

UC DAVIS

BIOLOGICAL SCIENCES

News from the College of Biological Sciences

Vol. 15 No. 2, Winter/Spring 2007

UC Davis Biological Sciences is a periodic publication of the College of Biological Sciences to inform alumni and parents of current students about the programs and activities at the College.

We welcome contributions from both graduate and undergraduate alumni. Please send us your news at <http://biosci.ucdavis.edu/alumni/postcards>.

CONTENTS

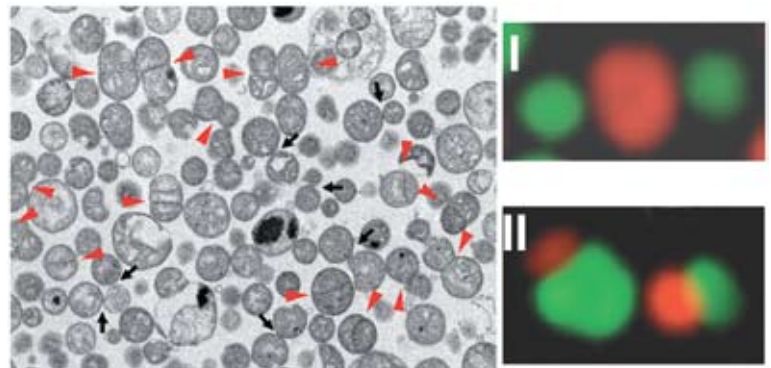
From the Dean	2
With Distinction	2
Faculty Spotlight	3
Science Notebook	4 & 5
In Memoriam	5 & 6
Teaching Fund	5
Landscape Signs	6
Dean's Circle	6
Alumna Profile	7
Student Awards	7
Upcoming Events	8

MITOCHONDRIAL MYSTERIES UNRAVELED IN NUNNARI'S LAB

Mitochondria fuel life by making energy and breaking down nutrients into basic chemicals that supply energy for cellular functions. These important cellular organelles are essential to cells, and, consequently, even minor perturbations in mitochondrial function affect the well-being of organisms.

Professor Jodi Nunnari's research focuses on understanding the behavior of mitochondria, and she is discovering some amazing things about how they work. Her work has changed the way scientists view mitochondria by demonstrating that they are dynamic, constantly undergoing division and fusion and that this behavior is important for the function of the organelle.

Nunnari's research provides insight into why, when mitochondrial inner membrane fusion goes wrong, a human neurodegenerative disease that affects the retina develops.



Electron microscope analysis of stage 1 mitochondria. Clustered and deformed mitochondria are indicated by black arrows and red arrowheads, respectively. Magnified fluorescent images of stage 1 mitochondria are shown representing clustered (I) and deformed (II) mitochondrial structures.

Dr. Nunnari's lab has focused on understanding the nature of the molecular machines that perform mitochondrial division and fusion reactions. In recent years, her group has published several seminal advances describing these machines. One of the more significant accomplishments in her lab is recapitulation of mitochondrial fusion in vitro, which was published as an article in *Science Magazine*. Using this assay her lab has established how mitochondrial inner

(continued on page 3)

NEW LECTURESHIP IN BIOPHYSICS BEGINS IN APRIL

Through a generous donation in December 2006 of \$200,000, Elena B. Weaver and her sons, Timothy D. Weaver, Christopher P. Weaver, and Ash P. Weaver endowed the **David L. Weaver Lectures in Biophysics and Computational Biology** in the College of Biological Sciences. The series honors the memory of a husband and father, David L. Weaver, who was a prominent biophysics researcher and professor at Tufts University.

As an active researcher, Dr. Weaver was impressed with the research and faculty at the **UC Davis Genome Center**. He planned to spend his sabbatical year, 2006-2007, working at the Genome Center with **Professor Yong Duan**, conducting research in protein folding. When Dr. Weaver suddenly passed away before his sabbatical began, his wife and children wanted to ensure that the UC Davis scientific community could benefit from his knowledge and passion for research, and they created this endowed lectureship.

Dr. Weaver, a professor of physics since he arrived at Tufts in 1963, focused his research on high-energy physics, studying the theories of photo production and elementary particles. After spending a year and a

(continued on page 6)

From The Dean

A TRADITION OF EXCELLENCE

In research, we all stand on the shoulders of those who came before. This is equally true for our development as a college – excellent faculty attract outstanding new faculty, generation after generation. My thoughts were drawn to this topic by the articles in this month's newsletter, in which we note with regret the passing of the first chair and co-founder of one of our departments after a long and illustrious career, while in the same issue celebrating outstanding achievements by faculty in every department of the College of Biological Sciences.

