



# THE 21<sup>ST</sup> CENTURY UNIVERSITY

**UCDAVIS**

2012-13 ANNUAL REPORT

# THE 21<sup>ST</sup> CENTURY UNIVER



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## THE UC DAVIS VISION OF EXCELLENCE

Advancing the 21<sup>st</sup> Century University

**THE SIX GOALS** of the Vision of Excellence ensure that UC Davis stays at the forefront of higher education—preparing leaders, advancing knowledge, and engaging locally and globally to address our most pressing issues and to support a more sustainable world.

**FOSTER A VIBRANT COMMUNITY  
OF LEARNING AND SCHOLARSHIP**

**DRIVE INNOVATION AT THE FRONTIERS  
OF KNOWLEDGE**

**EMBRACE GLOBAL ISSUES**

**NURTURE A SUSTAINABLE FUTURE  
AND PROPEL ECONOMIC VITALITY**

**CHAMPION HEALTH, EDUCATION,  
ACCESS AND OPPORTUNITY**

**CULTIVATE A CULTURE OF  
ORGANIZATIONAL EXCELLENCE,  
EFFECTIVENESS AND STEWARDSHIP**

To learn more about the Vision of Excellence, visit [VISION.UCDAVIS.EDU](http://VISION.UCDAVIS.EDU).



# THE 21<sup>ST</sup> CENTURY UNIVERSITY



**WHEN UC DAVIS ADOPTED THE VISION OF EXCELLENCE** in 2010, we ensured that the goals of the university aligned with the needs of the 21st century. We are a unique institution, positioned through our excellence and academic strengths to stay at the forefront of higher education. Using cutting-edge technology and techniques, and collaboration both internally and externally, we are addressing the century's most pressing issues in such topics as food, water, health, society, energy and the environment.

As you will see in these pages, UC Davis is continuing to grow as an innovative university. This report outlines the ways that UC Davis is advancing the framework and solutions that are essential for our future prosperity and well-being—from educating leaders prepared to address our greatest challenges, to partnering globally for research and to implement solutions.

In addition to seeing the rewards of our labors empirically, we are also being recognized for our efforts. This year, UC Davis was named the #1 Cool School in the nation, an accolade from *Sierra* magazine that recognizes our leadership in sustainability. *U.S. News & World Report* increased our ranking to the eighth public university nationally. We also tied UC Berkeley and Penn State for being top in producing Fulbright scholars. Meanwhile, our research dollars increased \$65 million in the last fiscal year, to nearly \$750 million; we have raised more than \$882 million toward our \$1 billion goal for The Campaign for UC Davis; and we have the most academically talented group of new students on record, with our latest group of freshmen students holding an average GPA of 3.96.

We are on an incredible journey filled with great expectations. With our outstanding students, faculty, staff and supporters leading the way, we are helping to build a brighter future, illuminating paths to even greater accomplishments.

A handwritten signature in black ink that reads "L. Katehi". The signature is fluid and cursive, with a prominent initial "L" and a trailing flourish.

Chancellor Linda P.B. Katehi

A young woman with long brown hair and glasses, wearing a black blazer over a green top, is speaking at a wooden podium. She is smiling and gesturing with her right hand, palm up. In the background, several other people are seated at desks, some looking towards her. The setting appears to be a courtroom or a formal hearing room with wood-paneled walls.

**STUDENTS** ask questions following a special session of the California Supreme Court, which convened on campus in October 2012 under the leadership of Chief Justice Tani Cantil-Sakauye, who earned her bachelor's and law degrees from UC Davis.

# PREPARING LEADERS

## TRAINING 21<sup>ST</sup> CENTURY THINKERS AND ACHIEVERS

### UC DAVIS PROVIDES DYNAMIC LEARNING OPPORTUNITIES TO STUDENTS.

Students need knowledge, tools and experiences to help them succeed in their educational endeavors while preparing for the challenges of the complex, modern world. UC Davis provides those opportunities with events such as the recent hosting of oral arguments to the California Supreme Court and the California Court of Appeal, Third Appellate District, in the School of Law's Kalmanovitz Appellate Courtroom. The special fall 2012 sessions offered students an up-close view of justice in action, an opportunity to hear attorneys argue in real-life cases, and a chance to interact with the justices in question-and-answer periods following the hearings.

Universities need to work more closely with business, nonprofit and government sectors to better prepare graduate students for careers beyond academia, according to a national report that UC Davis Graduate Studies Dean Jeffery Gibelung

recently helped guide. Launched in 2012, the new Graduate Studies' professional development program, GradPathways, addresses this need by offering workshops, classes, seminars and more to support graduate students wishing to explore a broad range of career opportunities.

UC Davis also launched new programs in the fall to help international students better succeed on campus. Similar services are provided for all new students, but these—expanded orientation and mentoring services, as well as a special seminar series—focus on the unique needs of international students.

Last year, Brazil launched Science Without Borders, a bold program aimed mostly at training 100,000 undergraduate and graduate students overseas. UC Davis was the first of 156 U.S. universities to sign an agreement with the Brazilian government to partner in this program.

### MORE ON PREPARING LEADERS

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Henry "Hoby" Wedler, a graduate student in chemistry who is blind, was one of 14 individuals honored in May at the White House as Champions of Change for leading the way for people with disabilities in science, technology, engineering and math. Inspired by programs and encouraged by professors, colleagues and others, Wedler gained the confidence to overcome the mistaken belief that such fields are too visual for blind people.

Teams of UC Davis engineering students showcased their senior year projects to industry experts and the campus community at the Engineering Connections 2012 symposium in June. More than 90 projects were on display including fuel-efficient aircraft designs, medical technologies, chemical engineering prototypes, "musical stairs" and smartphone apps.

Chancellor Linda P.B. Katehi is taking a leading role in encouraging young women to enter careers in science, technology, engineering and mathematics. In light of her efforts, she was named among a dozen "Leading Women in STEM" honored in October at the 2012 California STEM Summit in San Diego for her efforts to advance science, technology, engineering and mathematics education initiatives on behalf of California women and girls.



