



Dean Neal Van Alfen with CA&ES students Corinne Horn (environmental policy analysis and planning major) and George Yu (managerial economics major).

Undergraduate Education in CA&ES

In this issue of CA&ES Outlook we are pleased to share our college's undergraduate education program with you. We have several new programs and changes in majors that strengthen our overall curriculum and impassion our students. We have invested in outreach to new students, resulting in a phenomenal 63 percent increase in freshman and transfer applications this year.

To remain a leading undergraduate college at UC Davis, we hired Stacie Hewitt as Director of Student Activities and Outreach for the college. She works closely with Diane Ullman, our new Associate Dean for Undergraduate Academic Programs, to develop a slate of activities that create well-rounded students with leadership skills and technical, hands-on experience.

To develop scholarly students with workforce skills, Ullman, Professor Dave Rizzo, and our faculty created a new Career Discovery Groups program. The feature story shows how programs such as Career Discovery Groups, Science and Society, and the Contemporary Leadership Minor develop our students to be future decision-makers.

We are also highlighting Aggie Ambassadors, a robust student-run organization that fosters leadership and community outreach,

and Multiculturalism in Agriculture, Natural Resources and Related Sciences (MANRRS), a club that promotes multiculturalism in the college.

Our college now has 30 majors, following the transfer of some majors to the new College of Biological Sciences. We regularly examine the vitality of our majors to address societal needs. We are also excited about a new major – Agricultural and Environmental Education. With this major, students are now able to pursue teaching credentials in agricultural and environmental science secondary education.

We hope that you are excited about our undergraduate programs and how we prepare today's students to be tomorrow's leaders. Whether our graduating students enter the work place, pursue graduate school, or take time for family and travel, we train them well while embracing one of our undergraduate messages – "Your future starts here."

Neal K. Van Alfen
Dean
College of Agricultural and
Environmental Sciences

CA&ES OUTLOOK

is a publication of the College of Agricultural and Environmental Sciences

COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES

CA&ES Dean's Office University of California One Shields Avenue Davis, CA 95616-8571 Phone (530) 754-6788 Fax (530) 752-9049 outlook@agdean.ucdavis.edu www.caes.ucdavis.edu

EDITOR

Ann Filmer

SENIOR DESIGNER

Margarita Camarena

CONTRIBUTING WRITERS

Allison Chilcott Robin DeRieux Richard Engel Ann Filmer Susan Kancir John Stumbos Neal Van Alfen

PRODUCTION ASSISTANCE

Donna Gutierrez Jessica Pond

CA&ES OUTLOOK ONLINE

Trish Ang Viet Tran

www.caes.ucdavis.edu/NewsEvents/ news/outlook/default.htm

This publication is funded partially through gifts from the J.G. Boswell Foundation.

Printed on recycled paper.

The University of California does not discriminate in any of its policies, procedures, or practices. The university is an affirmative action/equal opportunity employer.

In This Issue



Feature Article

Where the journey begins...

New CA&ES programs are changing the nature of undergraduate education at UC Davis



Faculty Spotlight

Public art blooms in art-science "fusion" program

A popular entomology course is charting new educational territory while beautifying the campus

12

14



Research Spotlight

Soil science field course adds to campus lore

Legendary class cultivates a loyal following into soil science careers



Making a Difference

A national society, MANRRS, helps multicultural students, while Aggie Ambassadors spread goodwill to schools and the public

Around the College 10
Happenings 11
Research Notes 13
Alumni Spotlight 16
Alumni Notes 18
100 Years of Service 23
CA&ES Dean's Circle 24

Cover: Internships are an essential part of the undergraduate learning experience for many UC Davis students. CA&ES's Student Farm is a popular choice that gives students like senior Allison Reed an opportunity to teach school children about where their food comes from and the role of insects in nature. Allison is with a youngster from Dixon's Silveyville Elementary School, which visited the Student Farm this spring. (PHOTO: John Stumbos)

WHERE THE LOURNEY BEG

REALITY CHECK - UC Davis graduates Kelly Blightman (left) and Misha Gill (second left) are 2005 Textiles and Clothing graduates who returned to UC Davis recently to share their work experiences with students in a fashion seminar. Each is enjoying a rewarding career with Northface and Koret, respectively. Juniors Danna Sadetsky (right) and Sarah Kim (second right) learned that UC Davis textiles graduates are highly sought after in the fashion industry. UC Davis alumni bring valuable insight to undergraduates making important decisions about their future.

By John Stumbos

CA&ES programs are changing undergraduate education at UC Davis

If you were to visit UC Davis this spring, you'd find many things you might expect – the arboretum in full bloom, campus streets jammed with bicycles, and the quad packed with students studying, sleeping, tossing Frisbees, eating lunch, and grumbling about massive workloads.

But things are changing. A construction boom with new buildings like the Robert Mondavi Institute for Wine and Food Science – new home to the departments of Viticulture and Enology, and Food Science and Technology in 2008 – is in full swing.

And several new programs you may not know about are helping undergraduates focus more quickly on a career path, see the relevance of science in everyday life, and develop the leadership skills to excel in the workforce.

"We get a certain percentage of students with a clear vision of what they want to do," says **Diane Ullman**, associate dean for undergraduate academic programs in the College of Agricultural and Environmental Sciences. "They choose UC Davis because we're unique within the University of California system, in the world, and they know they're

going to get an excellent, hands-on education with a strong academic foundation."

Still, many young people go off to college uncertain about what they want to do with their lives. The main reason students don't graduate in four years is a change in major. It's not unusual for an undergraduate student to change majors two or three times. Students face enormous pressure to select a major – from family, friends, and themselves. A new program – Career Discovery Groups (CDG) – aims to take some of the angst out of that part of the undergraduate experience.

Freshmen explore careers

The CDG program began in fall 2006 to help freshmen learn more about themselves and potential careers before getting locked into a specific course of study.

"We studied freshman interest groups at other universities," said **Dave Rizzo**, a UC Davis plant pathology professor and head of the Science and Society program that houses the new program. "Most freshman interest groups orient students to campus. We wanted to do that and take things a step further by helping them learn about careers and the factors that go into deciding on a career."

Each of the 180 students who volunteered for the program chose one of 19 contemporary topics relating to plants or animals, the



environment, or human sciences. Examples include biotechnology in modern society, vanishing biodiversity, and global challenges to human nutrition.