Professor **Paul Stumpf** arrived in 1958 to establish the Department of Biochemistry and Biophysics. As his own work became internationally recognized, he helped guide his department to prominence, for the quality of its faculty as well as its undergraduate major. Like Professor Stumpf, leading faculty in each of the college's departments have worked to attract the best and the brightest to join them at UC Davis.

In this issue, our "Spotlight" is on two outstanding faculty: **Jodi Nunnari** from Molecular and Cellular Biology, whose groundbreaking research on mitochondria is answering fundamental questions relevant to human health and aging, and **Kim McAllister** from Neurobiology, Physiology and Behavior and the Center for Neuroscience, named this year's "Young Investigator of the Year" by the Society for Neuroscience for her work on development of the nervous system. National recognition also came to **Simon Chan**, new assistant professor in Plant Biology, when he received this year's Early Career Award from the American Association of Plant Biologists. Finally, in the "Science Notebook" section we highlight the work of three of our most distinguished faculty. **Thomas Schoener** and **Art Shapiro** in Evolution and Ecology have recently reported fundamental new insights into the processes of natural selection and speciation, and **Stephen Kowalczykowski** in Microbiology continues to attract international attention for his innovative use of "optical tweezers" to study DNA repair at the level of single molecules.

One generation of faculty follows another, but the tradition of excellence continues.



Kenneth A. Burtis

Dean, College of Biological Sciences

WITH DISTINCTION

STACHOWICZ NAMED UC DAVIS CHANCELLOR'S FELLOW

John "Jay" Stachowicz, associate professor of evolution and ecology, has been named by Chancellor Larry Vanderhoef as one of six UC Davis Chancellor's Fellows for 2006. As a fellow, John will receive a one-time award of \$25,000, and he can use the title "Chancellor's Fellow" through 2011.

Dr. Stachowicz's research has the unifying theme of understanding the underlying causes of patterns in the distribution of biological diversity (both at the species and genetic level) and the consequences of changing diversity for the stability and functioning of ecosystems.

The Chancellor's Fellow program was established in 2000 to honor the research and teaching achievements of extraordinary UC Davis faculty early in their careers. This award has been given to one or more faculty in the College of Biological Sciences each year since it began in 2000.



John "Jay" Stachowicz

HORWITZ RECOGNIZED AS MENTOR AND SCIENTIST



Barbara Horwitz

Barbara Horwitz, distinguished professor of physiology and Vice Provost of Academic Personnel, was selected the 2007 recipient of the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award. This award honors a member of the American Physiological Society who is judged to have made outstanding contributions to physiological research and demonstrated dedication and commitment to excellence in training of young physiologists whether by mentoring, guiding and nurturing their professional and personal development, developing novel education methods/materials, promoting scientific outreach efforts, attracting individuals to the field of physiology, or by otherwise fostering an environment exceptionally conducive to education in physiology.

Dr. Horwitz's teaching and mentoring excellence has also been recognized with numerous awards, including the University of California Presidential Award for Excellence in Fostering Undergraduate Research, the University of California, Davis Prize for Teaching & Scholarly Achievement, and the University of California, Davis Academic Senate Distinguished Teaching Award.

HARADA AND WILLIAMS ELECTED TO AAAS



John Harada

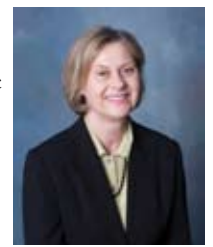
Susan Williams and **John Harada** were elected as fellows to the American Association for the Advancement of Science (AAAS) in 2006.

Susan Williams, director of the UC Davis Bodega Marine Laboratory and professor of evolution and ecology, is an authority on the nutrient cycles, plant-animal interactions and restoration biology of near-shore marine communities,

particularly seagrasses, seaweeds, coral reefs and invasive species.

John Harada, professor of plant biology, is interested in how plants reproduce through seeds and embryos. He was recognized by the AAAS for "distinguished contributions to the study of plant development through pioneering work on seed development and leadership in graduate education."

The College of Biological Sciences has 26 current faculty members who are fellows of the AAAS.



Susan Williams

FACULTY SPOTLIGHT

Jodi Nunnari, professor of molecular and cellular biology

...Continued from page 1

membranes fuse. Until her discovery, scientists knew certain diseases were triggered by a problem with mitochondrial fusion, but didn't understand fusion itself, says Nunnari. This key finding was published in *Cell Magazine* last October. Nunnari's research provides insight into why, when mitochondrial inner membrane fusion goes wrong, a human neurodegenerative disease that affects the retina develops.

