

CA&ES

# Outlook

## GROWING GLOBAL

How our international programs are taking root

# CA&ES Outlook

is a publication of the  
College of Agricultural and  
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## EXECUTIVE EDITOR

Ann Filmer

## MANAGING EDITOR

John Stumbos

## ASSOCIATE EDITOR

Robin DeRieux

## GRAPHIC DESIGNER

Eric Rohr

## CONTRIBUTING WRITERS

Melissa Haworth  
Elisabeth Kauffman  
Deborah Rice  
Dawn Spinella  
Neal Van Alfen

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## UC DAVIS

COLLEGE OF AGRICULTURAL  
AND ENVIRONMENTAL SCIENCES

## DEAN'S OFFICE

University of California  
One Shields Avenue  
Davis, CA 95616-8571  
Phone (530) 752-0108  
Fax (530) 752-9049  
[outlook@agdean.ucdavis.edu](mailto:outlook@agdean.ucdavis.edu)

[www.caes.ucdavis.edu](http://www.caes.ucdavis.edu)

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## COVER STORY

UC Davis' international  
stature has been bolstered  
by innovative new programs  
and research projects.

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NEIL MICHEL/AXIOM

**COVER PHOTO:** The staff of the  
CA&ES International Programs Office (IPO) is  
helping UC Davis facilitate new connections  
with developing countries around the globe.

**AT LEFT:** The core IPO staff includes (back row,  
from left) Paul Marcotte, Corky Lovin, Mark Bell,  
Shadi Atallah, Jim Hill; (front row) Donna Maricich,  
Becca Irvine, Mark Henderson, and Rachel  
Abrenilla. Learn more at <http://ip.ucdavis.edu>.

## CA&ES NOW ON FACEBOOK, TWITTER

You can now keep in touch with the College of Agricultural and Environmental Sciences on Facebook and Twitter. Become a CA&ES fan on Facebook and learn lots of new things about the college while connecting with other CA&ES alumni around the world. Then follow us on three new Twitter profiles: **@ucdavisCAES** (for general college news), **@EnviroScience** (for environmental sciences), and **@AgFoodScience** (for agricultural and food industry-related topics).



## REACHING OUT

### UC Davis is building bridges throughout the world

ONE OF THE DEFINING CHARACTERISTICS OF UC Davis is its multicultural nature and long history of research and outreach in other countries. We have become a truly “internationalized” campus and are becoming more so as a result of goals set by the faculty and led by the chancellor’s administration.

UC Davis is among the top five universities in the country, public or private, for international scholars—about 2,500 during the last academic year. Close to half of them are visiting the College of Agricultural and Environmental Sciences. They are drawn here because we are recognized worldwide for the excellence of our programs.

In 2005, we reorganized our International Programs Office to stimulate new initiatives within the college. Under the leadership of associate dean Jim Hill, we’ve seen a significant increase in the number of projects funded by the U.S. government or by host countries. These projects expand upon the impressive portfolio of undertakings by individual faculty members, such as the development of major nutrition programs in Africa.

Capacity building is a term you hear in association with projects in developing countries struggling with the most challenging conditions imaginable. Years of war and drought have taken a toll on agriculture in Iraq and Afghanistan. Members of our faculty are directly involved in helping those countries rebuild their agricultural education systems to enhance food security and improve economic conditions. Helping people reclaim self-sufficiency beckons to our better nature as global citizens.

We also need to strengthen international relationships to maintain our competitive edge in the global marketplace. Valuable genetic traits for the crops we produce in California can be found in the domesticated cultivars and wild plant relatives in foreign lands. A good example of this is in the work of plant scientist Jorge Dubcovsky, who led an international team that identified a gene to protect wheat from stripe rust, a disease that can cause severe crop losses. Keep in mind that virtually all the crops we grow in California originated somewhere else.



Dean Neal Van Alfen visits a fish market in Tokyo with UC Davis lecturer Kazue Chavez, East Asian Languages and Cultures.

Building research partnerships and industry relationships in international markets supports domestic economic growth. A study by our Agricultural Issues Center determined California agricultural exports reached an all-time high of \$10.9 billion in 2007. That’s an 11 percent increase from the previous year and the sixth straight year of continued growth in the sale value of agricultural products to foreign destinations.

International projects also give our students a chance to learn about and experience the world, something employers want from our students. In addition to

*In my travels, I frequently enjoy the hospitality of our alumni abroad. Our extended UC Davis family is indeed a global one.*

international scholars, several thousand students from foreign countries attend UC Davis every year. These folks often become industry and government leaders in countries throughout the world. In my travels, I frequently enjoy the hospitality of our alumni abroad. Our extended UC Davis family is indeed a global one.

This issue of our magazine offers a “world tour” of sorts to sample the breadth and diversity of our international programs and research projects. Let us know what you think. We value your feedback.

NEAL VAN ALFEN, DEAN  
COLLEGE OF AGRICULTURAL AND  
ENVIRONMENTAL SCIENCES



**In June 2008, the president of Chile and UC Davis leaders formalized agreements to collaborate on teaching and research in grape growing, winemaking, crop genetics, and plant breeding.**



**A \$16 million grant from the Bill & Melinda Gates Foundation, announced in November 2008, will enable a UC Davis nutrition professor to lead an international effort to prevent childhood malnutrition in developing countries.**



**Since 2006, CA&ES faculty have acted as mentors for visiting Vietnamese faculty, as Vietnam seeks to westernize higher education by offering curricula from UC Davis and other American universities.**

News like this has become more common as UC Davis—and the College of Agricultural and Environmental Sciences—becomes a more internationalized campus.

Since early in campus history, UC Davis agricultural scientists traveled abroad in search of genetic resources to strengthen California's agricultural diversity. In the 1940s, viticulture professor Harold Olmo visited Afghanistan to find new grape cultivars that would help revitalize wine production in California. For nearly five decades, starting in 1948, plant scientist Charles Rick scoured South America for new types of tomatoes. In the 1970s and beyond, animal science geneticist Eric Bradford ventured into Kenya, Indonesia, and Morocco to study livestock for food production. Today, a new generation of UC Davis faculty is expanding scientific inquiry and establishing new programs in far reaches of the globe.

# Growing Global

**The many ways UC Davis touches the world**

by John Stumbos, Robin DeRieux, and Ann Filmer





# Davis, Calif.

NEIL MICHEL/AXIOM



Associate dean Jim Hill leads the college's International Programs Office.

## International Programs Office expands

**I**n 2005, after a campuswide review recommended an institutional effort to support the international work of individual faculty members, CA&ES created a new associate dean position in the International Programs Office (IPO). Jim Hill, a UC Davis Cooperative Extension specialist who for three years directed a global program on irrigated rice at the International Rice Research Institute in the Philippines, holds that post.

“Broadening our horizons internationally makes sense on many different levels,” Hill says. “It improves the quality of undergraduate and graduate education, raises the visibility of UC Davis as a ‘preferred partner’ in

agricultural and environmental sciences, and it expands our research capabilities to help California agriculture keep its competitive advantage.”

Consider also that virtually all the crops grown in California have their origin overseas. Access to the genetic diversity that exists in crops and livestock from other countries is crucial to help build resistance to pests and diseases, to improve product quality, and to enhance the nutritional value of our food. Building relationships abroad can also be an important means of opening new international markets.