Students take a cluster of three classes linked to their topic, one per quarter during the freshman year – a general education course, a class that explores a major-related topic, and a career discovery seminar led by the campus Internship and Career Center. Each Career Discovery Group has no more than 20 students and is guided by a graduate student mentor who organizes career-related discussions, networking events, and field trips.

The centerpiece of the program is the seminar, taught by **Janice Morand** and **Marcie Kirk Holland** of the Internship and Career Center. "The first thing we do is help the students learn who they are – their skills, interests, and workplace values," Morand explains. "We then get them to look forward, feel empowered, and find something they're passionate about."

Students take a number of assessments, including the Myers-Briggs Type Indicator, which helps them get a better idea of how their personality type is suited for different careers. "But knowing one's self is only part of the equation when it comes to career satisfaction," Kirk Holland adds. "It is also important to research occupations and assess whether they're a good fit."

So each CDG student is required to research a specific career and develop a poster for an end-of-the quarter conference. "Animal science is the largest major in our college because of the interest in veterinary medicine," Rizzo says. "But how many freshmen really know what's required to become a veterinarian, how much money they make, the hours they work and so on? They quickly find out."

The final section of the seminar focuses on the tools they'll need to get an internship or a job, such as writing a resume and cover letter, and interviewing techniques. Student reaction to Career Discovery Groups has been very positive.

"This program has been an incredible source of guidance and inspiration for me," said Michelle Immel, a freshman majoring in environmental policy analysis and planning. "I have come to truly grasp the skills, talents, and campus resources that I can use...



LEADERS OF A NEW PARADIGM

— From left to right are Marcie Kirk
Holland and Janice Morand of the
UC Davis Internship and Career
Center; Diane Ullman, associate dean
for undergraduate academic programs in the College of Agricultural
and Environmental Sciences; and
Dave Rizzo, director of the Science
and Society program. They are
creating new classes, seminars, and
internship opportunities that
are redefining the undergraduate
experience at UC Davis.

ENVISIONING THE FUTURE —
Freshmen in Career Discovery Groups
research potential career paths and
share what they learn in a poster
session. From left to right below are
Michelle Immel, Raena Rice, Daisy
Valencia and Benjamin Wahle.

I hope that many more students will be able to uncover their skills and passions in life through this unique and pioneering program, and benefit from it as I have."

Immel and other freshmen speak highly of the mentoring offered by graduate students in the program like Melissa "Missy" Borel.
"They're comfortable talking through things with me as they learn how to integrate their lives at UC Davis," Borel said. "The Myers-Briggs assessment is quite revealing to them – not so much as to whether they're an introvert or an extrovert, they already know that. It's other things like whether they're a perceiving or a judging type and what that may mean for their future career."

Borel, who graduated from UC Davis in 2004 with her bachelor's degree in plant sciences, changed her major the last quarter of her senior year. "I was pre-med and realized I didn't like being around sick people," she said. She discovered her deep interest in plants had been influencing her decision-making all along and is now thriving in a master's program in horticulture.

"I want to run a botanical garden," she said.
"I wish they had the Career Discovery Program when I was a freshman."

Seeing science in a new light

A successful trip to the grocery store requires basic knowledge of nutrition and food science. The evening news breaks down the connection between vanishing glaciers, ocean currents, and the weather in your corner of the globe. Voters are asked to decide the fate of stem cell research or whether farmers should grow genetically modified crops. Understanding how pervasive science is in our lives is the focus of a unique CA&ES program that is sharpening

students' critical thinking skills while probing everything from health food claims to fungi growing on campus.

"Science and Society" is an interdisciplinary home for several unique programs, including the Career Discovery Groups, the Contemporary Leadership Minor, and the Art-Science Fusion program. The SAS program is also where you'll find a collection of about two dozen courses – large lectures and small seminars – open to any UC Davis undergraduate that are charting new territory in the way science is taught.

Begun in the 1990s, it has grown over the years from several hundred students to more than 2,000 enrolled in the 2006-2007 academic year. Course offerings are "self-selected" by the faculty, says SAS program director Rizzo, and help students, regardless of major, fulfill general education requirements. Courses are topical in nature and sometimes atypical in delivery.

"Water in Popular Culture," taught by watershed hydrology professor **Greg Pasternack**, uses popular films as a teaching tool. "My course is really about understanding popular culture, how our students find a role for themselves in culture, and how they can distinguish reality from "truthiness" in developing an understanding of the real world around them," Pasternack said. "Watching movies like Day After Tomorrow and television shows like South Park's Two Days Before the Day After Tomorrow provides the class with a rich base of material to discuss in moderated sessions. Meeting with a movie director and real people living some of the situations they see in the movies provides grounding."

Jason White is a hydrology major who appreciated the diversity of perspectives in Pasternack's selection of movies. "I think seeing



each perspective was good, because movies can be powerful tools to sway people's sentiments," he said. "In one movie nature is the bad guy, and man has to persevere, whereas in another, man is the bad guy and in a way nature has to persevere. Yet in others the environment just sets the background. The class was thorough at showing how movies and pop culture play into how the public views the environment. But it also made me realize how movies and pop culture can have an adverse desensitizing effect on how we view the environment."

Rizzo and fellow plant pathology professor

Tom Gordon teach an SAS course on mushrooms, molds, and society. "Most people don't
know much about fungi," Rizzo says. "Most of
what people know is mushrooms on a pizza
and mold on the bathroom wall. But mushrooms
are pervasive throughout many parts of our
society and in other cultures. For instance,
there's a whole subculture of morel hunters and
a sociology surrounding mushroom poisoning."

Hydrologic sciences professor Wes Wallender is showing students how geographic information systems (GIS) are being used in new ways. "I saw an opportunity to link this technology to societal issues the students would find interesting, such as crime and crime analysis," he said. "They're excited about how this impacts society and particularly on whether it's fair or unfair and which communities have access. The city of Davis, for instance, has a GIS analyst on staff. Other less-affluent communities may not have access to this technology."

The twin themes running through the SAS curriculum are to help science majors put their career aspirations in a broader social context, while at the same time fostering scientific literacy to non-science majors. "This program is unique in the country," Rizzo says. "It's not science for dummies. They're not fluff courses. It's a different way of looking at science and we're teaching them how to think critically."