When asked what fascinates her about mitochondria, Nunnari said, "How they are alone, containing their own genome and protein translational machinery, yet intimately integrated with diverse cellular functions."

In 1995, Nunnari joined the section of Molecular and Cellular Biology at UC Davis. She completed her doctoral degree in pharmacology at Vanderbilt University, and in the years before she arrived at UC Davis, Nunnari did postdoctoral work in Peter Walter's laboratory at UC San Francisco.

"I fell in love with biology by doing an independent research project in the Chemistry Department at the College of Wooster examining protein hydration by differential scanning calorimetry," said Nunnari. "Research, data and using these to advance biological knowledge has always been the driving force for me in my career. You might say that I'm addicted."

Nunnari became a UC Davis Chancellor's Fellow in 2001, an honor that is bestowed upon outstanding faculty members early in their careers. She invested the \$25,000 award towards an experienced postdoc to help with research. "The best investment is in the people who work with you in the lab," said Nunnari "and well-qualified, dedicated postdocs are indispensable to producing quality research."

Professor Nunnari balances her hectic schedule of active research, teaching and professional duties, which include organizing international meetings and giving seminars around the country, and her home life, which includes her two daughters, both age 5. Her teaching responsibilities include two Molecular and Cellular Biology courses in winter quarter: MCB 140L, the upper-division cell biology laboratory, which she created, and MCB 221D, the graduate course in cellular biochemistry.

"I enjoy teaching students in a laboratory setting, where I can get to know them well and watch how experiments help them connect and gain meaning out of what they have learned in their lecture courses," said Nunnari.



Jodi Nunnari with her daughters Sophia and Lena

A. Kimberley McAllister, associate professor of neurobiology, physiology and behavior



Kim McAllister

In October of 2006, **Kim McAllister** was named Young Investigator of the Year by the Society for Neuroscience in recognition for her highly regarded work in the field of developmental neurobiology. As if that wasn't enough, she and her husband Marty Usrey, also a neuroscientist, recently celebrated the birth of their second child. Kim is currently working on a part-time schedule, juggling the demands of research and teaching with those of her growing family.

Q: *What do you enjoy most about your work?*

A: I love the challenge of designing new techniques to address some of the most simple, but intractable, biological questions. The best part, of course, is discovering something completely novel -- something that no one has seen before and is completely unexpected. Teaching is also incredibly rewarding. The best part of teaching is pushing students to reach their potential and then watching them achieve a level of understanding they didn't think they were capable of.

Q: *What is the most challenging aspect of your work?*

A: The most challenging aspect of my work is definitely trying to balance my passion as a researcher with my passion for my family. There's simply not enough time in the day to do everything I'd like to do.

Q: *How do you maintain symmetry between the obligations of work and those of family?*

A: Balancing the demands of a growing family with research is incredibly challenging, but I absolutely love both and I wouldn't be happy giving up either. So, I don't get much sleep. Having a husband who is an equal partner in our family is essential. We support each other and equally share responsibilities at home.

It is also critical to manage your time wisely and to have the support of the University. The Center for Neuroscience at UC Davis is particularly family-understanding. There are a lot of female faculty members here and almost all the young faculty (men and women) have young kids. To maintain our high standards for graduate education and research productivity, we help each other out when we can and support each other always. It's a great atmosphere here.

McAllister's profile appeared in the January 2007 issue of the University of California newsletter, produced by Strategic Communications, University Affairs, UC Office of the President.

SCIENCE NOTEBOOK

LIZARDS CHANGE RAPIDLY IN PREDATOR-DRIVEN NATURAL SELECTION

Evolutionary biologists at Harvard University and UC Davis have discovered that change from natural selection can occur in a single generation through studying indigenous lizards in the Bahamas. Jonathan Losos, professor of organismic and evolutionary biology in Harvard's Faculty of Arts and Sciences, published a paper in the November 17, 2006 issue of *Science Magazine* with co-authors UC Davis' **Thomas Schoener**, distinguished professor of biology in evolution and ecology, **David Spiller**, specialist in evolution and ecology, and R. Brian Langerhans, a graduate student working with Losos.



Anolis sagrei (Melissa Losos)

Leiocephalus carinatus was introduced, with the permission of the government, as a predator on six islands in the Bahamas. Six other islands were controls with no predators. *L. carinatus* naturally appears on

these islands at times, and the increased populations were returned to the mainland at the experiment's conclusion.

The *A. sagrei* is traditionally found on the ground when no predators are present, but when the predator was introduced, these lizards took to the island trees for safety. The *A. sagrei* lizards were marked and measured, and the populations were monitored at 6 and 12 months to determine survival.