Helping developing countries build or, in some cases, rebuild their agriculture and manage their natural

resources contributes to global stability by addressing the most basic of human needs for nutritious food and dependable, clean water. Training and education of farmers in developing countries also stimulates economic development and enhances environmental sustainability.

The International Programs Office manages nearly 20 major projects with a staff of eight and the broad engagement of many members of the faculty. IPO projects are concentrated in Asia and the Middle East but include countries on other

continents as well. Many projects involve other land-grant university partners like Cornell, Purdue, Texas A&M, and Washington State University.

“We’re training agricultural extension agents from Iraq, developing plant and food sciences curricula in Vietnam, and helping California producers make connections with emerging markets in Eastern Europe and elsewhere,” Hill says. “Faculty engagement is strengthened through these programs and, ultimately, we all benefit from these efforts.”

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## A top destination for scholars

**U**C Davis is one of the top destinations in the country for international scholars. In the 2007–2008 academic year, for instance, UC Davis hosted 2,500 visiting researchers, lecturers, and faculty. Other universities in the top five include Harvard, Stanford, Columbia, and UC Berkeley.

Nearly half these international scholars were CA&ES visitors. One of the IPO-managed programs bringing them here is the Cochran Fellowship Program, funded by USDA’s Foreign Agricultural Service. The Cochran program provides short-term training of two to four weeks for agricultural professionals from emerging market countries. Fellows are typically senior and mid-level specialists and administrators from agribusinesses, government departments, universities, and other agricultural organizations who are concerned with agricultural trade, agribusiness development, management, policy, and marketing.

“Training and education facilitates our ability to sell agricultural products, especially many of the value-added products we produce in California,” says Corky Lovin, who runs the program at UC Davis. “We offer a mix of technical instruction, practical field observations, and hands-on experience, but we don’t provide training that directly enhances a country’s ability to export goods in competition with the United States.”

Lovin arranged for one recent group of visitors from India to learn about farm-to-fork produce programs and marketing produce with minimal waste. Other recent visitors from Kosovo and Moldova were interested in fruit and vegetable processing. Two other groups—one from Africa, the other from the Ukraine—established seafood marketing connections. Many Cochran Fellows represent food safety and phytosanitary institutions.

A case study of the Cochran program by the U.S. Interagency Workgroup said that it has helped resolve



JOHN STUMBOS/UC DAVIS

UC Davis agricultural specialist Corky Lovin (second from left) speaks with Brazilian dairy and meat inspectors visiting California through the Cochran program in April 2009.

trade disputes, decrease some nontariff trade barriers, and foster collaboration between the public and private sectors of the United States and participating countries. At least two Cochran Fellows have gone on to become ministers of agriculture and have pledged to work closely with the U.S. on nontariff trade barriers. The USDA estimates that the Cochran program stimulates \$25 million in business for U.S. agricultural products per year, many of these first-time purchases.

**Programs like this—and the projects we profile in the following pages—are helping establish mutually beneficial connections between California and other countries. Read on to learn how UC Davis is engaging the campus in world affairs.**





# Africa

COURTESY



Weighing babies and mothers helps track the impact of fat-based nutritional supplements on malnutrition.

## Preventing childhood malnutrition

**P**rofessor Kay Dewey and fellow researchers are finding low-cost ways to prevent childhood malnutrition in developing countries. Dewey, a faculty member in the Department of Nutrition, coordinates an international network of researchers who are investigating the impact of fortified lipid-based nutritional supplements on the health of pregnant women and young children in the African nations of Ghana, Burkina Faso, and Malawi.

“In developing countries, babies tend to do pretty well

for the first six months, while they’re being breastfed exclusively,” said Dewey. “But they falter dramatically in growth between six and eighteen months.”

Initial studies in Africa show that lipid- or fat-based nutrient supplements are a highly effective way to treat and prevent malnutrition in young children. On the basis of this promising work, the Bill & Melinda Gates Foundation pledged \$16 million to support further research on lipid-based supplements by an international network of collaborators. The U.S. Agency for International Development has also



pledged \$4 million to \$5 million to help evaluate the use of supplements in program settings.

In addition to Dewey, the research network includes African and European participants, as well as UC Davis collaborators Ken Brown, a pediatrician and professor of nutrition; Lindsay Allen, director of USDA's Western Human Nutrition Research Center; and Steve Vosti, a professor of agricultural and resource economics.

The French firm Nutriset produces several lipid-based formulations that Dewey and other researchers have helped develop for use in their studies. One product is Nutributter, which is made of peanut butter, milk powder, vegetable oil, and a bit of sugar, fortified with vitamins and minerals. Creamy, dense, and mildly sweet, it contains essential fatty acids that are critical for neurological development. Nutributter is made to be spooned into home-prepared foods, and it can be stored without refrigeration. Unlike reconstituted powdered milk, it doesn't require clean drinking water.

One of the goals of the project in Africa is to evaluate the economics of producing and marketing food supplements like Nutributter locally, at a cost affordable to the poor. In several developing countries, local production of lipid-based nutrient supplements has begun. "I feel fortunate that the process of turning our basic research on these supplements into working programs is highly valued at UC Davis," said Dewey.



COURTESY

Professor Kay Dewey (front row, third from right) stands between her formal doctoral students Seth Adu-Afarwuch (second from right) and Anna Lartey (fourth from right). The two UC Davis alumni are project leaders in Ghana.

"We hope that these interventions, by improving health and ultimately the productivity of the population, will eventually help lift people out of the poverty that underlies childhood malnutrition." — R.D.

## Livestock program helps finances and families

**F**ood security—the confidence that there will be enough to eat—is tenuous in many parts of the world, especially rural Africa. UC Davis is headquarters of the Global Livestock Collaborative Research Support Program (GL-CRSP), an international network of universities and organizations whose goal is to improve small-holder livelihoods through increased household income and better nutrition.

"Agriculture is fundamental to the well-being of people around the world, particularly to the poorest people in the world who live on a dollar or two a day. They spend 80 percent of their income on food," says Tag Demment, plant sciences professor and director of the GL-CRSP.

For 30 years the GL-CRSP office at UC Davis has overseen livestock projects in Africa, Afghanistan, Mongolia, and elsewhere. Funding comes from the U.S. Agency for International Development, with cost-



DANIELE KNUJEPPEL/UC DAVIS

A GL-CRSP participant feeds his chickens in Kitelewasi, Tanzania.



Professor Tag Demment (left) discusses a childhood nutrition project with the village chief (right) in Techiman, Ghana.

“This program is one of the highest-funded projects ever on this campus. UC Davis is the U.S. leader in the global livestock research issue.”

sharing contributions from participating institutions and countries. In Ghana, Ethiopia, Tanzania, Kenya, and Mali, researchers from UC Davis and other universities work to improve livestock production, which helps economic development, quality of life, and environmental stewardship.

“This program is one of the highest-funded projects ever on this campus,” says Demment. “Our total funding is close to \$100 million. UC Davis is the U.S. leader in the global livestock research issue.”