A new approach to leadership

Leaders are born, not made, right? Not at UC Davis, where students have the opportunity to learn the skills to become leaders. Employers and graduate programs alike are increasingly looking for students with structured leadership training. Some UC Davis students are earning a minor in contemporary leadership, a program greatly supported by animal science professor Annie King and extended through her experiences in the California Agricultural Leadership Program.

"Employers will tell you that students come with excellent skills in whatever their major is, but they don't write as well as they should and they don't know how to present themselves and work well with diverse groups of people," King said in an interview with the Kellogg Foundation explaining how the minor came to be. "I would love for UC Davis to be known as a campus that not only prepares students with the skills and theories they need to keep developing in their line of work, but also for preparing students who really know how to work in a group, how to present themselves well, how to speak well, how to write well."

After consultations among staff and faculty, the minor was established in 2002 to address those concerns. "We wanted to dispel beliefs about what leaders are supposed to be and what they have been in the past," King said. "That's why we called it 'contemporary' leadership."

(Continued on page 9)

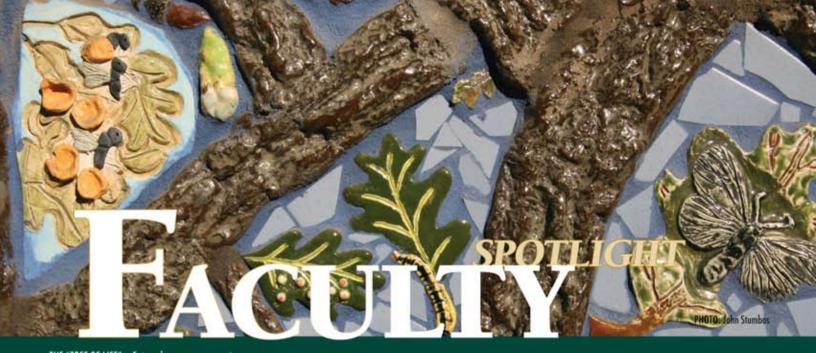
decision to become a doctor and serve my community through treating people. Actually, I feel like my life is much more planned out now that I have picked a path and a passion that I am willing to work toward. Now, I can organize my class schedule and focus on internships as well as research....Before, I just wanted to be a doctor who practiced medicine in a hospital or private practice. Now, because I realized I am a natural advocator. I decided that on top of being a surgeon I want to fight for underserved communities that do not have the healthcare that they need. ...I would not have come to this conclusion without the help of the Strong Interest Inventory. I have always liked science and politics. I felt forced to pick one or the other. Then, I recognized that I can do both, I can be a surgeon and fight for those left behind I feel that this is a great way for me to make a difference in this world."

66 T have never been

more confident in my

Srilaaxmi Ramesh,
 CDG participant





THE "TREE OF LIFE" — Entomology students selected the valley oak for a ceramic mural that now adorns a new restroom in the west end of the arboretum near Shields oak grove (above). The "Tree of Life" mural is among several public art projects transforming the campus while educating undergraduates.

EAST OF THE REDWOOD GROVE in the UC Davis Arboretum a new painted mural has come to life under the A Street bridge (below). Yellow-faced bumblebees, red convergent lady beetles, green-headed mallard ducks, and other creatures are another colorful legacy of the fall 2006 Entomology 1 class.

By John Stumbos

Public art blooms in artscience "fusion" program

It's late November 2006 and a group of about 40 high-energy students has descended upon **Donna Billick**'s art studio a few miles west of Davis. They're putting the finishing touches on a large ceramic mural of a valley oak tree and its associated life forms – birds, squirrels, insects, and other critters.

The mural is the final project for many students in **Diane Ullman**'s "Art, Science, and the World of Insects" class. She developed the class with Billick, a nationally known ceramicist, to help students learn about the natural world in a fresh way.

"What we have created, really, is a new paradigm for teaching art and science," she said. "It's very much a fusion. Art becomes more accessible to the scientist and science becomes more accessible to the artist."

Mary Liu is a managerial economics student whose contribution to the oak mural was an Asian ambrosian bark beetle. "My major has nothing to do with entomology, but I found this class interesting and learned a lot," she said. "This is for my general education requirement. I wanted something completely different."

The students are required to research and report on whatever organism they choose. "I think that in doing this project I have learned to understand why insects are so important in the world," wrote freshman sociology major Rebecca Gallo. "I have come to understand that they contribute an immense amount to our society, the way we live, what we eat and the things we use."

The students collectively chose the valley oak because it is native to the Sacramento Valley and important to the ecosystem. The project took on a life all its own. Adults from Davis and school children from nearby Winters contributed more than 1,000 ceramic oak leaves and 300 polished acorns. The finished mural now adorns a new restroom near the Shields oak grove in the arboretum.

(Continued on page 19)



(Continued from page 7)

The minor is an offering of the college but is open to all upper division undergraduate students. The program aims to teach students "how to rapidly assess complex situations, balance reflection and enthusiasm, weigh tradition against innovation, and identify and implement constructive courses of action." Academic coursework is built around clusters of courses in four areas:

- Communication, interpersonal relationships, and group dynamics
- Ethics and values
- Organizational structures and cultures
- Multiculturalism, the global community, and social change

One student graduating this year with a major in community and regional development and a minor in contemporary leadership is **Vanessa Fels**, who said the most profound impact the program had on her occurred winter quarter in the core course, Contemporary Leadership. "Through this course we are learning about ourselves, our personalities and our learning and leading types," she said. "I am hoping to pursue a career in human resource recruiting and management, so this minor and coursework will allow me to better work with people and manage a team."

Internships are required for the minor. Fels' internship is running a campus event called "Take an Aggie to Lunch," in which students are paired up for an informal lunch with UC

Davis alumni with similar career interests. (Call 800-242-GRAD if you are interested.)

"I believe every individual has the capacity for leadership because it is a learning process that deals with personal growth," said **David Ambrose**, an economics student minoring in contemporary leadership, who also is graduating this year. "While some people naturally possess strong leadership instincts, certain aspects of leadership must be taught, or learned through experience."

UC Davis students have a reputation out in "the real world." One returning textiles graduate told a group of undergraduates in a seminar this winter that the company she works for prefers to hire nothing but UC Davis students. Why? Surveys of alumni consistently show that a UC Davis undergraduate education prepared them well with essential workplace skills.

"I learned to think and reason at UC Davis," said **Andrew Broaddus** (Ag Resource Economics, '87), who analyzes risk in agricultural operations for Wells Fargo Bank. "There's no formula for what I do. I use the problem-solving skills I learned as an undergraduate every day. The longer I work in the corporate world, the more I appreciate the true value of my education there."