Sustainability leadership on campus often begins with students. Here, **TESSA ARTALE**, a sociology major who is a unit director for the UC Davis Campus Center for the Environment, harvests an onion from the residence hall gardens. Artale helped design the gardens, which provide an experiential opportunity for students who want to learn about food cultivation and be more aware of their food sources.



# ADVANCING SUSTAINABILITY

PRODUCING DISTINGUISHED RESEARCH AND INNOVATIVE SOLUTIONS WHILE EDUCATING SOCIETY ON HOW ENVIRONMENTAL SUSTAINABILITY IMPROVES LIFE IN THE 21<sup>ST</sup> CENTURY

## UC DAVIS SUSTAINABLE ENVIRONMENTAL INITIATIVES DRAW RECOGNITION.

A global leader in sustainability, UC Davis was recognized by *Sierra* magazine as America's 'Coolest School' for 2012–13 for its significant sustainability and climate change initiatives on campus. UC Davis ranked No. 1 among the 96 top colleges and universities surveyed.

The Sierra Club's official publication praised UC Davis for establishing rigorous green purchasing standards, diverting waste and offering an extensive sustainable transportation system on its 5,300-acre campus. The university was also recognized for systems and technology developed and then applied on campus, such as through its Smart Lighting Initiative, which aimed to reduce electricity use by 60 percent in 2012 while serving as a model for industry and other communities.

Though UC Davis research may start in the laboratory or field, its impacts are felt around the world. UC Davis scientists

participated in an international team of 22 scientists who in the June 7, 2012 issue of the journal *Nature* sounded a widely reported alarm that humans may be forcing an irreversible, planetary-scale tipping point that could severely impact fisheries, agriculture, clean water and much of what Earth needs to sustain its inhabitants.

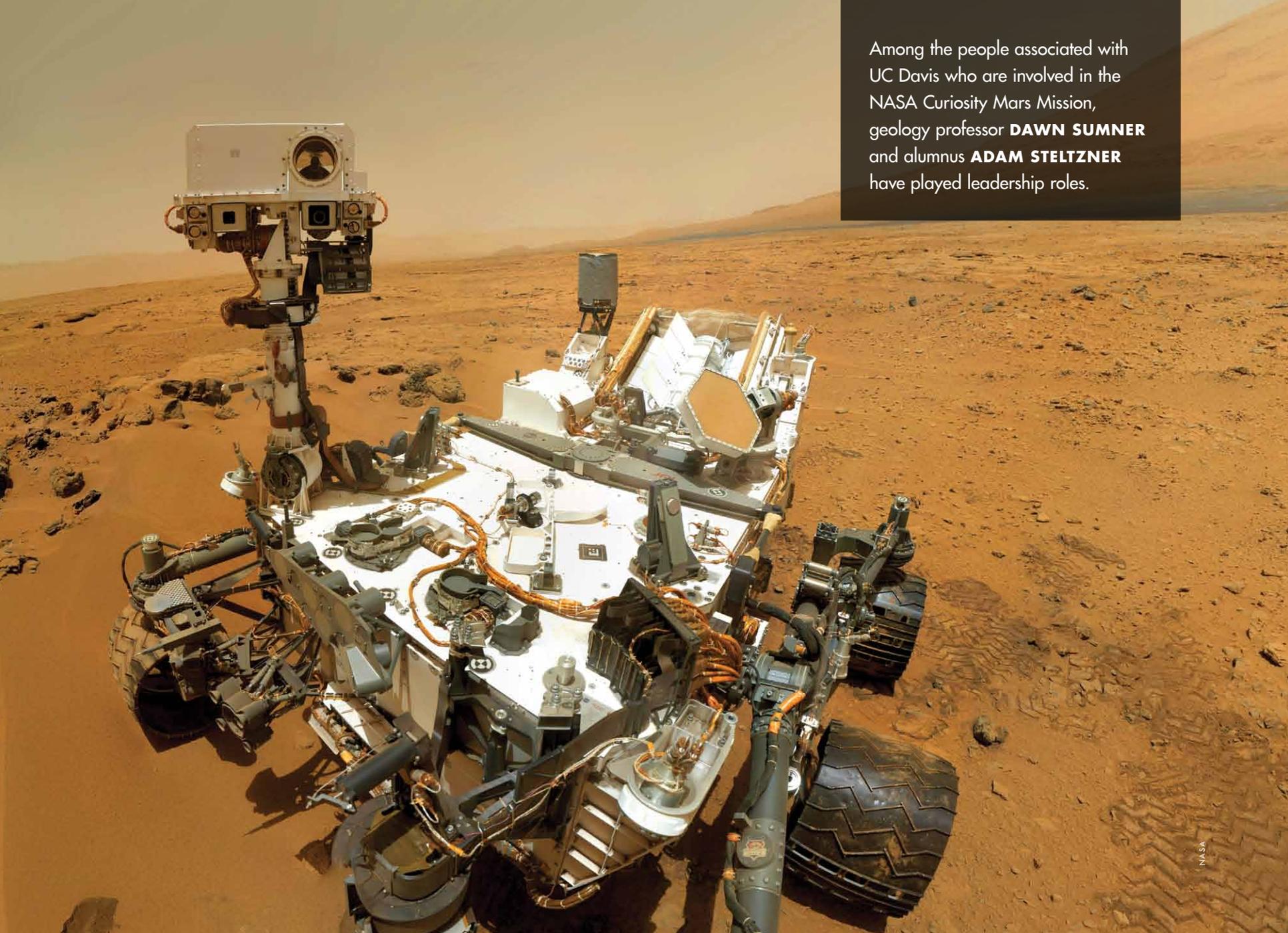
UC Davis is also playing a leadership role in finding solutions. For instance, in June the university drew nearly 1,000 people working to green the campuses of California's public and private colleges and universities when it hosted the 2012 California Higher Education Sustainability Conference, and in October Chancellor Linda P.B. Katehi convened the Energy-Food-Water Dialogue to help explore how science and technology may help meet future resource demands sustainably.

## MORE ON ADVANCING SUSTAINABILITY

UC Davis was included in a select group of universities for the Smithsonian Institution's 2012 Folklife celebration of the 150th anniversary of the federal law that created land-grant universities. UC Davis' presentation space on the National Mall focused on sustainability, and UC Davis professors gave talks in Washington on historical topics such as African American folk art and civil rights and the history of rock 'n' roll.