"Because of its epochal scope, evolutionary biology is often caricatured as incompatible with controlled experimentation," says Losos in a Harvard University press release. "Recent work has shown, however, that evolutionary biology can be studied on short time scales and that predictions about it can be tested

experimentally. We predicted, and then demonstrated, a reversal in the direction of natural selection acting on limb length in a population of lizards."

Studying the indigenous lizard on 12 islands in the Bahamas, the scientists saw their hypothesis confirmed when a new predator resulted in dramatic leg size changes, with the lizards displaying longer hind legs (better for running and thereby escaping the large lizard on the ground), then shorter hind legs (better for clinging onto twigs in trees).

Within six months, longer legs were more strongly favored on predator islands than on control islands, and by 12 months, selection was reversed to more strongly favor shorter legs on predator islands.

This natural selection discovery was publicized widely in prominent international science news magazines. Some of the publications that covered the news are online: *Scientific American* (www.sciam.com), *New Scientist* (www.newscientist.com), *Science a Go Go* (www.scienceagogo.com), and *ScienceDaily* (www.sciencedaily.com).

The paper covered research involving the lizard *Anolis sagrei*. The research team hypothesized that by introducing a predator to the indigenous lizard populations, the direction of natural selection for hind limb length would change as the lizards migrated from ground to trees.

The larger ground-dwelling lizard

WATCHING DNA REPAIR IN REAL TIME

Direct observations of DNA are giving new insights into how genetic material is copied and repaired.

"We can monitor the process directly, and that gives us a different perspective," said **Roberto Galletto**, a postdoctoral scholar at UC Davis and first author on a paper published Sept. 20 on the Web site of the journal *Nature*.

In *E. coli* bacteria, molecules of an enzyme called RecA attach themselves along a DNA strand, stretching it out and forming a filament. A piece of complementary DNA lines up along side it, and pieces of DNA can be swapped in to repair gaps in the original strand. A similar protein, called Rad51, does the same job in humans.

"How RecA and Rad51 assemble into filaments determines the outcome of DNA repair, but very little is known about how assembly is controlled," said senior author **Stephen Kowalczykowski**, professor in the sections of Microbiology and of Molecular and Cellular Biology

at UC Davis. Genes that control the human gene, Rad51, have been linked to increased risk of breast cancer.

Galletto attached a short piece of DNA to a tiny latex bead and placed it in a flow chamber, held by laser beam "tweezers." Fluid flowing past made the DNA stream out like a banner. Then he nudged it into an adjacent channel containing fluorescently-tagged RecA. After short intervals of time, he moved it back to the first chamber to observe the results.

By repeatedly dipping the same piece of DNA into the fluorescent channel, the researchers could see the RecA form clusters of four to five molecules on the DNA. Once those clusters had formed, the DNA/RecA filament rapidly grew in both directions. The measurements made in those experiments will be the baseline for future studies of both RecA and Rad51, Kowalczykowski said.

The new work adapts an approach developed by Kowalczykowski and **Ronald J. Baskin**, professor of molecular

and cellular biology, to study single enzymes at work unwinding DNA strands. That research was first published in *Nature* in 2001.

In addition to Galletto, Kowalczykowski and Baskin, the research team included postdoctoral scholar Ichiro Amitani. The work was funded by the National Institutes of Health and a fellowship awarded to Galletto by the Jeane B. Kempner Foundation.

This research caught the attention of science journals and media around the world; it was highlighted in the November 2006 issue of *Structure*, and spotlighted in the January 19th, 2007 issue of *ACS Chemical Biology*. News media articles about this RecA breakthroughs appeared in *ScienceDaily* (www.sciencedaily.com), *Medical News Today* in the UK, *Innovations Report* in Germany, and the Internet publications **Bio.com**, **PhysOrg.com**, and **News-Medical.net** in Australia.

UC Davis News Service contributed this article.

HYBRID BUTTERFLIES IN THE SIERRA

High in the Sierra Nevada mountains, a new species of butterfly has emerged as a hybrid of two existing species. It is the first time that this type of species formation has been shown in animals, according to the report published December 22 in *Science Magazine*.

“Darwin published ‘On the Origin of Species’ in 1859, but we are still learning about the ways new species can form,” said **Arthur Shapiro**, professor of evolution and ecology at UC Davis and co-author of the paper. This type of speciation has been shown in plants, but never in animals, he said.

Lycaeides melissa butterflies live on the eastern side of the Sierra, and *Lycaeides idas* live to the west. In between, in the harsh climate above the tree line, is a third, alpine species of *Lycaeides*.