Innovations in undergraduate education like these are certain to keep a steady stream of CA&ES graduates making a difference in the world.

The contemporary
leadership minor is a
centerpiece for the new
Center for Leadership
Learning, housed at the
Colleges at La Rue on campus.
The center encourages sudents
to explore leadership
opportunities in education
and their communities.

PHOTO: Jake Mann

GIS AND SOCIETY — Hyrdrologic sciences professor Wes Wallendar shows students practical applications of geographic information systems in his Science and Society 18 class. Pictured with him are geology senior Jake Lippman (left) and community and regional development junior Jesse Henkin. Students evaluate physical, biological, and social impacts of GIS in the context of case studies such as land, water, and community planning.

AROUND The College

By Robin DeRieux

Advisers who work with undergraduates at the department level play a critical role in helping students complete their major requirements and prepare for careers or graduate school. Featured here are three outstanding advisers from CA&ES.

Kim Mahoney gives good advice. In 2006, she won the Walker Award, which honors the "Outstanding Undergraduate Staff Adviser" in CA&ES. A student affairs officer, Mahoney has worked with environmental science and policy undergraduates since 2002. She advises

approximately 160 to 170 students, anyone majoring in either environmental biology and management or environmental policy analysis and planning. Highly personable, Mahoney meets with her students at least a couple of times a year to help them plan out their course schedules and handle other concerns.



Departmental advisers offer critical support to students. Kim Mahoney with Nathaniel Roth (above); Carol Cooper (top right); and Ana Stevenson (below right). She finds that although today's undergraduates are very technologically savvy, they still seek out the personal connection. "Even though technology lets us inform students through Web sites and listservs and pod casts, they still want to talk to a human," says Mahoney. "They just need to see someone face-to-face."

Academic counseling from Carol Cooper is seasoned with a nice sense of humor. In an office festooned with dangling stuffed fruits, vegetables, M&M's, Hershey's Kisses, and other food icons, Cooper advises food science and technology majors. She has an easy rapport with her 150 undergraduates, who are always adding to her stuffed food collection. Food science is a very structured major, and many required courses are offered only once a year. Cooper helps students develop comprehensive study plans so they can finish their degrees on



time. She also uses her food industry contacts to help them find internships and job opportunities. A graduate of UC Davis, Cooper has worked on campus for 36 years and has

been an adviser since the 1990s. She is the recipient of multiple service awards. Cooper enjoys getting to know her students, but says, "The hard part of the job is that they leave."

When **Ana Stevenson** moved from UC Irvine to UC Davis, she brought 23 years of advising experience with her. A student affairs officer for animal science, Stevenson transferred to the Davis campus in 2006. She advises more than 1,000 undergraduates from four majors: animal biology, animal science, animal science and management, and avian sciences. Nearly all of her charges arrive on the Davis campus with the same question, "What do I need to do to get into vet school?" Since gaining admission to veterinary school is even more competitive than medical school, Stevenson has learned to persuade students to consider other career options as well.

Stevenson enjoys working with undergraduate students because of their eagerness and enthusiasm. "When I first started advising students, I was just out of college and essentially their peer," says Stevenson. "Now that I'm old enough to be their mother, I tell them to enjoy this time—it's the best time of their life."



HAPPENINGS

By John Stumbos

College boosts recruitment effort; applications jump

More of California's best and brightest high school and college transfer students are making UC Davis their top choice.

Application rates to the College of Agricultural and Environmental Sciences jumped from 5,155 prospective students in fall 2006 to nearly 8,000 for fall 2007. The upsurge reflects improvements in the online application process and revitalized recruitment efforts begun in October 2005 with the hiring of **Stacie Hewitt** into a new CA&ES position – Director of Student Activities and Outreach.

"We want to make sure students and their parents understand there's much more to UC Davis than world-renowned research and rigorous academics," Hewitt says. "We also talk to them about internships, career opportunities, and community-based programs."

One outreach program Hewitt has helped grow is the "Aggie Ambassadors" – more than 70 current UC Davis students who travel about 50,000 miles each year to meet with 135,000 students at California high school and community college events. She and assistant **Korie Robinson** also conduct campus tours for potential UC Davis students, and attend leadership conferences, FFA conventions, and 4-H extension activities, and visit with industry groups.

Other changes include revamped marketing materials and popular "goodies" – banners, stickers, buttons, pencils, and pens. A more functional Web site is making the research and application process easier. Admitted students are also receiving a personal phone call from current college students to welcome them to UC Davis.

Hewitt says the quality of the applicant pool is increasing – higher GPAs and SAT scores, as well as students with demonstrated special skills, talents, and elite leadership abilities. "There's so much opportunity for success and that's the important thing," Hewitt said. "Student success and achievement has to be the foundation for the university."

(Continued on page 19)



GOODWILL AMBASSADORS —
Stacie Hewitt (left) and Korie
Robinson (right) travel the state to
spread the word about UC Davis to
public schools and public groups.
Freshman and college transfer
applications have soared since
Hewitt was hired as a director of
student activities and outreach in
October 2005. Robinson is student
recruitment coordinator.



PROBING THE MOJAVE — A sturdy soil knife is an essential tool to poke and prod soil to reveal soil horizons. Soil scientists or "pedologists" read the horizons in a soil profile like a diary, revealing the mysteries of soil formation and environmental and landscape history, often dating back many thousand of years. The Mojave Desert is one of many destinations in a popular soil science field class.

By John Stumbos

Soil science field course adds to campus lore

In most UC Davis courses, students typically bring notepads, calculators, and assorted pens. In Soil Science 105, you'll also need a California road atlas, a warm sleeping bag, and a sturdy knife with a sheath.

SSC 105 – "Field Studies of Soils in California Ecosystems" – is unlike any other course offered at UC Davis. Offered only in the summer, it includes a two-week road trip with 10 to 20 intrepid souls exploring the alluvium of the Sacramento Valley, granite bedrock in the Sierra Nevada, the dunes of coast and desert, volcanic cones in the north state, and many other geologic features to learn about soil morphology, formation, classification, and land use evaluation.

SSC 105 is not for lightweights. Students work or travel from sunrise to well past sunset. "It's like being in the Navy – it's not a job, it's an adventure," says course task master and soil science professor Randal Southard. He shares teaching responsibilities with fellow UC Davis professors Randy Dahlgren and Michael Singer, and with UC Berkeley professor Ron Amundson.

