John Bosch	Jason Hackney	Alex Nie	Dr. John Stevens
Dan Bulos	Sherif Hanala	Dr. Thomas Niesen	Christopher Surrell
Michael and Mary Burgett	Suzanne and Jeffery Harmon	Denise Nishita	David and Margaret Svoboda
John and Catherine Campbell	Patricia and Mark Herrick	Martha Nobles	James and Claribel Sweeney
Robert and Ellen Case	Rose and Steven Hillson	Anna Panuco	John Bosch
Hilary Clark	Sylvia and Ronald Hochede	Dr. Sally Pasion	Joseph and Maggie Tieger
Benjermin Colombo	Steven Hoffman	Rosemary Paw	Mina Torabi
Maria Corea	Pete Johansson	Dr. Dragutin Petkovic	Nancy Towle
Katherine Crump	Benson and Shew Jung	Svetlana Pidasheva	Marc Ussini
Amanda De La Vega	Tod Klingler	Russell Pittenger	Stephen Volland
Sylvia de Trinidad	Antoinette Konski	Elaine Plaisance	Jay Vora
James Duncan	Mischa Kornievsky	Dr. Wenshen Pong	Jennifer Wessel
Carol Evkhanian	Sarah Kummerfeld	Dr. Ellen Prager	Potter Wickware
Kathleen Faraday	Patricia Lee	Elena Ramirez	Douglas and Pam Wong
Stacy Feld	Thomas Lenton	Dr. Robert Ramirez	Dejin Zhan
David Freedman	David Lo	Shirley Rasmussen	
Toby Freedman	Pearl Lung	Carl Rogers	

One Way You Can Support Biology:

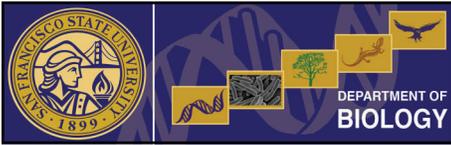
JANIS KUBY MEMORIAL FUND

This fund provides scholarships to undergraduate students majoring in Cell and Molecular Biology or Microbiology.

Dr. Janis Kuby received her Ph.D. in 1978 from the University of California, Berkeley, and joined SF State's Biology faculty in 1979. Her skill and enthusiasm as a professor and researcher in Immunology were widely recognized. She authored an immunology textbook which gave a comprehensive introduction to the principles and research in the field. *Kuby Immunology* became a best-selling text for immunology courses.



Dr. Kuby lost a long battle with cancer within weeks of completing the 3rd edition of her textbook in 1997, but the quality of the original textbook is so great newer editions have been continued in Janis Kuby's name by a trio of authors. Upon learning of her death, one of her students, Elizabeth Crabb Breen, wrote, "Janis Kuby will never be forgotten by anyone who has ever had the benefit of her knowledge and love of immunology, either face-to-face, or through her writing."



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Visitors on the Web



Since Biology's new website went online in April 2009 over 80,000 visitors from over 140 countries have come to our site looking for program information, admissions policies, and advisor contact information.

And, we have had our share of unusual requests...

- A Marin Theatre Company set designer wanted to tour a marine biology lab to get some ideas for an upcoming play.
- A French photo researcher asked for high resolution photos of glowing mushrooms for a science magazine "La Recherche."
- A York University professor working on a Canadian Broadcasting Company documentary about Charles Darwin wanted to know if Emeritus Professor Robert Bowman had recorded finch songs.
- A Presidio Native Plant Nursery member who is creating a list of lichens growing in the Presidio asked to look at the Department's lichen collection.
- A South San Francisco High School student asked for advice on how to construct a greenhouse he wanted to build for his senior project.
- A SF State Cinema major sought permission to film in Biology's greenhouse for his CINE 310 project.
- A Oceana High School student wanted to interview faculty for his senior thesis project on biological weapons.
- A Castle Rock (Colorado) High School student had questions about simple tests that could be performed to compare dolphin eyesight to human eyesight.

These are just a few examples of the emails we received from the science-interested community.

We hope you'll visit us at <http://biology.sfsu.edu> soon, and please feel free to drop us a line.