UC Davis is a major leader in the effort to protect the Lake Tahoe basin, and since 1968 has conducted an annual study of the lake's clarity (which improved in 2011). Recently, scientists, students and staff researched and designed a way to use rubber mats as part of the biggest invasive Asian clam control project in the lake's history.

Inspired by a visit to the innovative, energy-efficient UC Davis West Village in 2010, a Middle Eastern housing developer is now planning a sustainable city on the outskirts of Dubai in the United Arab Emirates. Dubai-based Diamond Developers visited UC Davis West Village—the nation's largest planned zero net energy community—just about a year ahead of its opening in October 2011.



Among the people associated with UC Davis who are involved in the NASA Curiosity Mars Mission, geology professor **DAWN SUMNER** and alumnus **ADAM STELTZNER** have played leadership roles.

# LEADING-EDGE EXPERTISE

APPLYING KNOWLEDGE GAINED THROUGH RESEARCH AND SCHOLARSHIP TO ADDRESS 21<sup>ST</sup> CENTURY CHALLENGES

## UC DAVIS EXPERTS MAKE REAL-WORLD DIFFERENCES.

When the Curiosity rover arrived on Mars, it landed at a site that geology professor and NASA Mars Science Laboratory team co-investigator Dawn Sumner helped to select. Sumner helps plan data collection and facilitates science interpretations by the team. Her student, Amy Williams, a geology doctoral candidate, is also on the Curiosity rover science team.

UC Davis alumnus and NASA engineer Adam Steltzner ensured that the rover landed safely on the planet's surface. As the lead engineer of the Mars Science Laboratory Curiosity rover EDL phase (Entry, Descent and Landing), he helped design, build and test the sky crane landing system that was celebrated for its novel approach and first-time success.

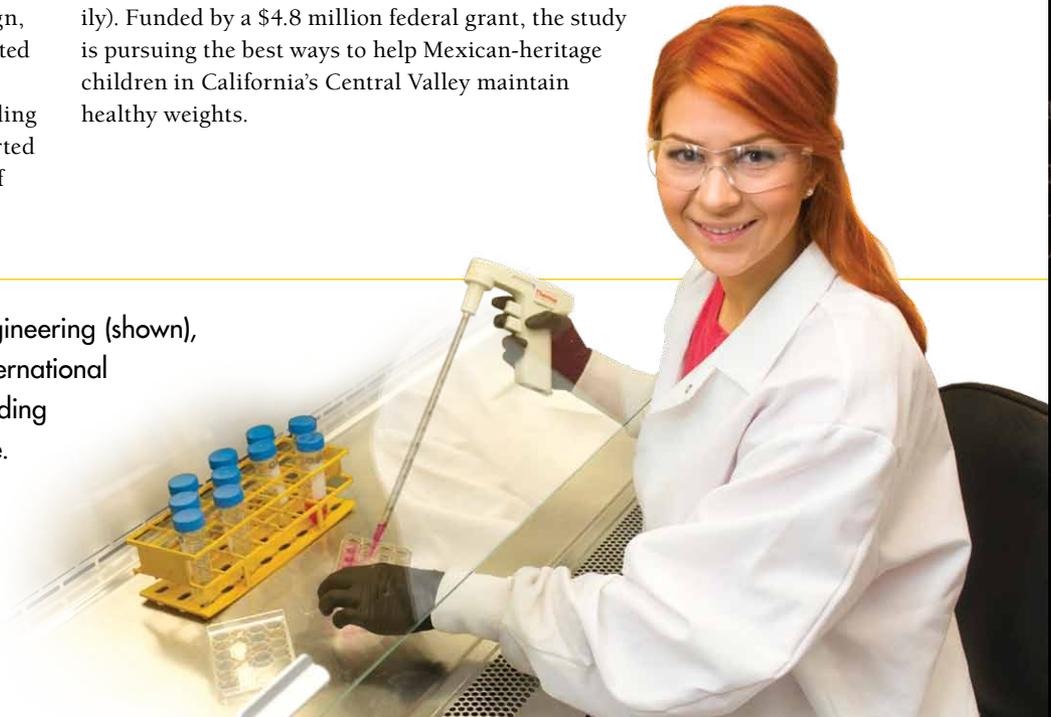
Back on Earth, plant scientist Eduardo Blumwald is leading a research initiative to help feed and fuel the world. Supported by grants totaling \$8.4 million from the U.S. Department of

Energy, U.S. Agency for International Development and industry partners, Blumwald and his colleagues use genetic engineering to improve the drought tolerance and efficiency of switchgrass, which is valued as a sustainable source of fuel, and to develop hardier varieties of pearl millet, a vitally important grain for India and Africa.

Professor Adela de la Torre, a national expert on Chicano and Latino health issues, is leading a five-year study called Niños Sanos, Familia Sana (Healthy Children, Healthy Family). Funded by a \$4.8 million federal grant, the study is pursuing the best ways to help Mexican-heritage children in California's Central Valley maintain healthy weights.

## WENDY BROWN

Wendy Brown, a graduate student in biomedical engineering (shown), and Professor Jonathan Eisen were winners in an International Space Station research competition. They will be sending microbes to the station to study their growth in space.





**WHISKEY**, a 60-pound Munsterlander from San Francisco, can still chew on his toys and doggie treats, thanks to veterinary surgeons and biomedical engineers who adapted technology to regrow his lower right jawbone after half of it was removed due to cancer.

# INTERDISCIPLINARY BREAKTHROUGHS

PROMOTING TRANSFORMATIVE RESEARCH TO ACCELERATE KNOWLEDGE AND ACHIEVEMENT IN SCIENCE, SOCIETY AND CULTURE IN THE 21<sup>ST</sup> CENTURY

## **SOPHISTICATED TECHNOLOGIES BENEFIT HUMANS AND ANIMALS.**

Through collaboration between its acclaimed biomedical engineering program, School of Medicine and School of Veterinary Medicine, UC Davis is well on its way to advancing the field of bone regeneration and repair. For the past two years, researchers have worked together to successfully regrow jawbones in eight canine patients that had suffered bone loss due to injuries or removal of cancerous tumors.