Course graduates learn field skills useful for graduate research and in their careers. "It taught me that if one gathers all the detailed information at a given site, soil interpretations can follow for nearly any proposed use," said

Sidney Davis, an independent consultant who took the course 30 years ago. "This is powerful information in determining proper use and management of natural resources."

"The class opened up a greater understanding of all the textbooks and lectures I had referred to or participated in," said **Randy Davis**, now a national soil program leader with the U.S. Forest Service.

Many course survivors pursue careers in soil science. "It was like getting another degree in soil science," said **Mostafa Eghbal**, now a professor in Iran. "In Soil Science 105 I saw how soil properties change from one location to another as soil-forming factors change...(It also) gave me the idea of organizing similar trips for my students here in Iran."

Sidney Davis met his wife in the course and described SSC 105 as a turning point in his life, both spiritually and professionally. "My family emerged from that gathering of great people," he said. "Marie and I are delighted to make our farm available to the SSC 105 class for an overnight camp spot on their annual tour of the state."

The SSC 105 experience brings out the philosophical in some students. "Soil is not a random 100-gram sample used for analyses,"

Continued on page 201

RESEARCH NOTES

By John Stumbos

Undergraduate research conference a "capstone" experience

A majority of UC Davis students go on to graduate or professional school. The increasingly popular Undergraduate Research, Scholarship and Creative Activities Conference – in its 18th year this spring – gives them a glimpse into what that world is like.

This spring 233 undergraduates participated in the program and gave either an oral presentation or prepared a poster for public display in Freeborn Hall on April 21. Topics cover a wide range of subject matter from throughout the campus.

"This is a developmental conference for our undergraduates," says conference chair **Tammy Hoyer**. "It may be their first time presenting research in a public forum and introduces them to a scholarly setting where they can rub shoulders with a large number of faculty."



Some conference participants have developed remarkable projects. **Tim Fullman** is a graduating senior who has studied with sponsor **Rosie Woodroffe**, a professor in the Department of Fish, Wildlife and Conservation Biology. Under the guidance of Woodroffe's graduate student mentor **Jessie Quinn** last summer, he evaluated different methods of trapping, tagging, and tracking American badgers to gather information such as den locations and activity patterns.

Fullman's goal is to become a conservation biologist developing sustainable methods of preventing human-wildlife conflicts. "I also desire to be a professor so that I can pass on what I have learned and inspire others who will be passionate about wildlife and conservation," he said.

Persistence and enthusiasm paid off for senior **Thomas Shapland**, a viticulture and enology student who approached Land, Air and Water Resources biometeorology specialist **Richard Snyder** with an idea that may change the way grapes are irrigated.

"He came to me after class one day and said he wanted to compare microclimates in the Napa and Livermore valleys," Snyder said. "He wanted to see the effect of irrigation on grape quality."

"Degree day" models used to predict winegrape quality are based on air temperature, but the temperature of plant leaves in the vineyard canopy is more important. Shapland got funding from a grower group to test his ideas, which after a year's worth of data are showing a real difference. "I think this experience has changed him and has made him more interested in science," Snyder said. "He's a real go-getter."

(Continued on page 21)



A KING

National society helps multicultural students thrive at UC Davis

By John Stumbos

UC Davis graduates Shaune Zunzanyika,
Eliodora Chamberlin, and Duane Tut

– all thriving in vastly different careers – have
one thing in common. They believe their participation in a multicultural student organization
helped them to succeed in their careers.

Multiculturalism in Agriculture, Natural Resources and Related Sciences (MANRRS) is a national society with chapters throughout the United States, including one established in 1989 at UC Davis. The local chapter opted for the term multiculturalism to reflect its diverse composition – African Americans, Southeast Asians, Native Americans, and Latinos. Upward of 50 students participate in any given year.

"This organization has opened up many doors for our students and helps them to feel a greater connection to the college," says **Erlinda Gonzales**, CA&ES academic counselor and MANRRS program advisor. "Through involvement in MANRRS, they leave UC Davis with a sense of belonging and fellowship from participating in internships, leadership activities, and service projects with their peers."

They've helped raise money for victims of Hurricane Katrina and a Latino student scholarship in Yolo County. MANRRS students have also been involved in bone marrow drives and collecting clothing for families in need.

Professional development and networking opportunities are key benefits of the organization. Each year students can attend a national conference to meet potential employers and fellow MANRRS society members.

Duane Tut ('98, Landscape Architecture) is a project manager with a Los Angeles planning and design firm who participated in MANRRS. "It was a great outlet to not only socialize but to have access to understanding other majors within the College of Agricultural and Environmental Sciences through my peers," he said.

The program has helped strengthen ties with several federal agencies. For instance, the U.S. Forest Service located a recruitment office in

(Continued on page 22)

"I was able to fill my summers with meaningful internships and eventually an international fellowship that shaped my career," says Shaune Zunzanyika, a 1996 UC Davis graduate in International Agricultural Development. She is now with the American Red Cross in San Francisco.



Aggie Ambassadors

By Ann Filmer

A typical academic schedule at UC Davis keeps most undergraduate students very busy. Imagine adding the time commitment of traveling to statewide and national meetings and giving presentations to student and community groups near and far – that's the typical schedule of an Aggie Ambassador.

Aggie Ambassadors is a student leadership organization in the College of Agricultural and Environmental Sciences with 70 student members, from freshmen to seniors, representing 26 of the college's 30 majors. These ambassadors volunteer their time to make the general population – students, stakeholders, and industry partners – aware of what makes our college great.

They give countless presentations to students
– from third grade through community college
– and participate in many career fairs and
leadership workshops. They even attend the
National Agricultural Ambassador Conference
and the National FFA Convention. Through their
diverse activities, Aggie Ambassadors contact
135,000 students each year.

Tracy Heffington, a community and regional development major, and president of Aggie

Ambassadors, said, "Aggie Ambassadors has prepared me for a variety of fields, and has given me the opportunity to travel throughout and beyond California, meet students from other universities, and spread the news about UC Davis everywhere we go."

The students meet weekly during lunch programs that include guest speakers, leadership development and presentation training, and campus tours. Student membership in Aggie Ambassadors has grown tremendously in the past several years, due in part to the dedication and hard work of the group's advisors – **Stacie Hewitt** and **Korie Robinson**.