Zachariah Gompert, a graduate student at Texas State University, with James Fordyce at the University of Tennessee, Knoxville; Matthew Forister at the University of Nevada, Reno; Shapiro; and Chris Nice at Texas State, used molecular genetics techniques to show that the hybrid alpine butterflies carry a unique mix of genes from both parental species. There is no gene flow, or interbreeding, between the parent species and the hybrid.

The project began more than 30 years ago, when Shapiro collected the alpine species at Sonora Peak. At the time, the hybrids were not recorded in the scientific literature and were “almost entirely overlooked,” he said. Fordyce, Nice and Forister are all former students of Shapiro’s, and the group has continued to collaborate after they got their doctorates.

“Problems like this one are too big to solve in the time frame of a Ph.D. project,” Shapiro said.

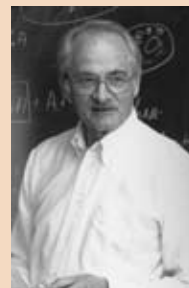
The alpine *Lycaeides* butterflies show unique behaviors that fit their extreme habitat. For example, the females of the lowland species glue their eggs to food plants, so hatching caterpillars will have a food source on hand. But in the high mountains, the dead remains of this year’s growth would get blown away in the winter, so the alpine *Lycaeides* let their eggs drop to the ground at the base of the plants instead.

The researchers calculate that the hybrids arose about half a million years ago, when *L. melissa* and *L. idas* came into contact in the Sierra Nevada. Subsequent climate changes left the hybrids isolated, and they evolved into a separate species. The work was funded by the National Science Foundation.

UC Davis News Service contributed this article.



Lycaeides melissa (Ian M. Wright)



Paul K. Stumpf

Paul Karl Stumpf, a professor emeritus of molecular and cellular biology at the University of California, Davis, who helped build the campus both physically and in scientific reputation, died February 10 at the University Retirement Community in Davis after a long illness. He was 87.

“Paul Stumpf was truly among the elite professors at UC Davis. National Academy member, president of his international society, co-author of the most popular biochemistry text of the 20th century-- he did it all. He made UC Davis a better institution and all of us who knew him better people,” said UC Davis Chancellor Larry Vanderhoef.

Stumpf received his bachelor’s degree in biochemistry, magna cum laude, from Harvard University in 1941 and a doctorate in biochemistry from Columbia University in 1945. In 1948, he joined UC Berkeley as an assistant professor in the Division of Plant Nutrition, then the Department of Plant Biochemistry -- later renamed Agricultural Biochemistry -- finally becoming professor and chair of that department at Berkeley.

In 1958, Stumpf and another Berkeley colleague, Professor Eric Conn, moved to Davis to establish the Department of Biochemistry and Biophysics. Stumpf served as chair of the department four times during his career at UC Davis. He retired in 1984, going on to help found the UC Davis emeriti association and serving as its founding president.

Stumpf pioneered the study of the biochemistry of lipids (fats and oils) in plants, training many students who went on to become leaders in the field and publishing more than 250 research papers over four decades. Among his achievements was the discovery in plants of the alpha-oxidation pathway for degrading fatty acids. Genetic defects in the same pathway in animals are linked to rare hereditary diseases.

In 1999, Stumpf and his wife, Ruth, established an endowed chair in the College of Biological Sciences: the Paul K. and Ruth R. Stumpf Professorship in Plant Biochemistry. Recipients hold the chair for five to seven years. The current recipient is Judy Callis, professor of molecular and cellular biology.

Among many honors and awards, Stumpf was a member of the U.S. National Academy of Sciences and the Royal Danish Academy of Sciences. He received a Senior Scientist Award from the Alexander von Humboldt Foundation, Germany, and was twice selected as a Guggenheim Foundation Fellow. In 1992 he received the Charles Reid Barnes Life Membership Award from the American Society of Plant Physiologists and, in 1994, he was elected as a fellow of the American Association for the Advancement of Science.

UC Davis News Service contributed this article

GRADUATE TEACHING SCHOLARS FUND SUPPORTS STUDENTS

The College of Biological Sciences (CBS) has established a Graduate Teaching Scholars fund, thanks to a \$10,000 gift from Alan R. Hofer. Hofer made the gift with a desire to further the academic excellence of graduate education in the college.

The new fund will support one or more graduate students per quarter who are enrolled in a CBS graduate program. To contribute to the Graduate Teaching Scholars fund, please contact Kathy Sachs Barrientes at 530-754-9253 or ksbarrientes@ucdavis.edu.

SCIENCES LABORATORY BUILDING LANDSCAPE EDUCATES CAMPUS

The landscape around the Sciences Laboratory Building has become an educational adventure, thanks to Curator Ernesto Sandoval and Director Tim Metcalf of the UC Davis Botanical Conservatory.