This new clinical procedure grew out of a serendipitous collaboration between biomedical engineer Dan Huey and veterinary surgeon Boaz Arzi. They were both working as post-doctoral researchers in the laboratory of biomedical engineering professor Kyriacos Athanasiou, an expert in the biomechanics of cartilage and cartilage-healing processes. Huey and Arzi began to discuss biomedical approaches for bone replacement that might have clinical applications for veterinary medicine.

Borrowing from experimental and clinical treatments in human medicine, the pair worked with professor Frank Verstraete, who heads the Dentistry and Oral Surgery Service at the veterinary teaching hospital, to refine a technique that might work for dogs. Using the new procedure, surgeons reconstruct the jawbone by means of a titanium plate and screws, and a piece of scaffolding that contains proteins that stimulate regrowth of the bone. Knowledge gleaned from these clinical trials has valuable applications for both human and veterinary medicine.

## **MORE ON INTERDISCIPLINARY BREAKTHROUGHS**

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An international research team that includes linguist Martha Macri, professor of Native American studies, and Bruce Winterhalder, professor of anthropology, combined a precisely dated climatic record of the Maya environment with linguistic accounts of Maya political history recorded on monuments, finding that decades of lessening rainfall led to political turmoil and, ultimately, the civilization's political collapse. The findings were featured on the cover of the journal *Science*.

Groundbreaking efforts by PREDICT, a project led by the One Health Institute at UC Davis, were highlighted in a recent medical journal as a model for a new, interdisciplinary pandemic prevention strategy. Operating on the understanding that humans, wildlife and the environment are inextricably linked, the UC Davis-led team is using state-of-the-art tools to identify emerging threats and stop them early, so that pandemics like HIV/AIDS and SARS are averted.

Colin Milburn, associate professor of English, is newly appointed to the inaugural Gary Snyder Endowed Chair in Science and the Humanities at UC Davis, a role that will further develop his research and teaching at the intersection of the sciences and humanities. For example, educating a generation raised on video games, Colin Milburn makes use of students' literacy in interactive media—coaxing poetry and literature off the pages and into the third dimension.



JOE PROUDMAN/UC DAVIS

UC Davis Vice Chancellor of Research **HARRIS LEWIN**, left, and UC Davis veterinary virologist **TILAHUN YILMA**, right, met with BGI executives including **HUANMING (HENRY) YANG**, chairman and cofounder of BGI, center, when they visited campus in November to talk about a new partnership to foster breakthroughs in genomics, especially in medicine, food, agriculture and the environment.

JOE PROUDMAN/UC DAVIS

# GROUNDBREAKING PARTNERSHIPS

ENSURING THAT 21<sup>ST</sup> CENTURY ISSUES ARE ADDRESSED WORLDWIDE THROUGH SCIENTIFIC RESEARCH AND COLLABORATIVE PROGRAMS

## UC DAVIS PARTNERSHIPS CHANGE THE LANDSCAPE OF GENOMIC SCIENCES.

UC Davis continues to launch partnerships aimed at improving the quality of life, especially in the sciences, technology, education and the treatment of diseases. One ambitious effort launched this year by UC Davis, Agilent Technologies and the FDA involves sequencing the genomes of 100,000 infectious microorganisms and speeding up the diagnoses of foodborne illnesses. The five-year project will focus on making the food supply safer and include the building of a free public database. In the United States alone, foodborne diseases annually sicken 48 million people and kill 3,000, according to the Centers for Disease Control.

The BGI@UC Davis partnership took a step forward this year when leadership for a new joint genomics facility on campus was announced. Through BGI, campus researchers have access to the capabilities and expertise of one of the world's premier

genomics and bioinformatics institutes, while BGI researchers have the ability to collaborate with UC Davis experts.

UC Davis has a history of such productive partnerships. For instance, an international consortium of scientists including researchers at UC Davis recently published the genomic sequence of watermelon in the journal *Nature Genetics*. The information could dramatically accelerate both improved breeding of fruit and progress in understanding the role of the plant vascular system as an information superhighway.

Another important consortium was launched through a major grant from the National Institutes of Health. UC Davis established the West Coast Metabolomics Center to help scientists better understand and develop treatments for complex diseases like diabetes, cancer and atherosclerosis.

## MORE ON GROUNDBREAKING PARTNERSHIPS

A UC Davis partnership with PG&E to survey gas pipelines began in late 2011 with three test flights over 300 miles of transmission lines from Sonoma to Fresno. The data collected will be used to enhance pipeline safety throughout PG&E's service area. The plane's ability to identify the source of pollutants has also detected leaks at fracking operations and ozone pollution from distant sources.

Thanks to a partnership with the National Science Foundation, UC Davis will improve its campus research data network speed and performance during the next two years. The \$992,000 grant will also provide new opportunities for research and teaching in networking science and computer security.

UC Davis this year unveiled one of the most advanced outdoor lighting systems in the country, a roughly \$1 million network of "smart" lights that wirelessly communicate and coordinate with one another to adapt to their environment. The Smart Lighting projects are based on innovations by the campus's California Lighting Technology Center, developed in collaboration with the California Energy Commission's Public Interest Energy Research program and lighting industry partners.

The UC Davis School of Education, celebrating its 10th anniversary this year, is also leading the way in using innovative partnerships. It has partnered with select K-12 schools to improve science, technology, engineering and math education (STEM), thanks to a grant from the S.D. Bechtel Jr. Foundation. The four-year grant will serve as a model for raising student achievement in STEM courses.



Alumnus **ROBERT DALTON JR.** is co-founder and chief technology officer of Dysonics, a pioneer in immersive audio technology.

# INNOVATION ACCELERATION

GENERATING NEW 21<sup>ST</sup> CENTURY BUSINESSES, JOBS AND ENTERPRISE THROUGH PIONEERING RESEARCH, MENTORSHIP AND TEACHING

## TECHNOLOGY STARTUPS BRING UC DAVIS INNOVATION TO MARKET.

UC Davis is an innovation hub, spinning off research breakthroughs into the marketplace. Dysonics, founded by engineering faculty member Ralph Algazi, former research scientist Richard Duda and engineering alumnus Robert Dalton Jr., is the first company to graduate from the Engineering Translational Technology Center (ETTC) high-tech business incubator, recently established by the College of Engineering to speed the transfer of high-impact, innovative ideas to the marketplace to meet society's needs.