Stacie Hewitt, Director of Student Activities and Outreach for the college, noted, "These are truly the student leaders of this college. Their enthusiasm and commitment to the college and to UC Davis is extraordinary. The Aggie Ambassadors from UC Davis are recognized nationally as an outstanding student leadership group."

"This remarkable group of students is excited to serve," noted advisor Korie Robinson, who also works in Student Activities and Outreach in the CA&ES Dean's Office. Robinson pointed to Ag

(Continued on page 22)



UC Davis Aggie Ambassadors at the National Agriculture Ambassador Conference at the University of Arizona in January. More than 300 students from throughout the U.S. attended this leadership event. Tracy Heffington, president, is on the far right, and co-advisor Korie Robinson is center front (with name badge).

A LUMINI SPOTLIGHT

Aggie Ambassadors: The post-graduation payoff

By Richard Engel

Many leadership opportunities accompany the rigorous academic programs at UC Davis. Aggie Ambassadors is one program that provides networking opportunities, public speaking, and communication skills to undergraduates. We tracked down three Aggie Ambassador alumni to find out how the program enhanced their career activities.

Michelle Leinfelder is pursuing a doctoral degree at Cornell University following her 2001 graduation from UC Davis. According to Michelle, "Leadership development is what makes Aggie Ambassadors so valuable for students. As president, I developed the confidence to take on similar leadership roles as a graduate student." The skills Michelle gained as an Aggie Ambassador culminated with her selection as the 2001 commencement speaker.

When Julie Stewart and Jennifer Buckley Morrow graduated in 2002, both aspired to enter the agricultural teaching profession. However, both broadened their networks through Aggie Ambassadors and were presented new opportunities after graduation. Julie entered the Agricultural Education Program and was in the first class to graduate after realignment with the newly formed School of Education. Julie now teaches in Florida, lured there by friends she met while traveling the country as an Aggie Ambassador. Julie noted, "Our trips helped us learn from each other. To this day, I have a notebook full of education ideas and I still use many of them in my classroom."

Jennifer utilized skills she learned through Aggie Ambassadors to get an internship with the USDA's Rural and Community Development program. Then director **Devin Nunes** was so impressed with Jennifer's organizational and communication skills that he appointed her as his executive assistant following his election to Congress. Jennifer advises UC Davis students to "take every opportunity and make the best of them – whether it is a Picnic Day activity, joining a club, or representing the university at a national conference. Every lesson I learned as an Ambassador helped make me the professional that I am today."

Michelle, Julie, and Jennifer all built leadership skills through Aggie Ambassadors. Michelle's words of advice for students: "All Aggies should get involved with as many activities as possible. UC Davis provides ample opportunities to interact with administrators, faculty, and other students. Network, and develop those skills that are not taught in the classroom."

Michelle Leinfelder, now at Cornell University, values the skills she gained as an Aggie Ambassador.



Rachel Donham: UC Davis grad at home in Mendocino College

By Susan Kancir

Rachel Donham (B.S., '99, Environmental Toxicology; Ph.D., '04, Pharmacology and Toxicology) has traveled full-circle from her own undergraduate days at UC Davis to teaching as an assistant professor at Mendocino College.

"I want to continue learning throughout my life, and I love explaining the topics of biology, physiology, and toxicology to students," Donham says. "My appointment as an assistant professor allows me to combine those two life goals." Donham teaches human physiology and principles of biology and microbiology to pre-nursing and biology students and plans to develop a toxicology class soon.

Upon entering UC Davis, Donham initially had her sights set on a genetics or virology field. Then she happened to take an Introduction to Toxicology course one quarter and was instantly hooked. "The environmental toxicology major prepares you for many different fields. One of my classmates now works in emergency preparedness for Nevada County. One is currently in a medical residency, one is a K-12 teacher, and two others work for environmental consulting firms."

Two opportunities steered Donham's path toward community college teaching. The first was serving as an academic peer adviser for the Department of Environmental Toxicology at UC Davis. The second was a teaching assistant job for a laboratory course upon the advice of instructor Dr. Matt Hengel. "It was during this course that I decided that I wanted to teach at the college level," Donham noted. Hengel

remembers Rachel as one of the best students he has taught.

Donham says that as a student in the College of Agricultural and Environmental Sciences at UC Davis, she gained many important life skills. "I learned a lot about critical thinking, a skill that I try to instill in all my students, and independence, a trait that every successful individual needs."

Department Chair **Ron Tjeerdema**,
Donham's doctoral adviser, comments, "Rachel
is a model graduate of our program. Being
very people-oriented, she was also an excellent peer adviser -- her charismatic approach
attracted numerous students to our major. She
is now pursuing a career in teaching, which is
perfect for her."

Rachel resides with her husband, **Chris**Ineich (B.S., '03 , Environmental Resource
Management), in Potter Valley, Calif., where
she also is actively involved with students
through the local 4-H club.

Mendocino College human physiology students Arryanne Moss (left) and Lora Barnett (right) surround Rachel Donham (center) while analyzing enzyme activity.



ATTUMNIES

54

Arnold Demain (Ph.D., '54, Food Science) retired from MIT in 2001 after 32 years as professor of industrial microbiology. He then became Research Fellow in Microbial Biochemistry at Drew University in Madison, N.J. He continues his writing and consulting work as well as his research at Drew University working with undergraduate students on antimicrobials and antitumor agents.

182

Debra Lynn Brenner ('82, Zoology) works for PricewaterhouseCoopers in New York, N.Y. She was recently promoted to staff associate, and is responsible for knowledge management in the Fraud Risks & Controls practice at PricewaterhouseCoopers.

Andrew Engilis, Jr. ('82, Avian Science) is museum curator at the Museum of Wildlife and Fish Biology at UC Davis. The museum has 30,000 specimens in its collection and is part of the Department of Wildlife, Fish and Conservation Biology.

85

Jacqueline Avis ('85, Animal Science) is a research scientist with the Genomics Institute of Novartis in La Jolla, Calif. Her research focuses on developing mouse models for drug discovery using embryo manipulation methods.

90

Tracy Grissom (B.S. '90, Arts, Rhetoric, and Communications; B.S. '03, Community and Regional Development; M.S. '06, Community Development) recently accepted a position as an academic counselor in the College of Letters and Science at UC Davis. She and her husband, Mark, have a daughter, Olivia.