Made possible by successful grant applications to the Elvina J. Slosson Foundation, sturdy and informative signs now provide labels and interpretation for the myriad plants that surround the state-of-the-art undergraduate teaching facility.

The collection is especially rich in the floras of Madagascar & Socotra, succulents from the world's deserts, in addition to epiphytes, carnivorous plants, and the family Euphorbiaceae. Two grant awards of \$17,500 and \$25,000 allowed for several interpretative signs and the labeling of 400 plants with signs that show the species name, common name, family, order, range, habitat, and contextual notes.

Be sure to stop at the Sciences Laboratory Building and see the new plant labels when you visit campus! Don't miss an opportunity to see the beautiful collection at the UC Davis Botanical Conservatory on April 14, 2007, Picnic Day. The Conservatory will be open from 11:30 a.m. – 4:00 p.m.



"Darell Brandon '06, interpretive manager at the Conservatory, has been busy finding interesting and accurate information for the plant labels."

New Lectureship...Continued from page 1

half as a NATO Fellow at the European Center for Nuclear Research (CERN), in Geneva, Switzerland, he returned to Tufts and began to think about how he could apply his physics background to problems in biology. At the time, this signified a dramatic change in the direction of his research, because few interdisciplinary research opportunities were available. While he continued to make significant contributions in the areas of high-energy physics, for which he received tenure at Tufts in 1969, Dr. Weaver's interests continued to shift towards some of the key unsolved problems in biology.



David L. Weaver

During his sabbatical year at the University of Rome, Italy, as a CNN Fellow at the Frascati National Laboratory, he became more and more interested in applying his mathematical skills to gain a better theoretical understanding of some of those problems. He visited Dr. Martin Karplus at Harvard during a sabbatical in 1972, and they began a collaboration that culminated in a paper about a then theoretical diffusion-collision model for protein folding (*Nature*, 1976.) He then returned to Tufts and received grants from NASA, NATO, and the NIH to establish computer facilities, where he continued to develop improved protein folding calculations. He served as the chair of the Department of Physics and Astronomy from 1989 to 2002.

The research that Karplus and Weaver collaborated on remained dormant for years, until experimental studies in the mid-1990s showed that the Diffusion Collision Model indeed described the folding mechanism of many proteins. "The field has been completely transformed in recent years because of its assumed importance for understanding the large number of protein sequences available from genome projects," says Karplus, "and because of the realization that misfolding can lead to a wide range of human diseases."

The lecture series aims to bring eminent scientists from other institutions to participate in the academic community of UC Davis. These scientists will be active and well known in the fields of biophysics and/or computational biology, and will be widely known for their original research. The lecture topics will be scientific and innovative, aimed at inspiring the scientific audience while appealing to the lay person. The lectures will be free and open to the public, and will be held primarily at the UC Davis Genome Center.

The first lecture in the series will be given by **Dr. Martin Karplus of Harvard University** who was Dr. Weaver's research collaborator and friend for over 30 years. Karplus has been the Theodore William Richards Professor of Chemistry at Harvard since 1979, and is the Director of the Biophysical Chemistry Laboratory, a joint laboratory of CNRS and Université Louis Pasteur in Strasbourg, France. His lecture will be held on **April 27th, 2007, at 2:00 p.m. in the Genome and Biomedical Science Facility Auditorium (Room 1005)**. The lecture topic is "How Proteins Work: Insights from Simulations."

Join the College of Biological Sciences Dean's Circle!

Join today and support opportunities and programs including student scholarships, faculty research, innovative teaching, and more. CBS Dean's Circle members receive an invitation to an annual meal with the Dean. To find out more, call (530) 754-9254, email julee@ucdavis.edu, or visit

biosci.ucdavis.edu/giving/.

IN MEMORIAM: JOHN HADLEY PRYOR, CLASS OF 1937

John Hadley Pryor, Jr., resident of Salinas Valley, passed away at the age of 90 on January 24. Pryor graduated from UC Davis in 1937 with a degree in truck crops. He served four years in the U.S. National Guard before founding the John Pryor Co. in 1946, a company that specialized in the application of liquid fertilizers using a process that he pioneered. He loved to farm, and he operated Pryor Farms from 1964 to 2002.

John is perhaps best remembered for his generous spirit. He actively supported UC Davis alumni activities, and in 2000 he received the Cal Aggie Alumni Association Distinguished Achievement Award. In November 2005 Pryor made a large contribution to undergraduate scholarships at the College of Biological Science by creating the **John and Jeanne Pryor Scholarship Fund**.