Thanks to investor funding, Dysonics is developing products for reproducing 3-D, immersive sound over headphones and recently released Rondo, a mobile app that upgrades the headphone experience using technology stemming from years of work conducted in Algazi's laboratory.

Entrepreneurs also receive assistance from the UC Davis

Child Family Institute for Innovation and Entrepreneurship, a springboard for linking promising research to the marketplace and educating students as future innovators. It has helped launch 44 startup companies since 2003.

UC Davis faculty and students have launched many commercial ventures. Barobo Inc., founded by engineering professor Harry Cheng and graduate student Graham Ryland, is a current resident of the ETTC. Barobo is a commercial spinoff of technology developed in the UC Davis Integration Engineering Laboratory. The company aims to make robotics more affordable, adaptable, reconfigurable and reprogrammable for education, research and industrial applications. Its flagship product, the Mobot, is a modular robot designed for collaborative K-12 science, technology, engineering and mathematics (STEM) education.

## MORE ON INNOVATION ACCELERATION

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Medical school faculty Paul Henderson and Chong-xian Pan developed a personalized chemotherapy test through their company Accelerated Medical Diagnostics. The test is intended to provide direct measurement of tumor responses to a microdose of platinum-based chemotherapy agents, allowing selection of the correct therapy for each patient.

UC Davis is spurring innovation in specific industries. Responding to a UC Davis challenge to build more energy-efficient air conditioning, the air conditioner manufacturer Trane built a rooftop air conditioner that it claims uses 40 percent less power than conventional units. The innovation earned it Western Cooling Challenge certification from UC Davis.

In 2011–12, the university filed 224 new invention disclosures, bringing the campus's total portfolio of inventions to 1,190.

Ten years ago, **MARGRIT MONDAVI** said the Robert and Margrit Mondavi Center for the Performing Arts was going to be a great place to see and hear the best artists in the world. She was right; the center celebrated its 10th season and the accomplishment of serving 100,000 patrons a year while giving students opportunities to perform in a premier venue.



# HUMAN INSPIRATION

CULTIVATING AND SUPPORTING THE SPIRIT OF ART AND CULTURE OF THE 21<sup>ST</sup> CENTURY WORLD

## **UC DAVIS CELEBRATES AND EXPANDS ARTS AND CULTURE OFFERINGS.**

The Jan Shrem and Maria Manetti Shrem Museum of Art, which will be located near the university's southern entry, is slated for completion in 2016. Rachel Teagle has been named the new director; she brings more than 15 years' experience as a museum leader and curator. The museum will house more than 5,000 works of art from the antiquities to modern times. Design plans for the museum are progressing via a competition among three innovative architect-contractor teams.

UC Davis recently celebrated the clearing of a site for a new music recital hall and classroom building, made possible by philanthropic support from arts patrons, including Grace and Grant Noda and their daughters, and Barbara K. Jackson. When completed, it is expected to become one of the region's most active concert venues, offering more than 100 performances annually by university and community groups and

providing classroom space for the university.

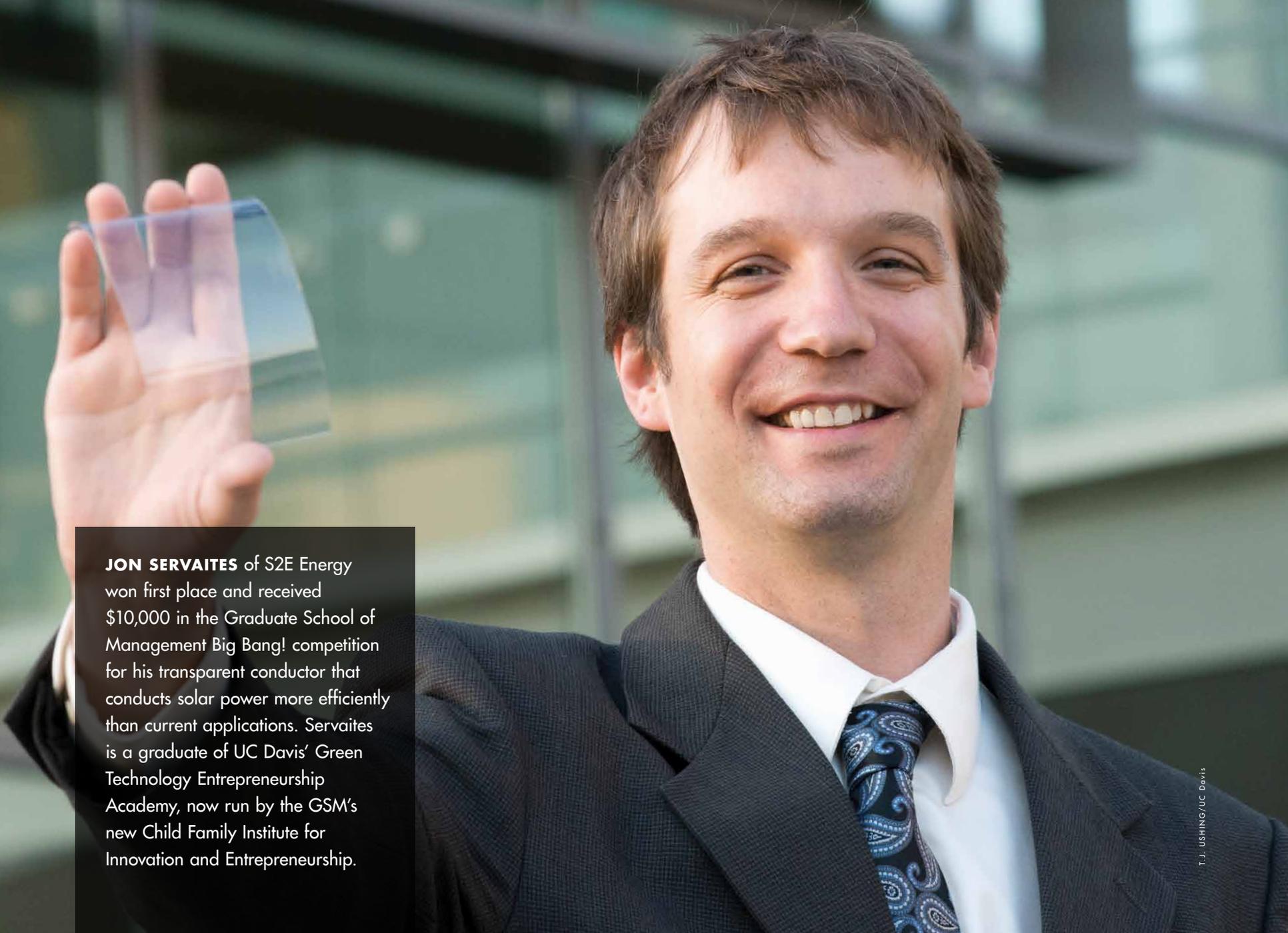
The Robert and Margrit Mondavi Center for the Performing Arts is celebrating its 10th anniversary season and a host of accomplishments, including accommodating more than one million event attendees, providing more than 100,000 school children with educational experiences, and creating programs offering UC Davis students easy access to famed artists and speakers as well as a world-class performance venue. This year, the Mondavi Center expanded the use of its Vanderhoef Studio Theatre, presenting modern dance, theater, jazz, classical and new music, furthering a UC Davis tradition of innovation and experimentation.