In areas of Africa where livestock are an important part of the diet, especially for children, many people lack the training to establish livestock production systems or even to develop market plans to get loans. They also lack

the technology that can provide useful information like weather prediction and market prices.

At the same time, livestock production is threatened by overlapping problems such as development in rural areas, infectious diseases (human and livestock), dwindling natural resources (drought and soil erosion), and political instability. GL-CRSP researchers must work within these constraints to improve livestock production.

The success of the GL-CRSP program hinges on working with local partners who have a lot of say about what will or won't work in their countries. In addition to conducting collaborative research, the program helps build the capacity of local people and institutions, such as teaching them to manage money and how to direct interdisciplinary projects.

Demment has spent 40 years conducting hands-on research in Africa. His work illustrates that the land-grant university model helps improve the lives of families and communities. Stressing the humanitarian role of UC Davis, Demment notes, “UC Davis has the power—intellectual and scientific—to really make a difference the world over and to change people's lives. And we have.” — A.F.



Ghanaian women participate in a GL-CRSP project.



## Empowering women in Ghana

**I**n developing countries where rural women have few resources, feeding children healthfully and affordably is a challenge. This is especially true in Ghana, where poverty and lack of knowledge about nutrition are often the biggest obstacles in improving children's diets. GL-CRSP projects have been very successful in working with women to improve family finances and children's nutrition.

Decades ago UC researchers and others found that animal-source foods are the only dietary item that predicts cognitive and academic performance in children in some areas of rural Africa. Even very small amounts of meat in children's diet each day improved IQ scores, leadership skills, and energy levels. However, getting children adequate quantities of meat is difficult.

Given that poverty and lack of education are roadblocks to nutrition, the Global Livestock CRSP set up projects in Ghana to educate women about nutrition and to improve their finances. "Local Ghanaian women were trained to go to villages, organize the women, and teach them how important meat is in child development," said Tag Demment, plant sciences professor and director of the GL-CRSP.

Through the nonprofit Heifer International and the GL-CRSP, women were also taught to raise and produce

The poultry project is one of many examples in which empowering women helps children get better food and helps families earn and save money. Inspiring stories of many successful projects can be read in the GL-CRSP newsletter, "Ruminations" (<http://glcrsp.ucdavis.edu>).

chickens. A microfinance scheme was established, giving women small start-up loans and teaching them how to keep track of the money.

After one year, many of the women—living in mud huts—saved upward of \$1,000 from the sale of poultry and eggs. Most impressively, there was a 100-percent repayment on the loans. The local rural bank was so moved that it requested training so that it could finance future poultry projects.

"This project put together the critical elements in building the capacity of women's groups to be successful," Demment said. "You can't just give them microfinance, you can't just tell them how to raise chickens, you can't just educate them about nutrition. You have to put the package together. This project has been incredibly successful." — A.F.

# Using crop biodiversity to improve agriculture

COURTESY



Professor Paul Gepts, bottom left, met with colleagues in Uganda for a plant breeding project that will enable East Africans to increase bean production using DNA marker-assisted selection.

PAUL GEPTS/UC DAVIS



Latin American farmers began the practice of growing beans, corn, and squash together, a cropping system that has also been adopted by growers in Eastern Africa.

Professor Paul Gepts is helping bean breeders in East Africa use DNA-assisted selection to increase bean production for sustenance and revenue. The UC Davis plant geneticist is lead scientist for a project called the African Bean Consortium-Kirkhouse Trust (ABC-KT). Financed by a British charity, the bean genetics project began in 2006 and includes more than 30 collaborators from Rwanda, Uganda, Kenya, and Tanzania.

“Basically, we start from scratch,” said Gepts, who has studied beans for more than 30 years. “The breeders we work with have been educated in Europe or the United States, but they lack resources—greenhouses, field equipment, labs. This project will establish infrastructure in these countries that allows breeders to analyze plant DNA—not just any DNA, but the markers that are linked to disease-resistant genes.”

Beans are a vital source of protein for humans, particularly in developing countries. Despite the importance of beans to the East African diet—where they provide up to 40 percent of protein intake—beans are not native to Africa. The multitude of bean varieties we know today evolved from two primary lines that were first domesticated thousands of years ago, one in present-day Mexico, and another in the Andes Mountains.

Gepts and fellow researchers have made many trips to Mexico and Latin America to collect “landraces” (farmer-selected varieties) and new populations of wild beans in an effort to preserve bean biodiversity. Conserving genetic diversity is critical to increasing the productivity of beans and the sustainability of agriculture through breeding programs.

“International research is where the action is because most crop biodiversity is in the tropics and subtropics,” said Gepts, whose fluency in several languages helps facilitate his work abroad.

Back on campus, the Gepts lab analyzes the DNA of plants collected abroad to trace their parentage. His lab also develops genetic markers that correspond to resistance against pathogens or other adverse conditions. Plant breeders use DNA markers to help select parents that will pass the desired traits to their offspring. Breeding plants using DNA-assisted selection dramatically shortens the time required to develop new varieties.

The ABC-KT project in East Africa aims to breed bean plants that are more tolerant to disease and to shorten the time between basic and applied research. “Doing these international projects is good for breeders everywhere,” said Gepts. “Growers here benefit from discoveries we make while doing research abroad.” — R.D.





# Middle East



LOUISE FERGUSON/UC DAVIS

UC Davis specialist emeritus Ron Voss (with cap) talks to a group of Iraqi agricultural extension agents on a tour of the Jordan Valley.

## On the front lines of development in Iraq

**I**n December 2008, UC Davis horticulturist Louise Ferguson donned a flak jacket and military helmet as she prepared to board the Rhino, an armored vehicle that “looks like a Hummer on steroids.”

“That’s how you cross Baghdad in the middle of the night,” she said of her recent trip. The UC Davis Cooperative Extension specialist is part of a team of UC Davis agricultural scientists participating in the Iraq Agricultural Extension Revitalization (IAER) program.

Funded through USDA’s Foreign Agricultural Service, the effort involves land-grant universities in California, Washington, Utah, Texas, and New Mexico. Each

university in this “Aggie Consortium” focuses on one area of agricultural production.

“The agricultural system in Iraq is in shambles,” said UC Cooperative Extension specialist emeritus Ron Voss, who has been recruited in the effort for his expertise in vegetable production and also to coordinate the UC Davis part of the mission. “The Iraqi people are having a hard time feeding themselves, and the people involved in agriculture there are finding it difficult to make a living.”

Iraq farms many of the same crops grown in California—citrus, grapes, apples, olives, pomegranates, tomatoes, melons, potatoes, onions, and peppers. In the



As part of an effort to revitalize agriculture in Iraq, agricultural educators visit a greenhouse to learn about a pest problem.

first part of the project (October 2006-September 2008), more than 100 Iraqi extension agents visited Jordan and Egypt—safe, neutral countries—to gain horticultural expertise from UC Davis scientists in crop production, postharvest technology, plant propagation and establishment, and pest, soil, and water management.

In February 2008, professor emeritus of postharvest physiology Adel Kader (with the help of UC Davis alumni Dr. Najib Elassi, University of Jordan, and Dr. Awad Hussein, University of Alexandria, Egypt), presented a week-long short course on postharvest quality and safety maintenance of horticultural perishables in Amman, Jordan, for 30 Iraqi agricultural extension agents and university instructors.