Pryor's family suggests that any memorial donations be made to the VNA Hospice program, in gratitude of their kind support, or to the UC Davis Foundation, designated to the John and Jeanne Pryor Scholarship Fund 122350, and mailed to UC Davis University Relations, 1480 Drew Avenue, Davis, CA 95618.

ALUMNA PROFILE - KIRSTEN SANFORD, Ph.D 2006

Physiologist Discovers Passion for Science Journalism

Kirsten Sanford came to the realization that she wanted to be a science journalist during her doctoral program at UC Davis. In her blog, she says "I want to help inform people about science and the important place it holds in our society." (www.kirstensanford.com)

To build the skills to make her science journalism dream a reality, Sanford obtained a news internship at the UC Davis campus news service where she worked on the production of short television broadcast news stories about UC Davis for a local public television station. In 2005 she was chosen in a competitive application process to spend ten weeks as an AAAS Mass Media Fellow working at WNBC-TV in New York, NY. A few months after the fellowship ended, she was invited back as a temporary producer for the medical/health desk 'Live at 5' news segment at WNBC-TV.

In the world of podcasting, Kirsten's celebrity is already growing. Her tangible efforts to bring science knowledge to the masses began in January 2000, when she and her neighbor started a radio show at the

college station KDVS called "This Week in Science," or TWIS. The radio show features prominent scientists from a variety of fields. So far this year, Dr. Sanford has interviewed experts in the fields of evolution, genetics, physics, wildlife biology, biocomputing and more on TWIS. Currently each weekly podcast receives 15,000-17,000 downloads and audio archive of past shows net an additional 80,000-100,000 downloads per month. Despite this significant audience and the considerable bandwidth bills it entails, the show remains entirely a volunteer affair.

"In graduate school I wanted to stay focused on my research without the distractions of also running a business. Now that I'm done, I'm looking forward to making a career out of my hobby."

After Sanford's oral exams, she took a year off and moved from Davis to San Francisco. "I missed TWIS, and not doing the radio show made me realize how important it was to me,"



Kirsten Sanford

This Week in Science (TWIS):

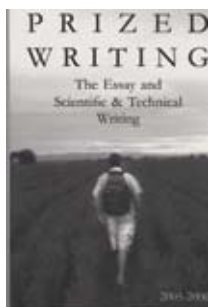
Tuesday 8:30–9:30 a.m. PST on KDVS 90.3 fm in Davis, CA. Podcast also available on **iTunes** and through www.TWIS.org.

says Dr. Sanford, "I love to be educating people about something I enjoy, and the radio show brought me back to Davis to continue work on my thesis and finish my Ph.D."

While working on her degree, Sanford became involved with Sacramento Valley chapter of the Association for Women in Science, and she currently serves as the chapter's president (www.svawis.org). Kirsten finished her Ph.D in Molecular, Cellular and Integrated Physiology (MCIP) in January 2006, and is now embarking on a promising career in science journalism.

FOUR CBS STUDENTS VICTORIOUS IN WRITING COMPETITION

Four students from the College of Biological Sciences were selected to appear in the 2005-2006 *Prized Writing: The Essay and Scientific & Technical Writing*. This annual competition selects and publishes the best expository writing produced by UC Davis undergraduates. A total of 18 essays and papers are selected for print, out of 375 entries.



From the biochemistry and molecular biology (BMB) major:

- **Haig John Kassabian**, "Screening *Bacillus* spp. for Crystalline Delta-Endotoxins"

From the neurobiology, physiology and behavior (NPB) major:

- **Jenny Besse**, "Drug Addiction and Disease"
- **Olesya Litovka**, "C-Reactive Protein: Predicting Heart Attacks and Strokes"

- **Jocelyn Tabor**, "Prenatal Nicotine Exposure and Sudden Infant Death Syndrome (SIDS)"

Lauren Liets, lecturer in neurobiology, physiology & behavior, had the opportunity to teach this year's NPB essay winners. Jocelyn Tabor and Olesya Litovka worked with Dr. Liets as teaching assistants, and Jenny Besse completed a Davis Honors Challenge contract with Liets.

"Because our instructional time is limited we, in the sciences, spend the majority of our efforts stressing scientific concepts and techniques and not as much attention is directed toward writing skills specifically," says Liets, "however, many of our students are beautiful writers and it is very nice to see these students recognized for their efforts."

Another note about this year's Prized Writing: **ALL eight of the scientific & technical writing "honorable mention" papers were from CBS majors.** Copies are at the UCD Bookstore, and more information about the competition is online at prizedwriting.ucdavis.edu.