## **JAN SHREM AND MARIA MANETTI SHREM MUSEUM OF ART**

"Our philosophy of giving rests on simple concepts: We believe that education and the arts should be accessible to all people. And we believe that a curious and open mind should be nurtured and supported. Fortunately, the project at UC Davis has introduced us to people who profoundly share this philosophy. It is with deepest pleasure that we are able to help bring this new museum to life."

**—Jan Shrem and Maria Manetti Shrem**





**JON SERVAITES** of S2E Energy won first place and received \$10,000 in the Graduate School of Management Big Bang! competition for his transparent conductor that conducts solar power more efficiently than current applications. Servaites is a graduate of UC Davis' Green Technology Entrepreneurship Academy, now run by the GSM's new Child Family Institute for Innovation and Entrepreneurship.

# ECONOMIC LEADERSHIP

POWERING A 21<sup>ST</sup> CENTURY ECONOMY THROUGH EXCEPTIONAL EDUCATION, RESEARCH AND IDEAS

## UC DAVIS USES A MULTIFACETED APPROACH TO HELP BUILD A HEALTHY ECONOMY.

The university sets itself apart by the economic leaders it trains and then sends out into our nation and the world. For instance, distinguished by world-renowned faculty members, entrepreneurial students, a powerful alumni network and locations in Northern California's economic and innovation hubs, the Graduate School of Management has pulled ahead of the crowd as the fastest-rising U.S. business school, while the undergraduate and graduate economics programs continue to be recognized among the best in the nation.

UC Davis is also providing leadership to specific industries. For example, it was one of six recipients nationwide, and the only recipient in California, to receive an award from the U.S. Department of Commerce to study innovative ways to sustain our nation's food supply, while fueling job creation and economic growth on farms and in rural communities across

America. The university is using the \$1 million grant to establish the Clean AgTech Innovation Center.

Meanwhile, UC Davis encourages and supports innovative technologies in many ways. This year's Big Bang! Business Plan Competition, run by MBA students and including some of Northern California's largest employers, venture capitalists and law firms, awarded its first prize to S2E Energy, which will develop a thin, clear window-like material that can conduct solar power more cheaply and efficiently than existing technology. Since its founding in 2000, the Big Bang! has produced many teams that have launched successful start-ups.

## MORE ON ECONOMIC LEADERSHIP

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Net Impact, a global nonprofit organization that advocates using the power of business to create a more socially and environmentally sustainable world, ranks the UC Davis Graduate School of Management among the top business schools in its recently released 2012 edition of *Business as UNusual: The Student Guide to Graduate Programs*, which gives an inside look at MBA programs' social and environmental curricula, student activities and career services.

*The Economist's* 2012 MBA rankings distinguish UC Davis as No. 1 in the world, based on the diversity of corporate recruiters that provide career opportunities to graduates.

Amy Myers Jaffe, a leading expert on the oil industry and influential thought leader on global energy policy, joined UC Davis as the executive director of energy and sustainability in a joint appointment to the Institute of Transportation Studies and Graduate School of Management.



The Early Start Denver Model Intervention Program, authored by Professor of Psychiatry and Behavioral Sciences **SALLY ROGERS**, helps families support language and cognition development in young children with autism. The research was recognized as a top medical breakthrough of 2012 by *Time* magazine.

# HEALTH ADVANCEMENTS

SHAPING 21<sup>ST</sup> CENTURY PUBLIC HEALTH AND ADVANCING THE FRONTIERS OF MEDICINE AND WELLNESS THROUGH EXCELLENCE IN EDUCATION, RESEARCH AND PATIENT CARE

## UC DAVIS ADVANCES EVIDENCE-BASED SOLUTIONS FOR HEALTH.

Combining the strengths of the health system, the veterinary system, academic areas from genomics to biomedical engineering, cutting-edge technology and a global network of partners, UC Davis is advancing science and driving exciting advancements in healthcare.

Autism research by UC Davis MIND Institute Professor of Psychiatry and Behavioral Sciences Sally Rogers was named fifth among the Top 10 Medical Breakthroughs of 2012 by *Time* magazine. Rogers' Early Start Denver Model intervention is an intensive early intervention therapy, effective for improving cognition and language skills among very young children with autism along with normalizing brain activity, decreasing autism symptoms and improving social skills.

In 2012, UC Davis celebrated both the expansion of its cancer center and the center's designation by the National

Cancer Institute as "comprehensive." The designation is an achievement reserved for world-class cancer centers that demonstrate excellence in basic and translational research and a wide spectrum of cancer prevention, education and outreach services. The expansion doubles clinic capacity and provides additional space for clinical trials, speciality clinics and research collaboration.