“We communicated in Arabic and encouraged questions and discussions,” Kader said. “The program included two field trips to the Amman fruit and vegetable wholesale market and to a few packinghouses in the Jordan Valley. Overall, the course was very well received by the participants, and they greatly appreciated all the resources they received with this course.”

Entomology professor Frank Zalom, a specialist in integrated pest management, was part of a team presenting information in Jordan during April 2008.

“Spending an intense week of training and traveling with the Iraqis afforded me an opportunity to get to know a number of them on a more personal level,” he said. “I was struck by how life—and indeed farming—must go on, even under difficult conditions. I felt that I learned easily as much as I could have possibly taught.”

A dozen Iraqi specialists visited UC Davis this spring for training in extension techniques and in subject matter competency. More than 20 campus and county-based UC scientists assisted in the effort. The Iraqis’ itinerary included Kader’s renowned postharvest short course.

At the conclusion of the training, the attendees will return to Iraq armed with leaflets, pamphlets, bulletins, and fact sheets translated into Arabic, and computers loaded with a variety of other materials and extension training modules that will equip them to train others upon their return.

“The current generation of young scientists has never been outside of Iraq to study,” Voss says. “This program is an opportunity for us to do something positive. Our hope is that the IAER program will elevate subject matter competency and help improve their ability to share agricultural information through extension techniques used in California.” — J.S.



## Spreading sunshine in the Valley of the Nile

“**E**l shams” in Arabic means “the sun.” EL SHAMS is an acronym for Enhanced Livelihoods from Smallholder Horticultural Activities Managed Sustainably, a project involving UC Davis faculty and California producers to help in the ongoing transformation of Egyptian agriculture.

The 2004–2008 project, funded by the U.S. Agency for International Development (USAID), sought to improve exports of high-value horticultural crops from Egypt’s small- and medium-sized farms through train-the-trainer workshops in postharvest handling of fresh fruits and vegetables. The workshops were held in Egypt and at UC Davis.

“I was impressed by the eagerness of the Egyptian horticultural crop producers and farm advisers who participated in these workshops to learn and share their knowledge with others,” said Adel Kader, UC Davis professor emeritus.

EL SHAMS also helped organize farmer associations and provided grants for infrastructure improvements. “Many improvements in production and postharvest handling to assure the quality and safety of fruits and vegetables produced in southern Egypt resulted from the EL SHAMS project,” said Awad Hussein, a UC Davis alumnus and University of Alexandria faculty member who served as training director.

CA&ES faculty have a long history of involvement in the agricultural development of Egypt. Three other projects with a major impact include:

**The Agricultural Development Systems Project (1979–1983)** 200 Egyptian scientists gained advanced training, and 650 Egyptian researchers collaborated with 130 U.S. counterparts. Forty-six research projects were completed in horticultural production and postharvest handling, price policy, agricultural marketing, human capital and social institutions, food security, land and water use, food technologies, livestock production, and irrigation.

**The Rice Research and Training Project (1980–1986)** UC Davis contracted with USAID to help improve the production and quality of rice in Egypt. The project helped improve and enlarge research programs, develop an effective extension program, acquire mechanized equipment for rice cultivation, create a pure seed program to solve seed production problems, and construct laboratories, offices, and field facilities.



Awad Hussein, a UC Davis alumnus and University of Alexandria faculty member, shows a group of Egyptian agricultural extension agents visiting UC Davis how to take a cantaloupe sample in a postharvest laboratory.

**Agricultural Technology Utilization and Transfer (1996–1999)** CA&ES provided technical assistance with horticultural production, postharvest know-how, and training program development. The program sought to ensure profitable and sustainable production, increase produce quality and safety, and reduce postharvest losses for grapes, strawberries, melons, and vegetables.

“Over many years, our faculty have developed participatory approaches to build organizational capacity, business skills, technical knowledge, and marketing intelligence in Egypt,” said Jim Hill, CA&ES associate dean for international programs. “By showing farmers how to inform and organize themselves to meet the demands of high-value domestic and export markets, we are building partnerships that strengthen relations between our countries.” — J.S.



# Asia

JIM HILL/UC DAVIS



A typical street-side fruit and vegetable market in Kabul. Much produce is lost because of poor production practices and postharvest handling before it ever reaches the marketplace.

## Rebuilding Afghanistan's agriculture

Perhaps nowhere else in the world have agricultural scientists faced a more daunting challenge than in Afghanistan.

An agricultural system that once provided income for about 80 percent of the Afghan population is recovering from decades of war and a harsh drought that decimated the Central Asian country's production capacity and educational infrastructure.

In 2005, UC Davis joined with other American universities, the U.S. government, and nongovernmental organizations to help rebuild Afghanistan's agricultural capacity. These groups are working with the Afghan Ministry of Agriculture, Irrigation, and Livestock and five agricultural universities in Kabul, Herat, Kandahar, Nangarhar, and Balkh.

"When every single thing is broken, where do you begin?" asks Thomas Rost, UC Davis plant biology professor emeritus who traveled in 2008 to Afghanistan to assess curricula and to evaluate teaching capacity.

"The university was destroyed by war," Rost reports. "Buildings are pockmarked with bullet holes and shrapnel. Some buildings had been blown up and have since been rebuilt. Those that remained were seriously looted."

Kabul University agriculture students have no books, no copy machines, and very slow Internet access, when available. Information is outdated and the concept of a curriculum is new. Professors supplement their meager salaries with other jobs.

"It really is very difficult for the students," Rost says. "But they are so focused and so enthusiastic. You can see it in their eyes, and that gives you hope."



UC Davis has a long history with Afghanistan, stemming back to a more stable time in its history. In the 1940s, viticulture and enology professor Harold Olmo traveled there to collect wild grapevines for breeding with California stock. Afghanistan shares a climate and many crops in common with California in addition to grapes—almonds, citrus, stone fruits, pomegranates, pistachios, and apples.

In other rebuilding efforts, UC Davis and the nonprofit Roots of Peace provided training in vineyard development and postharvest handling of grapes and

raisins. Another project is training Afghan nurserymen to improve almond seedlings. UC Davis is leading a project with Purdue and Cornell to help Afghanistan improve its agricultural extension service.

“You have to start somewhere,” says CA&ES associate dean Jim Hill. “We are also initiating efforts to get the brightest young Afghan students to the United States and other countries for better training and a different perspective. Young, enthusiastic, well-trained scientists will be instrumental in rebuilding Afghanistan’s agriculture.” — J.S.

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## Vietnam learns the UC Davis way

**H**ow do you transplant a curriculum from one country to another? “It takes teamwork,” says Professor Glenn Young, director of the Food Science Curriculum Development Program between UC Davis and Nong Lam University in Ho Chi Minh City, Vietnam.

Two colleges in Vietnam are building new curricula for Vietnamese students based on majors at UC Davis. Courses are taught in English by Vietnamese faculty.

Since 2006, Hanoi University of Agriculture has partnered with the UC Davis Department of Plant Sciences to offer the crop science and management degree to approximately 50 honors students per year. A similar partnership between Nong Lam University in Ho Chi Minh City and the Department of Food Science and Technology began in the fall of 2008. A curriculum-building venture in environmental science between Thai Nguyen University of Agriculture and Forestry and UC Davis is in the planning stages.