STUDENT RESEARCH AWARDED

Two College of Biological Sciences students were honored with awards for research they presented at the Annual Biomedical Research Conference for Minority Students (ABRCMS) in November 2006.



Hiwot Araya

Hiwot Araya, a junior in biological sciences, was recognized for her work

in using micro fluidics to fabricate a capillary gel electrophoresis device.

Tyra McCray, a senior in biological sciences, was recognized for her work towards identifying the genetic basis for the anti-aging effects of dietary restriction.



Tyra McCray

ABRCMS is an annual conference organized by the American Society for Microbiology (ASM) and supported by a grant from the National Institute of General Medical Sciences. Now in its sixth year, ABRCMS is the largest, professional conference for biomedical students. Both winners are part of the UC Davis Biology Undergraduate Scholars Program (BUSP).

Both Tyra and Hiwot plan to continue their education in science research and/or medicine after they complete their undergraduate degrees at UC Davis.

UPCOMING EVENTS

COLLEGE OF BIOLOGICAL SCIENCES

UNDERGRADUATE MAJORS

Biochemistry and Molecular Biology
Biological Sciences
Cell Biology
Evolution, Ecology and Biodiversity
Exercise Biology
Genetics
Microbiology
Neurobiology, Physiology, and Behavior
Plant Biology

GRADUATE PROGRAMS

Animal Behavior
Biochemistry and Molecular Biology
Biophysics
Cell and Developmental Biology
Exercise Science
Genetics
Neuroscience
Physiology
Plant Biology
Population Biology

SECTIONS

Evolution and Ecology
Microbiology
Molecular and Cellular Biology
Neurobiology, Physiology, and Behavior
Plant Biology

UNIVERSITYWIDE AND CAMPUSWIDE PROGRAMS

UC Davis Biotechnology Program
Center for Animal Behavior
Center for Neuroscience
Center for Population Biology
Genome Center
UC BREP

Published by the
College of Biological Sciences
University of California
One Shields Avenue
Davis, CA 95616-8536
Phone (530) 752-6764
Fax (530) 752-2604
<http://biosci.ucdavis.edu/>

Ken Burtis, Dean

Editor: Bethany Daniels, Communications Officer
Email: bfdaniels@ucdavis.edu
Phone: 530-752-5824

Photographers: Bethany Daniels, Melissa Losos, Marcia
Wiener, Ian M. Wright

UC DAVIS PICNIC DAY SATURDAY APRIL 14, 2007

College of Biological Sciences Pavilion

Meet the deans of the college outside the Sciences Laboratory Building, 11:00 a.m. – 1:00 p.m. Take a tour or two, check out biology club displays and find out ways to support the college. Let us know that you're an alumnus of the biological sciences and you'll receive a free gift!

DAVID L. WEAVER LECTURES IN BIOPHYSICS AND COMPUTATIONAL BIOLOGY

Dr. Martin Karpus, Theodore William Richards Professor of Chemistry at Harvard University.

April 27, 2:00 p.m., GBSF 1005

Please note that GBSF = Genome and Biomedical Sciences Facility Auditorium

STORER LECTURE SERIES

Spring quarter will feature three Storer lectures and two Major Issues in Modern Biology lectures. Please check biosci.ucdavis.edu/seminars/ or call 530-752-2358 for the lecture topics.

Storer Lectures in the Life Sciences

Sir Peter Crane FRS, John and Marion Sullivan University Professor,

Hinds Laboratory for the Geophysical Sciences,
University of Chicago.

- April 5, 4:10 p.m., GBSF 1005 &
- April 6, 12:10 p.m., Activities & Recreation Center Ballroom A

Stephen Quake, professor,

Department of Bioengineering, Stanford University.

- April 23, 4:10 p.m., GBSF 1005 &
- April 24, 12:10 p.m., GBSF 1005

Pasko Rakic MD, Duberg Professor of Neurobiology and Neurology,
Yale University.

- May 14, 4:10 p.m., location TBA
- May 15, 12:10 p.m., location TBA

Major Issues in Modern Biology

Kenneth R. Miller, professor of biology,
Brown University.

Lecture topic: "God, Darwin, & Design: Faith and Certainty in the Scientific World"

- April 3, 8:00 p.m., 123 Sciences Lecture Hall

Dr. Andras Nagy, research scientist,
Samuel Lunenfeld Research Institute.

- May 8, 1:10 p.m., GBSF 1005

NUTRITIONAL GENOMICS SYMPOSIUM

Mark your calendars! On **October 12-14, 2007**, the Center of Excellence in Nutritional Genomics will host the **Second Bruce Ames International Symposium on Nutritional Genomics**. Check nutrigenomics.ucdavis.edu for more details.

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