194

Jeannie Young ('94, Agricultural Economics) is a redevelopment project manager with the Redwood City Redevelopment Agency in Redwood City, Calif. She works on projects, programs, and plans for economic development and redevelopment activities including affordable business retention and expansion, housing production, and improved public spaces for Redwood City.

199

Tina Yang ('99, Food Science) is a director of product development at Elena's Food Specialties, Inc. in South San Francisco, Calif.

'02

Shelli Kendall ('02, Environmental Toxicology) is a fourth year medical student at Duke University and has been accepted to a U.S. Navy pediatric residency at Naval Medical Center in Portsmouth, Va.

'04

Erica Yee ('04, Environmental Biology and Management) is a field environmental specialist responsible for maintaining environmental compliance in the northern region for the Southern California Gas Company.

'06

Sandra Chang ('06 Environmental Toxicology) is a hazard communications specialist at Chevron in Richmond, Calif.

Kyle Keene ('06, Environmental Toxicology) is an air pollution specialist for the California Air Resources Board working on control measures for architectural coatings and greenhouse gas emissions. He is transitioning toward osteopathic medicine school.

We'd like to hear from you!
Take a moment to drop us a
note at outlook@agdean.
ucdavis.edu or online at
http://caes.ucdavis.edu/
NewsEvents/News/Outlook/
defaultForm.aspx

(Continued from page 8)



The art-science fusion approach intrigued UC Davis Provost Virginia Hinshaw, who provided pilot funding for this project. The "Tree of Life" mural is part of a much larger expansion of public art at UC Davis – the "GATEways Project," which in the coming years will transform the arboretum and adjacent land into a more accessible and interactive learning environment for students and the public.

Other faculty members are adding to the Art-Science Fusion program with courses of their own. Wendy Silk of Land, Air and Water Resources (LAWR) is developing "Earth, Water, Science and Song." Terry Nathan, LAWR, is creating "Photography: Bridging Art and Science." Dina St.Clair, Plant Sciences, is preparing "Art, Science, and the World of Plants."

"Through the fusion of art and entomological science we've opened up a whole new way of thinking and learning for our undergraduates," Ullman said.

"Nature's Gallery" mosaic, developed in the Art-Science Fusion program, will be a featured display at the U.S. Botanic Garden on the capitol grounds in Washington, D.C., June through September, 2007.

Student Brian Cheng learns about bird anatomy and habitats while creating a clay tile of an egret.

(Continued from page 11)

Severe agriculture teacher shortage prompts development of new CA&ES major

This spring just 50 new teachers credentialed in agricultural education will graduate from California's five agricultural universities to fill more than 100 job opportunities.

Concern about this teacher shortage has led to the development of a new major at UC Davis in agricultural and environmental education. It will also provide an avenue for those interested in teaching in non-formal settings such as nature preserves and environmental camps.

The new major is a collaborative effort with the UC Davis School of Education. Students will be provided with a broad background of agricultural and environmental sciences, as well as the social sciences related to human resource development. The shortage has grown over the last two decades because agricultural education student numbers continue to rise in California high schools. Most high school students earn

science graduation credit from their agricultural education courses and many classes meet UC entrance requirements.

"With this new major, UC Davis will prepare teachers with the most comprehensive science background in the state," says **Cary Trexler**, a professor in the School of Education and master adviser for the new major. "Not only will our students be ready to teach agricultural and environmental science, they will also be credentialed to teach other science courses as well."

After completion of the undergraduate degree, students can enroll in the School of Education's credential in agricultural and environmental science and can simultaneously earn a Master's of Education in six quarters.

The new major also provides necessary skills for scientists, technicians, and creative educators in a wide range of domestic and international agricultural and environmental programs.



A DUST TRAP — Soils of desert regions are susceptible to wind erosion and deposition and, over time, trap layers of dust particles that become soil. These particles reveal characteristic chemical signatures that can be useful for environmental monitoring and understanding how landscapes evolved during global environmental change cycles.

A PREDICTIVE TOOL — Soil Science Professor Randal Southard talks to UC Davis students on the slopes of Mount Shasta about the relationship between Andisols (volcanic soils) and forest productivity. Andisol soil chemistry helps predict timber growth and soil erosion potential.

(Continued from page 12)

said **Nicholaus Madden**, now working in Southard's campus lab. "It is a complex interaction between climate, organisms, topography, parent material, and time. It is where biology, physics, and chemistry meet to talk about the transition between life and death and back again."

"This class completely changes people's lives – and always for the better," Southard says.

"It's a learning experience you just don't get in a classroom. Living and working with the same people day in and day out for 16 days forces people to learn about themselves in a way that few college experiences can."

Indeed, a lasting camaraderie bonds SSC 105 graduates. Every three years graduates of the course, which has been offered at UC Davis since the 1930s, meet for a reunion. One 82-year-old alum at the last reunion in 2005 took the course in 1946.

No more profound statement can be made about the course's impact than that made by **Jim Thayer**, who took SSC 105 in 1970. Before his death in 2001, Thayer, his colleagues at CH2M Hill, and other alumni established

an endowment to provide financial assistance to promising students who might otherwise not be able to take the class.

"Jim established this fund because of his love for the soil science profession and because he felt the summer class was the best class he ever took," Southard said.



PHOTO: Donald McGahan



Graduating senior Thomas Shapland studied the influence of irrigation on grape quality. He has been accepted into the UC Davis graduate program in viticulture and enology.

(Continued from page 13)

"It is one thing to be able to understand a lecture, take notes, and regurgitate it on a multiple choice exam," Shapland says of his project. "It is another thing to be able to understand the topic with sufficient depth to explain it to other students and professors who are interested in my results."

Shapland has been admitted to graduate school at UC Davis and will be continuing his research into vine canopy management.

The undergraduate research conference began in 1990 to stimulate interest among underrepresented students in graduate study and faculty careers. Its popularity has soared since the first year when only 19 student presenters, 15 faculty, and 56 others attended. The conference

is open to the entire campus community and now draws between 500 and 700 attendees annually.

Over the years slide projectors and overheads have given way to PowerPoints and desktop publishing but the students haven't changed much. "They're enthusiastic, motivated, and trying to get somewhere," Hoyer says. "This is a capstone experience for them that ties together their undergraduate educational experiences at one time and it prepares them well for whatever they choose to do next."

High school 4-H students and their chaperone get wrapped in plastic to learn goal-setting skills in a leadership game led by Aggie Ambassador Alysha Stehly at the State 4-H Conference.