These curriculum-building agreements are financed by the Vietnamese central government in an effort to transform their system of higher education from the Soviet model of teaching to a more Western approach, English and all. Vietnamese universities compete for funding from the Vietnamese Ministry of Education and Training.

The success of curriculum development proposals that feature UC Davis as a partner is due in part to the efforts of Cary Trexler, a professor of agricultural education from the UC Davis School of Education who spent last year in Vietnam as a Fulbright Fellow. Trexler has been working with Vietnamese agricultural universities for six years, serving as an intermediary for faculty interested in transforming agricultural education in a nation where family farms are prevalent, and the economy is still driven by agriculture.



GLENN YOUNG/UC DAVIS

Tropical fruits are increasingly important to farmers in Vietnam.

Plant sciences professor Richard Plant, who directs the collaboration with Hanoi University of Agriculture, said Vietnam sends two or three faculty members to UC Davis each quarter to audit courses that they will later teach at home. The college’s International Programs Office helps visiting faculty find short-term housing, and Vietnamese-American students on campus help visitors handle the culture shock. Often, the plant science faculty members who teach the class at UC Davis subsequently travel to Vietnam to assist in starting the course there.

The curriculum-building partnership between the Department of Food Science and Technology and Nong Lam University is based on a similar model. “Agriculture is international,” says Young, a food microbiologist who hosted a Vietnamese faculty member last fall. “International work allows our faculty to understand the diversity of the field beyond our borders.” — R.D.

# Clean waterways for China

RANDY DAHLGREN/UC DAVIS



For UC Davis scientists, analyzing pollution from Chinese rivers is an opportunity to track what happens to high quantities of chemicals as they degrade and move downstream.

## CHINESE SCHOLARS A MAJOR PRESENCE

The late food chemist Bor Luh, who moved with the food science department from Berkeley to the Davis campus in 1950, helped facilitate an exchange between UC Davis faculty and peers in China.

“He had many friends and contacts,” said food science professor Charles Shoemaker. “When China began to open up, that reinvigorated his contacts even more and, as a consequence, we had some of the first faculty visitors from China in the 1980s.”

Today, about 20 percent of the 2,500 international scholars visiting UC Davis are from China. Collaboration between UC Davis and Chinese universities has given rise to the International Conference on Food Science and Technology, held every three years and next scheduled at UC Davis June 4–5.

“The Chinese have always looked at food as medicine,” Shoemaker says of future research possibilities. “In foods for health—and in other areas—they present a great opportunity.” — J.S.

Rapid industrialization in China in recent years has led to severe environmental contamination. Scientists from UC Davis are collaborating with Chinese researchers to monitor water quality and to seek solutions for mitigating pollution in the inland port of Wenzhou, a delta town south of Shanghai with rivers that drain into the East China Sea.

“The river water in Wenzhou is not suitable for human contact,” said Professor Minghua Zhang, a hydrologist in the Department of Land, Air and Water Resources. “The water has huge concentrations of nitrates, ammonia, heavy metals, and phosphorus. It has garbage floating in it. The Chinese government and the people who live in Wenzhou are very concerned about cleaning it up.”

A native of China, Zhang is part of a large team of researchers from UC Davis, Wenzhou Medical College, and her alma mater, Zhejiang University, who are collaborating to improve the water quality in Wenzhou. The research team includes Randy Dahlgren and Jan Hopmans, professors of land, air and water resources. The Chinese government has funded a three-year research project to clean up the river.

In the past decade or so, the city of Wenzhou has mushroomed from a population of a million people to almost seven million. Untreated wastewater and industrial discharge contaminate surrounding waterways, where people do their laundry, raise ducks for consumption, and fish.

In March 2008, several CA&ES faculty members—Professor Mark Schwartz of environmental science and policy, Professor Shu Geng of plant sciences, as well as four faculty from land, air and water resources—traveled to Wenzhou to meet with officials, examine the watershed, and take samples from the river.

One problem they observed was inadequate effluent control. Zhang notes that mitigation is important but ineffective when local residents and businesses continue dumping contaminants into the rivers. She and other researchers analyze polluted water from Chinese rivers in laboratories at Zhejiang University and at UC Davis.

From an environmental standpoint, water contamination in China and other rapidly developing countries affects people worldwide since pollutants don't observe national boundaries. “Global issues require a global team,” said Zhang. “Water quality is not just an issue for China; it impacts all of us.” — R.D.





# Latin America



UC Davis agricultural economics researcher Marcelo Torres (top) discusses water allocation with a Brazilian scientist.

## Brazil plans for sustainable water management

**A** team of UC Davis researchers is developing analytical tools to help Brazil make the most of its abundant water supplies to promote rural development, enhance food security, alleviate poverty, and maintain environmental quality.

The effort is a project funded by the Consultative Group on International Agricultural Research (CGIAR),

a global network of 15 research centers working in collaboration with hundreds of governments, nongovernmental organizations, businesses, and universities.

The project focuses on the 1,100-mile long São Francisco River Basin, a region that has experienced uneven economic development. The team is led by Steve Vosti, adjunct professor of agricultural and resource economics, and Wes Wallender, professor of land, air and water resources, and of biological and agricultural engineering.



On a small-scale farm in Petrolina, Brazil, two women clean table grapes with small scissors to meet demanding product quality standards of the European market.

They assessed rural poverty, agricultural activities, and access to water in 469 districts and developed hydrologic and economic models that included upstream-downstream interrelationships. These models can be used to predict the effects of alternative policies on agriculture and on water use.

According to CGIAR, economic development has come at a price in the São Francisco River Basin. Pollution and land degradation threaten not only the region's rich biodiversity but also the livelihoods of marginalized groups, water supplies, and health. Urban sewage, industrial effluents, and agrochemicals (mainly in irrigated areas) have seriously polluted major tributaries. The region's traditional fishery is in decline due to lower fish populations, partially a result of the construction of large hydroelectric dams. Conflicts over water use are becoming more frequent as the quality and quantity of the available supply falls short of increasing demand.

"Policymakers lacked a scientific basis for understanding the consequences of policies that could affect agricultural water-use decisions," Vosti said.

"To fill these knowledge gaps, we quantified water availability throughout the basin and sought to understand its relationship to agricultural development and rural poverty. We also developed the first hydro-economic models capable of examining the effects of policies on groundwater use."

According to Wallender, the hydro-economic models were developed by UC Davis doctoral students studying the effects of reduced water deliveries to the west side of California's San Joaquin Valley. "The predicted reductions in economic returns were less than the forecast reductions in water delivery, as farmers in California adapted to water shortages," he said. "We predicted similar results for Brazilian farmers as they changed their cropping patterns during a drought."

The UC Davis group worked with Embrapa, Brazil's national corporation for agricultural research, to conduct the studies and to publish findings in the research community and for government officials in Brazil. To learn more about this project, link to CGIAR's "Challenge Program" on water and food: <http://www.waterandfood.org/about-cpwf.html>. — J.S.