Such research includes a discovery by a team of UC Davis investigators of a protein on the surface of lung cancer cells that could prove to be an important new target for anti-cancer therapy. A series of experiments in mice with lung cancer showed that specific targeting of the protein with monoclonal antibodies reduced the size of tumors, lowered the occurrence of metastases and substantially lengthened survival time.

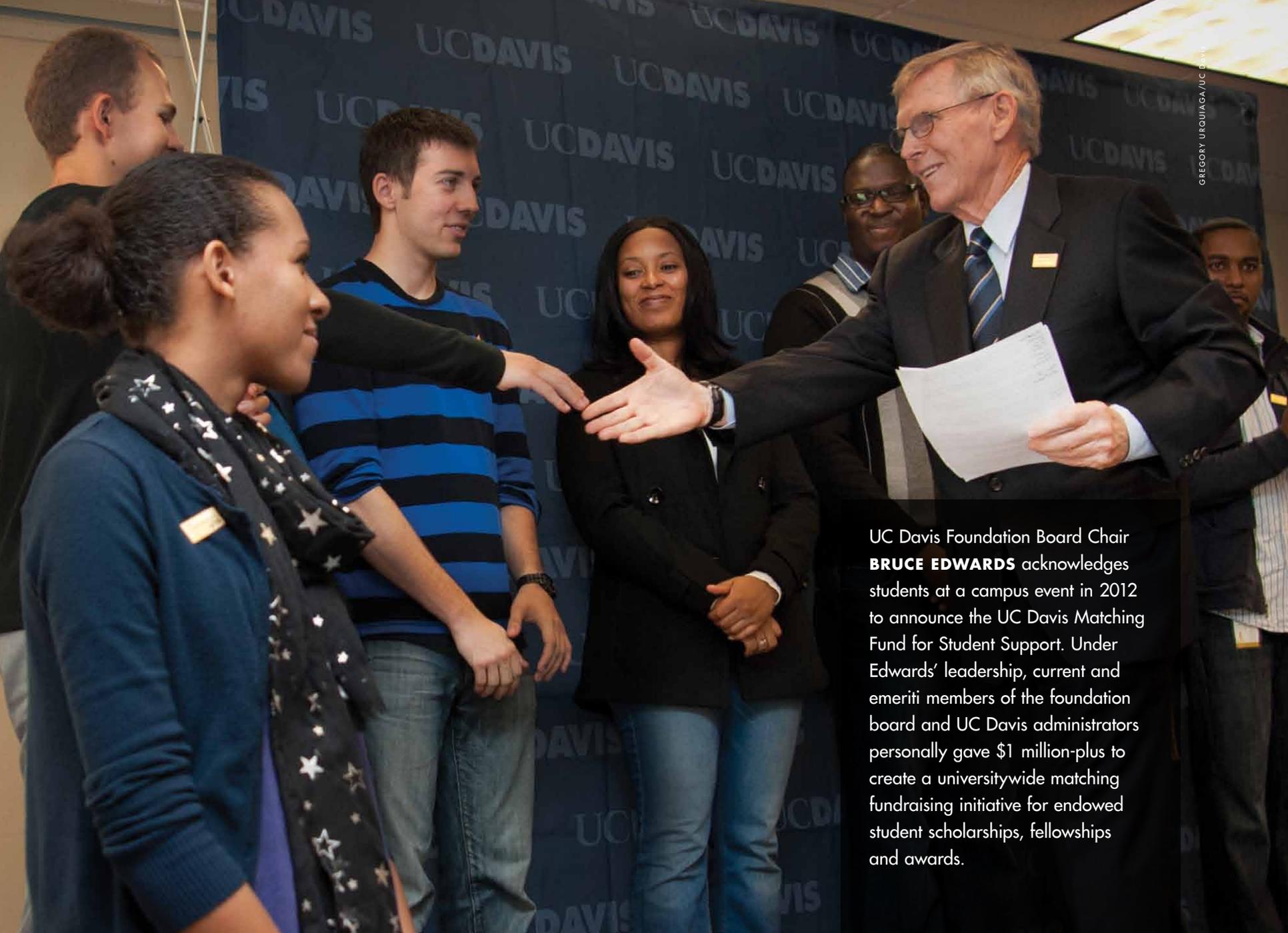
## MORE ON HEALTH ADVANCEMENTS

Satya Dandekar, chair of the Department of Medical Microbiology and Immunology at UC Davis, is carrying out leading research on HIV, especially on the role of gastrointestinal mucosal lymphoid tissue in HIV/AIDS. She is also working to build international partnerships, such as establishing an HIV research consortium with Indian scientists and co-chairing a conference in Brazil aimed at creating new partnerships in biomedical research and translational science.

Biomedical engineers at UC Davis have developed a microfluidic chip to test for latent tuberculosis. They are submitting the test for FDA approval, expecting that it will be cheaper, faster and more reliable than current tests. About one third of the world's population is infected with the bacteria that cause TB, a disease that kills an estimated 1.5 million people worldwide every year.

UC Davis psychology professor Robert Emmons received a \$5.6 million grant from the John Templeton Foundation to advance the science of gratitude. The foundation previously supported Emmons in a project that found that people who kept daily gratitude journals experienced a variety of benefits including improved mental health, physical functioning and improved social relationships.

Veterinarians announced plans to conduct the first clinical trial of an experimental, anti-inflammatory drug that has shown promise in treating horses stricken with laminitis, an often life-threatening foot-related disease. The experimental compound stems from a discovery made more than 40 years ago by UC Davis entomology professor Bruce Hammock.



UC Davis Foundation Board Chair **BRUCE EDWARDS** acknowledges students at a campus event in 2012 to announce the UC Davis Matching Fund for Student Support. Under Edwards' leadership, current and emeriti members of the foundation board and UC Davis administrators personally gave \$1 million-plus to create a universitywide matching fundraising initiative for endowed student scholarships, fellowships and awards.