(Continued from page 15)



Day at the Capitol as an example of the service and leadership opportunities for Aggie Ambassadors. UC Davis was the only educational group at the day-long event in Sacramento in March, and Aggie Ambassadors staffed the UC Davis booth that was visited by state workers and representatives throughout the day.

Heffington didn't bat an eye when asked what she gets from being an Aggie Ambassador – "Friendship, leadership skills, and an opportunity to travel and meet new people." In addition to the academic knowledge Aggie Ambassadors get in UC Davis classrooms, these extracurricular outreach skills will serve them well in life.

There are many ways that alumni and friends of the college can help Aggie Ambassadors become even better leaders. The Aggie Ambassadors welcome speakers at their weekly meetings who can address career opportunities, they want to make contact with people who can provide educational field visits and tours, and they shyly whispered that they are always in need of travel funds for their many outreach programs.

You can learn more about Aggie Ambassadors at www.caes.ucdavis.edu/StudInfo/Clubs/Ambassadors.htm, and you can contact them at agambassadors@ucdavis.edu. To read about three young Aggie Ambassador alumni, see page 16.

(Continued from page 14)

the Internship and Career Center on campus because of the MANRRS program, Gonzales said.

Eliodora Chamberlain, Ph.D. (B.S. '93, Zoology), is a biologist working on water quality and watershed issues with the U.S. Environmental Protection Agency in Kansas City. "MANRRS has meant so many things to me," she said. "I successfully completed four internships and gained a wealth of experience that I applied to my resume, my graduate school application, and my job interview ... MANRRS was and is the foundation for my success today."

Shaune Zunzanyika ('96, International Agricultural Development) is director of volunteer resources for the American Red Cross in San Francisco. Internships initiated through participation in MANRRS led to a relief agency fellowship in Zambia, where she developed a business plan for an edible oil project and a health education program training villagers in family planning. "It is due to the guidance and support that I received from my peers and the leadership within MANRRS that I was able to fill my summers with meaningful internships and eventually an international fellowship that shaped my career," she said.

Wears of Service

By Robin DeRieux

Together, four long-time employees in the CA&ES Dean's Office offer more than a century of expertise in student advising. Sheila Walker, Erlinda Gonzales, Rosie Macias, and Jan Hatch have worked in undergraduate academic programs for a combined total of 122 years. "The Dean's Office is a good place to go when you don't know where to start," says Gonzales, who became a mother and eventually a grandmother while working with CA&ES.

For 27 years, counseling assistant Rosie
Macias has handled preliminary advising
for the Dean's Office. "What's your major?" is
the first question Macias always asks students
because if their major doesn't fall within the
College of Agricultural and Environmental
Sciences, they need to be redirected. Prior to
her job with the Dean's Office, Macias worked
for 10 years with the Office of the Registrar.
So CA&ES undergraduates get the benefit of
her 37 years of institutional wisdom, and Macias gets the benefit of a close connection with
students. One of them even sent her a Mother's
Day card. "I love working with students," says
Macias. "That's what keeps me young."

Academic counselor **Jan Hatch** has been advising undergraduates for CA&ES since 1980. She helps undeclared students select courses to explore various majors. She helps struggling students devise a plan so they can be successful academically. She also helps graduating

students make sure they have met all of their college and university requirements. "I've been attending commencement for years," says Hatch, "and I still get goose bumps at graduation."

Erlinda Gonzales uses her 32 years of experience in the Dean's Office to help students stay on track, making progress toward their degree. As an academic counselor, she often deals with students who are struggling with grades. "I tell students to find their passion, and then they'll do really well," says Gonzales. As the first person in her family to attend college, Gonzales finds one of the most gratifying aspects of her job is helping disadvantaged students succeed. "Seeing the light bulb come on for a student—especially one who's had difficulties—is really exciting."

As manager of Undergraduate Academic Programs, Sheila Walker supervises a team of eight employees. She has worked on campus for 36 years and has managed her unit for more than 30 years. Her challenge is to keep staff informed of changing policies and procedures so that college and university regulations are interpreted consistently by all members of the advising team. "This isn't the principal's office," says Walker. "Everyone here is trying to advocate for undergraduates. Students feel that we're really listening to what they have to say and appreciate the advice they receive."

Editor's Note: For 100 years, advising staff at UC Davis have been instrumental in helping students succeed. From deans' offices to college departments to campus advising services, students can get advice on academic requirements, career paths, life skills, and coping with all of the challenges students face each day.





JOIN THE CA&ES DEAN'S CIRCLE

Marysville ranchers **Michael** and **Patricia Rue** have a long history of giving generously to UC Davis. In honor of Michael's late father, they established the Frank G. Rue Memorial Scholarship Endowment to benefit undergraduate students in the Department of Animal Science. In addition, the Rues make annual gifts to several areas of campus. "I believe strongly in the opportunities that UC Davis provided me," says Michael ('71, Agricultural Science and Management; '74, J.D.). "So when we were financially capable, we began to support the campus."

One of the annual giving clubs that the Rues belong to is the College of Agricultural and Environmental Sciences Dean's Circle. You, too, can join the CA&ES Dean's Circle and help prepare students for productive and prominent careers in agricultural, environmental, and human sciences.

As a CA&ES Dean's Circle donor, your financial support enhances the academic environment for the next generation of Aggies and creates opportunities for our faculty to achieve higher levels of excellence in teaching, research, and public service.

Experience the pride of knowing that your contribution helps to continue the college's 100-year tradition of preparing today's brightest students for tomorrow's successes. Donors to the CA&ES Dean's Circle are invited to campus events such as an annual briefing with the dean. Donors also receive recognition in college publications.

The CA&ES Dean's Circle is open to donors who wish to make regular annual gifts of \$1,000 or more to the College of Agricultural and Environmental Sciences. You may designate your gift to one of many CA&ES departments or programs, or give to the unrestricted CA&ES Dean's Circle Fund. Your donation is renewable annually, and your employer's matching gifts count toward the total.

A response envelope is included in this issue of CA&ES Outlook so that you can join our prestigious circle of donors today. If you have questions or need more information, please contact the CA&ES Development Office at (530) 754-8961.

CASES OUTLOOK

College of Agricultural and Environmental Sciences #986H University of California One Shields Avenue Davis, CA 95616-8571 Nonprofit Org. U.S. Postage PAID UC DAVIS