## Chile and California: fruitful partners

**C**hile and California make good partners. The two share similar geography and climates and grow many of the same crops. UC Davis has been at the heart of teaching and research collaborations with Chile, which began in the 1960s and '70s, when more than 50 Chilean students did graduate work in agricultural sciences in our college and returned to Chile to transform their country's agriculture.

The partnership between California and Chile works well because our locations in different hemispheres create opposite growing seasons, which means that most of Chile's fresh produce exports complement rather than compete with those grown here. "Having high-quality fresh fruit available during the offseason creates greater demand overall," says Dean Neal Van Alfen. "It gets people consuming, so our collaborations with Chile have increased the total overall market."

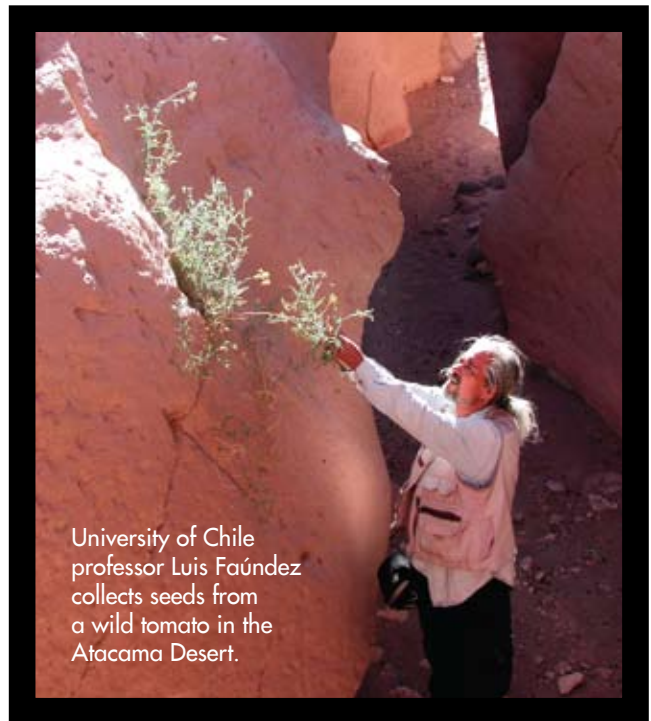
*"Having high-quality fresh fruit available during the offseason creates greater demand overall."*

In June 2008, the relationship between UC Davis and Chile bloomed anew when Dean Van Alfen, Chancellor Larry Vanderhoef, Governor Arnold Schwarzenegger, and Chilean President Michelle Bachelet signed agreements that pledge Chilean funding for new research and teaching collaborations in viticulture, enology, plant breeding, and genetics. Using profits from copper exports, the Chilean government has also promised scholarships for Chilean students to study at UC Davis and other University of California campuses.

One of the new accords with Chile proposes research collaborations on grapes and wine—with an emphasis on sustainable production and improving wine flavor. The Department of Viticulture and Enology is working with partners in the Chilean wine and vineyard industry, along with several Chilean universities, to develop potential projects that will benefit growers and vintners in both hemispheres.

Another agreement supports collaborations on crop genetics and plant breeding. The UC Davis Seed Biotechnology Center will work with the Chilean seed industry and academic partners to educate the next generation of plant breeders and to develop new crop varieties.

California tomato, potato, and strawberry growers have benefitted from collecting expeditions in Chile, where these plants grow wild. Roger Chetelat is director



University of Chile professor Luis Faúndez collects seeds from a wild tomato in the Atacama Desert.

CARL JONES/UC DAVIS



Chancellor Larry Vanderhoef, Chilean President Michelle Bachelet, Governor Arnold Schwarzenegger, and Chilean businessman Rafael Guilisasti look on as Dean Neal Van Alfen signs a new teaching and research agreement with Chile.

UC DAVIS POOL PHOTOGRAPHY

of the C.M. Rick Tomato Genetics Resource Center on campus, which holds one of the largest collections of tomato seeds in the world and includes species from Chile. A geneticist, Chetelat has collaborated with Chilean researchers on two trips to collect wild tomatoes in Chile and intends to return to do field studies on a tomato relative that thrives in the Atacama Desert, the driest desert in the world. — R.D.

FRANCISCO DEMINGO/AMINO UP



Ken-Ichi Kosuna (center) with fellowship awardees Erik Froyen and Roberta Holt.

## BACK TO NATURE

### Japanese business supports nutrition research

IN 1984, KEN-ICHI KOSUNA founded Amino Up, a Japanese biotechnology company that looks to nature for products contributing to human health. The company develops mushrooms, herbs, and other plants into patented high-tech extracts that promote heart health, fight allergies, and help treat cancer.

Kosuna has long been a supporter of UC Davis nutrition research. His gifts to UC Davis since 1998 have topped more than \$1 million in unrestricted support, earning Amino Up a distinction as one of the Chancellor's Laureates.

"I am a strong believer in the power of partnerships between university research and industry," Kosuna says. "That is what we have done in Japan and what we do at UC Davis because of its preeminence in nutrition research, and the quality of its faculty and students."

In 2005, Amino Up endowed both the Kosuna Doctoral Fellowship and the Kosuna Distinguished Lecture in Nutrition series. Nutri-

tion doctoral student Tony Momma was the 2008 fellowship recipient.

"The Kosuna fellowship will help send me to an international meeting where I can share my latest research with the top scientists in the field," Momma said.

In June 2009, the fifth Kosuna Distinguished Lecture will be delivered at UC Davis by Dr. Michael Dubrick, senior scientist at the U.S. Army's Institute of Surgical Research. His talk will focus on polyphenols and health promotion.

Kosuna's support has also helped fund research into heart-healthy compounds called flavanols, which are found in abundance in some plants. UC Davis research nutritionist Robert Hackman investigates flavanol-rich botanical extracts. He and his colleagues will soon publish a paper on a unique lychee-fruit extract developed by Amino Up.

"We are very grateful for this research support," Hackman said. "Mr. Kosuna's contributions to UC Davis help strengthen

#### GIFT PLANNING TIP

You can support your favorite campus program by listing the "UC Davis Foundation" as a beneficiary of your retirement accounts, life insurance policy, or other specific assets. This revocable designation offers you the satisfaction of knowing that your future gift will make a difference.

Mary Baer included a generous gift in her estate plans to the College of Agricultural and Environmental Sciences and the UC Davis Arboretum with specific annuities and investment accounts. When Ms. Baer passed in 2006, the Mary Baer Endowment for Agricultural and Environmental Sciences and the Mary Baer Endowment for the UC Davis Arboretum were established with her contributions. A portion of Ms. Baer's gift is also helping launch the GATEways project in the arboretum.

To designate UC Davis as a beneficiary, please specify the "UC Davis Foundation" and note the program you would like to support. Donors who include UC Davis in their estate plans may join the Peter J. and Carolee W. Shields Society and are invited to special campus events.

For more information, contact Christine Schmidt, (530) 752-6414, [cmschmidt@ucdavis.edu](mailto:cmschmidt@ucdavis.edu). Or go online: <http://plannedgiving.ucdavis.edu>.

our work on flavanols. Clinical research like this is the foundation of safer and more effective foods, beverages, and dietary supplements that ultimately benefit the consumer through improved health and nutrition."