# SUPPORT FOR EXCELLENCE

POSITIONING THE UNIVERSITY FOR EXTRAORDINARY SUCCESS IN THE 21<sup>ST</sup> CENTURY BY ADVANCING STUDENT LEADERS AND QUALITY RESEARCH FOR A KNOWLEDGE-DRIVEN WORLD

## THE CAMPAIGN FOR UC DAVIS PROGRESSES WITH \$132 MILLION IN RECENT GIVING.

UC Davis attracts supporters who know their funding benefits the world now and also for future generations. UC Davis donors committed \$132.4 million during the 2011–12 fiscal year, surpassing the previous year's total of \$117.6 million, and marking the sixth consecutive year that philanthropic gifts exceeded \$100 million.

The university experienced broad-based support. Contributions came from more than 40,000 donors, including alumni, parents, friends, faculty, staff, patients, foundations and current students. More than 36,000 gifts and pledges were each less than \$1,000.

More than \$7.1 million came from supporters in other countries, almost double the international philanthropic support received in the previous year. The commitments bring the university more than 80 percent of the way toward the \$1 bil-

lion goal set for its first comprehensive fundraising campaign, which was publicly launched in October 2010. As of December 2012, The Campaign for UC Davis has inspired about 97,000 donors to commit more than \$882 million to advance excellence in research, scholarship and public service, of which donors directed more than \$116 million for student support.

In December 2012, UC Davis announced the creation of a \$1 million-plus matching fund to encourage gifts to help UC Davis students. Under the leadership of UC Davis Foundation Board Chair Bruce Edwards '60, current and emeriti members of the foundation board and UC Davis administrators personally gave \$1.04 million to create the universitywide matching fundraising initiative the UC Davis Foundation Matching Fund for Student Support.

## MORE ON SUPPORT FOR EXCELLENCE

The UC Davis Annual Fund received more than \$1.7 million in gifts and pledges from more than 14,600 donors. Gifts to the Annual Fund provide the university with flexible funding to support students and faculty, and to meet emerging opportunities.

The late Victor and Genevieve Orsi dedicated more than \$1.6 million from their estate to the UC Davis Health System, to create an endowment to support research related to Alzheimer's disease.

The John Templeton Foundation awarded a grant of \$2.3 million over three years to continue and extend the Shamatha Project, the most comprehensive investigation yet conducted studying the effects of intensive meditation training on mind and body.

UC Davis students launched a fundraising initiative called "We Are Aggie Pride" to provide emergency financial aid to fellow students. In its first five months, this student-run effort raised \$30,000 from more than 300 donors and awarded more than \$17,000 in short-term financial assistance to students in need.

**EXAMPLES OF GRANTS AWARDED TO UC DAVIS FACULTY IN 2011-12 INCLUDE:**

**A \$25 MILLION**, five-year program to improve food security in the developing world, funded by the U.S. Agency for International Development.

**\$34 MILLION** from the National Institutes of Health to a consortium including UC Davis for development of new mouse models of diseases such as cancer, obesity and diabetes, a key step toward finding better ways to prevent and treat these diseases.

**\$12 MILLION** from a joint program of the National Science Foundation and the Japan Science and Technology Agency to further research into generating biofuels from algae.

**\$4 MILLION** from the U.S. Department of Health and Human Services to establish a Center for Poverty Research.

**\$580,000** from the Andrew W. Mellon Foundation to study engagement of students and other audiences with classical music.

**PHOTO:** UC Davis pharmaceutical chemistry major **MANUEL MUÑOZ** prepares a liquid solution for his internship project on cancer research.



GREGORY URQUIAGA/UC Davis

# RESEARCH INVESTMENT

FOSTERING A NEW 21<sup>ST</sup> CENTURY CULTURE OF CREATIVITY, INQUISITIVENESS, ENTREPRENEURSHIP AND COLLABORATION AS A WORLD-CLASS RESEARCH UNIVERSITY

## UC DAVIS INVESTMENTS IN RESEARCH SUSTAIN NEW PROGRAMS FOR ECONOMIC HEALTH.

The strength and breadth of research at the university translates into jobs, economic health and the long-term competitiveness of our state and nation.

Research funding at UC Davis totaled nearly \$750 million during the fiscal year that ended June 30. UC Davis gained 9.6 percent in sponsored research activity over the previous year and has had the fastest growth of any of the 10 UC campuses in research funding since 1995.

This total brings UC Davis three-quarters of the way toward the goal set in fall 2011 to reach \$1 billion in research funding by 2020. The “2020 Initiative” may result in increased undergraduate enrollment and new faculty hires. The new professors would generate additional research activity and new learning opportunities for students.

Research projects may also lead to commercially applicable

technologies and start-up companies. The UC Davis Office of Research filed 224 new invention disclosures with the U.S. Patents and Trademarks Office in 2011–12, bringing UC Davis’ total portfolio of inventions to 1,190. Since fiscal year 2003–04, 44 startup companies have been formed at UC Davis.

## MORE ON RESEARCH INVESTMENT

Awards from the federal government rose to \$400 million from \$380 million the previous year. The largest single sponsor among federal awards was the U.S. Department of Health and Human Services, which includes the National Institutes of Health. DHHS grants to UC Davis researchers totaled \$195 million. The U.S. Department of Agriculture was the second largest source of federal funds, awarding \$56 million. The National Science Foundation was third at \$48 million.

Funding from the state of California increased sharply. The 2011–12 total was \$139 million, compared with \$99 million in 2010–11 and \$60 million in 2009–10. (State research funds are awarded on a competitive basis and are separate from state general fund allocations to the university.)

Research support from corporations and nonprofit business-related organizations totaled \$70 million, \$12.5 million more than the previous fiscal year. (Nonprofit business-related organizations include industry and trade associations, unions, and agricultural marketing boards.)

Harris Lewin, vice chancellor for research and professor of evolution and ecology, was appointed to the National Academy of Sciences for his research in genetic factors linked to disease resistance in cattle. Throughout his career, Lewin has been deeply involved in interdisciplinary research that has the potential to move from the laboratory to the marketplace, where it can help solve real-world problems.



IMAGE COLLAGE BY JAY LEEK/UC Davis

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The annual progress report is available online at [annualreport.ucdavis.edu](http://annualreport.ucdavis.edu).

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