— Melissa Haworth



# ARDOR FOR THE ARBORETUM

## Zeal for plants from Down Under spreads from India to UC Davis

### UC DAVIS ALUMNUS AND

New Zealand native George Mason (Ph.D., '60, plant physiology) is using his knowledge of and passion for plants in worthy endeavors ranging from helping the poor in India to improving the UC Davis Arboretum.

He and fellow Rotarians from New Zealand initiated a project to help Indian peasant farmers in a Himalayan border region improve water supply for households, animals, and crop irrigation. They made improvements to water catchments, tanks, and dams in order to capture summer monsoon rains.

"I have also been involved in the selection, propagation, and development of different cultivars of vegetables, fruits, and cut flowers introduced from New Zealand," he said. "These plants are being supplied to local farmers for sales as novel produce items for nearby markets in Chandigarh and Delhi."

Mason was a graduate student at UC Davis in the late 1950s, a time when the campus was "a sprawling collection of rec halls, farm buildings, and post-war Quonset huts

**"This project will provide another opportunity to connect people with plants that promote sustainable gardening practices."**

around the Quad." He received a teaching assistantship in weed science courses in the Department of Botany, an experience that had a major influence on his life.

"Plant physiology is fundamental to the understanding of plant growth and selective plant management as used in the weed control industry," Mason says. "I



George Mason's support is helping establish a new southern hemisphere garden in the UC Davis Arboretum.

am still involved in that industry."

Today, Mason's financial support and international connections are helping UC Davis create a southern hemisphere garden in the campus arboretum with plants from Australia and New Zealand.

The area is ideal because existing trees will provide summer shade for plant establishment. Among the heat-tolerant plantings will be a "ghost gum" woodland and New Zealand sedges, herbs, and flaxes.

"This project will provide another opportunity to connect people with plants that promote sustainable gardening practices,"

said arboretum director Kathleen Socolofsky. "Both the horticulture industry and home gardeners will benefit from new information about the performance of southern hemisphere plants in Central Valley conditions."

Mason's home in New Plymouth, on New Zealand's north island, is a region similar to Northern California with similar opportunities and challenges in large urban plant collections.

"A key feature of the UC Davis Arboretum is the management of water quality and flows in Putah Creek," Mason says. "Likewise, there is a parallel in water quality in Pukekura Park Lake, centered in the New Plymouth urban environment. I view this as a critical aspect of sustainable management of these two world-class plant collections."

— Deborah Rice

# FULL CIRCLE

## UC Davis alumnus and green revolution pioneer returns to campus

### ONE OF THE WORLD'S

leading plant scientists, UC Davis alumnus Gurdev Khush built a career as an eminent rice breeder that spanned more than three decades. For the last seven years he has been back on campus inspiring a new generation of inquisitive minds as an adjunct professor.

Khush (Ph.D., '60, Genetics), a native of Punjab, India, led the breeding program at the International Rice Research Institute (IRRI) in the Philippines for 34 years until 2002. Under his leadership, more than 300 breeding lines developed at IRRI have been released as new varieties by rice improvement programs throughout the world. He is credited with ushering in the green revolution in global rice production with the release of the variety 'IR36,' the most widely planted cultivar ever grown.

Professor Khush is a member of the National Academy of Sciences and Royal Society (London) and is a fellow of numerous professional societies. His accomplishments have earned him some of agriculture's most prestigious awards, including the Borlaug Award for Achievements in Plant Breeding (1977), the World Food Prize (1996), and the Wolf Prize in Agriculture (2000). He is also a recipient of the Emil M. Mrak International Award (1990).

"Gurdev Khush epitomizes the marriage of science and art related to improvement of food production," said colleague and UC Davis plant sciences professor emeritus Calvin Qualset. "As an IRRI scientist, he tirelessly conducted genetic research on rice traits important to the adaptation of rice to the fields of Asian farmers."

As a UC Davis graduate student in the late '50s, Khush studied

EUGENE HETTEL/IRRI



Rice varieties developed by Gurdev Khush (second from right) at the International Rice Research Institute in the Philippines have fed millions of people.

"Their passion for scientific inquiry inspired me, and I have fond memories of get-togethers at their homes and going on scientific outings with them."

under legendary geneticist Ledyard Stebbins and also worked as a postdoctoral researcher with famed plant breeder Charles Rick on the tomato genome.

"I learned to maintain the highest standards of research from

them," Khush said of his mentors. "Their passion for scientific inquiry inspired me, and I have fond memories of get-togethers at their homes and going on scientific outings with them."

Experiences like these are part of the reason Khush decided to return to UC Davis upon his retirement from IRRI in 2002. He leads a fall seminar on international agriculture and also shares his worldly experience as an adviser to graduate groups in International Agricultural Development and in Genetics.

"It's very enjoyable to interact with students," he says. "We have fascinating discussions on the world food supply, world hunger, genetic modification, and many other areas."

— John Stumbos



# 'SHARED HUMANITY'

Altruistic intentions and hard work lead Paul Hicks to a global career

## UC DAVIS ALUMNUS

Paul Hicks (M.S., '99, International Agricultural Development) is leading a rewarding life helping people in developing countries become better stewards of their land and water.

He works for Catholic Relief Services (CRS) managing a water resources program funded by the Howard G. Buffett Foundation that covers 20 watersheds in El Salvador, Guatemala, Honduras, and Nicaragua.

Hicks joined the Peace Corps in 1993 and was assigned to Honduras, where he began working on water and sanitation projects.

"About six months into my service, tropical storm Gert hit the north coast of Honduras and blew out most of the bridges in the area where I lived," Hicks recalls. "So my commutes involved biking, climbing trees, and wading through rivers. While this was horribly inconvenient for my Honduran friends and neighbors, I don't think I ever got over the idea, 'I'm in rural Honduras, on a mountain bike, wading through a tropical river – to get to work!'"

For two years Hicks helped Hondurans rehabilitate and build community water systems threatened by watershed degradation. His goal was to work with CRS, which urged him to consider the UC Davis International Agricultural Development (IAD) graduate program after the Peace Corps. In his successful graduate school application, he articulated his belief that using resources wisely and providing opportunities to help people become agents of their own development could lead to a more peaceful world.

"What I liked about IAD was



International Agricultural Development graduate Paul Hicks (right) has led an adventuresome and rewarding life since leaving UC Davis.

the focus on international rural development, and the integrated course work in agriculture, ecology, agricultural economics, and community development," he said. "I focused my own course work on soils and ecology, and worked on the Student Farm, where the crew out there taught me how to weed a field of lettuce, prune a fruit tree, and drive a tractor in a fairly straight line."

Hicks credits his graduate training with developing the right professional tools to manage a large program spanning four Central American countries. "You're always working in a team and interacting with partner organizations, local governments, donors, and others," Hicks says. "To be successful in this kind of work requires a broad set of skills that are hard to find in any one academic program.

The IAD program at UC Davis offers a rare opportunity to access a range of relevant courses."

Hicks, whose career has also taken him to Afghanistan, Albania, and the Philippines, has discovered that people the world over are much more alike than they are different.

"Within CRS we recognize 'solidarity' as a powerfully rich principle that gets to the root of our shared humanity," he said. "The real reward is experiencing solidarity in very tangible ways: eating baked wheat bread and goats' milk with an Afghan on his farm, or handmade corn tortillas and hot beans in the shack of a Nicaraguan family. That's good stuff."

— John Stumbos

## COMMON THREADS

College honors six women in agriculture



Common Threads participants (from left), CA&ES dean Neal Van Alfen, Barbara Ohlendorf, Francine Bradley, mistress of ceremonies Clare Hasler, Eloise Fischer Spence, Caroline Vann, Molly Watkins, Ann Silva, CALF interim CEO Charlie Crabb, and UC Davis Provost Enrique Lavernia.

SIX WOMEN FROM CENTRAL and Northern California who have made significant contributions to agriculture and to their communities were honored at UC Davis on March 5. The annual Common Threads event is sponsored by CA&ES and the California Agricultural Leadership Foundation.

Award recipients include Molly Watkins, a rancher and family farmer from San Joaquin County; Francine Bradley (B.S., M.S., avian sciences, Ph.D., physiology), a poultry specialist at UC Davis; Eloise Fischer Spence, a rancher from Calaveras County; Caroline Vann, a cattle rancher from Colusa County; Barbara Ohlendorf, a publications coordinator from UC Davis; and Ann Silva, a dairy farmer from San Joaquin County. In addition to distinguishing themselves in their careers, these women have all given back to their communities and educated the public about agriculture. For additional information, visit <http://commonthreads.ucdavis.edu>.

## SOMETHING'S BREWING

Work to begin on winery, brewery, and food science laboratory

CONSTRUCTION OF THE NEW Teaching and Research Winery and the August A. Busch III Brewing and Food Science Laboratory—an integral part of the Robert Mondavi Institute for Wine and Food Science at UC Davis—will begin this year.

The project will be constructed to achieve LEED (Leadership in Energy and Environmental Design) Platinum certification through the U.S. Green Building Council. Design features include onsite solar power generation, rainwater capture and water conservation and recycling, energy efficiency, carbon dioxide containment and

removal, use of local and recycled construction materials, and reduction of building site waste.

The winery, which has yet to be named, will include a large experimental fermentation area, controlled temperature rooms for large-scale testing, barrel and bottle cellars, a testing lab, a classroom and a special bottle cellar for donated wines. Landscaping outside the winery features a 12.5-acre teaching and research vineyard, and educational gardens.

The August A. Busch III Brewing and Food Science Laboratory will

house a flexible food processing pilot plant for tomatoes, olive oil, fruits and other California products, a dairy processing facility, and a pilot brewery.

The new facilities are being constructed entirely with private funds. The 34,000-square-foot building housing the winery and the laboratory will be completed in fall 2010.

For more information, please contact Kathy Barrientes, [ksbarrientes@ucdavis.edu](mailto:ksbarrientes@ucdavis.edu), (530) 752-1602, or Melissa Haworth, [mdhaworth@ucdavis.edu](mailto:mdhaworth@ucdavis.edu), (530) 754-8562.





*"This experience opened my eyes to issues related to both human well-being and wildlife protection."*

Zachary Bagley spent time as an undergraduate studying links between wildlife conservation efforts and local poverty in Kenya. "This experience opened my eyes to issues related to both human well-being and wildlife protection," says Bagley, now an IAD master's degree student. "I chose UC Davis because of its positive reputation in the agricultural realm, its proven experience in the international arena, and its connections with the Peace Corps."



Anna Petersons spent two years with the Peace Corps in the Republic of Niger, West Africa, helping the small rural community of Holloballe find solutions to its water needs. "I loved working with these small farmers in the middle of nowhere, but with only a bachelor's degree, I knew I wasn't qualified for a lot of jobs in agricultural development," she said. "The IAD program has given me what I was looking for—a broader perspective on global agriculture." Petersons began her master's degree in the UC Davis IAD graduate program in 2007. Over the 2009 winter quarter she took some time off to work in India with a start-up company helping small farmers with drip irrigation. She returned for spring quarter to complete the master's program.

## AGGIES ABROAD

Graduate students in agriculture put their passports to good use

### THE INTERNATIONAL AGRICULTURAL

Development Graduate Group at UC Davis is really going places. IAD graduates are spread from California to the Horn of Africa, making a difference wherever they go.

"We have alumni placed all over the world, working for the federal government, foundations, and many nongovernmental organizations," says program chair and plant sciences professor Richard Plant. "Our graduates are equipped with knowledge and skills that enable them to implement, facilitate, and manage programs in agricultural development, resource management, and rural life."

The graduate group was created in the 1980s to prepare students for careers in agricultural and rural development around the world. The interdisciplinary program draws on the knowledge of 80 faculty members in 31 departments across the campus. The IAD master's program, which admits 15–20 students annually, gives students an understanding of agricultural theory and application.

"Many of our students come with some experience, such as working with the Peace Corps or other organizations," says Plant. "Many of them did not have an undergraduate background in agriculture, and only realized the importance of agriculture after their own experience."

In addition to subject matter within agriculture and social sciences, IAD students learn about development, leadership and management techniques, fundamentals of crop and livestock farming systems, and agricultural economics.

For information about working internationally or for more training, check out the IAD Graduate Group online at <http://iad.ucdavis.edu>.

— Elisabeth Kauffman



# CA&ES Outlook

College of Agricultural and  
Environmental Sciences #986H  
University of California  
One Shields Avenue  
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## RON SCHULER

### Supporting the college and our students

The trophy wall in Ron "Peaches" Schuler's ('60, Agronomy) billiards room displays a collection of plaques and awards from UC Davis, including the most recent—the Jerry Fielder Memorial Award from the Cal Aggie Alumni Association. "I've always been involved with UC Davis," Schuler says. "I never left."

As Ron's career led him through various aspects of California agriculture, particularly the peach industry, he discovered a true asset in his alma mater. "I turned to my professors for guidance. I sought out advice from staff, faculty, and other alumni. I was able to use the newest technology to move forward and make my business decisions based on that knowledge."

True to the blue and gold, Ron has demonstrated his support of the College of Agricultural and Environmental Sciences in many ways. He has served on different boards, including 20 years on the Dean's Advisory



Council. He was instrumental in creating the L.D. Davis Professorship in Pomology, an endowed chair. And he helped raise funds for a new food processing pilot plant that will be named in honor of the donors from the California processing tomato industry. As a member of the CA&ES Dean's Circle, Ron knows that his unrestricted gifts are as important as focused gifts.

"Help others," Schuler advises students. "Do the best you can. Stay in touch with key instructors and utilize them. UC Davis has been instrumental in every success I've enjoyed in my career."

— Dawn Spinella

### JOIN THE CA&ES DEAN'S CIRCLE

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.

#### ABOUT CONTRIBUTING

The CA&ES Dean's Circle is open to donors who wish to make unrestricted annual gifts of \$1,000 or more to the College of Agricultural and Environmental Sciences.

Your donation is renewable annually, and your employer's matching gifts count toward the total.

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.

#### HOW TO CONTRIBUTE

A response envelope is included in this issue of CA&ES Outlook so that you can join our prestigious circle of donors.

If you have questions or need more information, please contact the CA&ES Development Office at (530) 754-8961.

Visit our Giving website:  
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