The UC Riverside School of Public Policy will launch the Blum Initiative on Global and Regional Poverty in fall 2015, thanks to a generous gift from Richard Blum, former chairman of the UC Board of Regents, and matching contributions from the UC Office of the President and UCR Chancellor Kim A. Wilcox.

The initiative, which was announced during the campus appearance of former U.S. Labor Secretary Robert Reich on Feb. 10, will support research focused on solving poverty-related issues in Riverside and San Bernardino counties, courses on global and regional poverty, internships, a monthly seminar series, and an annual poverty policy forum.

“The mission of the Blum Poverty Initiative resonates well with the overall mission of UC Riverside,” Chancellor Wilcox said. “We work hard to ensure that the world-class education we offer is accessible to all, including those from poverty-stricken areas. The Inland Empire has some of the highest poverty rates among the nation’s largest metropolitan areas. In fact, 58 percent of UCR undergraduates receive need-based Pell grants, the highest percentage among the nation’s research intensive universities. More than half of our students are the first in their families to attend college. This initiative will help us conduct research, teaching and outreach that focuses attention on poverty in the region and will help policymakers and community-based organizations improve the lives of the poor in the Inland Empire.”

Blum’s gift of $250,000 has been matched with $250,000 seed funding from the office of UC President Janet Napolitano and $250,000 from UCR Chancellor Wilcox. Blum has funded similar research initiatives at other UC campuses.
“A program that builds on Riverside’s strengths and seeks to address local and regional poverty issues in the context of global lessons is an important endeavor that will benefit California and provide intellectual challenges and opportunities for UCR faculty and students,” Napolitano said of the poverty initiative.

Anil Deolalikar, founding dean of the UCR School of Public Policy and a developmental economist, noted that one in five San Bernardino County residents lived below the federal poverty line in 2012. In eastern Riverside County, the Coachella Valley includes some of the poorest towns in the nation, inhabited primarily by migrant agricultural workers, that coexist alongside some of the most affluent communities in the country.

The Blum Poverty Initiative will enable the establishment of an interdisciplinary, undergraduate minor in poverty, development of a lower-division course on global and regional poverty designed to meet a general education requirement, and a specialization in poverty and sustainable development within the Master of Public Policy program. The School of Public Policy will enroll its first class of graduate students in fall 2015.

“There is a large and growing demand among undergraduates for new majors that relate to the big challenges facing the world today,” Deolalikar said. “We see this in the growth of the public policy undergraduate program at UCR, which has grown from only two students in 2007 to nearly 200 now. Likewise, the School of Public Policy is developing plans to offer a minor in global health. A new minor in poverty will be very timely, and will provide synergies with existing majors and minors at UCR, such as public policy, global studies, labor studies, and Latin American studies.”

The initiative will support competitive seed grants to faculty “with the best ideas for poverty-based action research,” the dean added. “We will solicit ideas for poverty-related research in Inland Southern California that draw upon policy lessons from around the world. In this way, we hope to cross-fertilize the field of domestic U.S. poverty policy, which has evolved independently of the rich literature on – and innovative experiences of – global poverty.”

Interdisciplinary collaborations on problem-focused research with community partners also will be supported, Deolalikar said.

During his UCR visit, Reich, who teaches at UC Berkeley, said, “I don’t think there is any institution of higher education of this degree of prestige and excellence that has this large a percentage of undergraduates who are Pell Grant-eligible. So you have here what I hope will be cloned across the country; an institution that really does provide opportunities.”

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The Winter 2015 UCR Magazine is Here

From rice to citrus to cowpeas, UCR’s research has changed the way people eat

By Lille Bose

By the year 2025, the world’s population is expected to reach 8 billion. Yet already, 1 billion people suffer from chronic hunger or serious nutritional deficiencies. To address these global food issues, the University of California Global Food Initiative was established.

UC Riverside’s identity is rooted in food and agricultural research, so it makes sense that the campus is a key engine of this initiative. Our scientists created chemicals that slow the aging of citrus, found ways to make drought-resistant rice, and discovered weapons to protect California against the Asian citrus psyllid. Read more about how we’re feeding the world from UCR in this issue’s cover story.

You can also read about Highlanders whose years at UCR inspired careers in food. Celebrity chef Robert
Del Grande, restaurateur Dee Nguyen, coffee roaster Mike Perry, and Litty Mathew and Ryan Wicks — experts on libations — share recipes on our website.

We also spoke to English Professor Fred Moten after his poetry book “The Feel Trio” was nominated for a 2014 National Book Award. Listen to an excerpt from his book, and read about the ways UCR inspires him to be a better teacher.

And as always, we have a ton of online extras — videos, slideshows and more — on our website, magazine.ucr.edu.

UCR Committee on Organizational Excellence Kicks Off with a Lean Talk

*Mark McKenzie’s talk on how UW improved processes was the first of four workshops seeking to improve UCR’s campus operations and procedures*

By Lilledeshan Bose

On Feb. 23, Provost and Executive Vice Chancellor Paul D’Anieri kicked off the Organizational Excellence series by introducing a talk by Mark McKenzie titled “Lean Process at the University of Washington.”

The series, hosted by Maria Anguiano, vice chancellor of planning and budget, and Ron T. Coley, vice chancellor of business and administrative services, seeks to bring to UCR a view into the different ways other organizations are improving their operations and procedures. It consists of four interactive presentations exploring different methodologies, which include presentations by a guest speaker (about 60 minutes), Q&As (about 30 minutes), and workshops (about 75 minutes).

Lean is a process in place at the University of Washington, one that, McKenzie said, began as a comprehensive approach to find ways to become more efficient as an organization. The University of Washington did this by developing its workers and developing a shared culture to achieve results. The result? Less waste and redundancy.

At the University of Washington, the Lean process began with idea boards. Employees created these idea boards so they could move thousands of ideas through to implementation at a reliable, measurable pace. These ideas link closely to the team’s goals, and to closing performance gaps and meeting targets.

In one example, McKenzie walked the audience through the process of how UW brought their transportation “parking ticket” claims process from a 60-plus-day response time down to only two to three days.

By making every team member a problem-solver — under the premise that the people who do the work are the ones who best know how to improve it — there is continuous improvement in the work process and engagement from employees. “Improving the work is the work,” McKenzie said.
McKenzie led a robust Q&A after his talk, which was well-attended by the campus community. More than 160 people — management and staffers alike — attended the session. Afterward, a workshop gave the attendees an opportunity to experience working on the Lean process.

Attendees split up into groups, and then identified an issue at UCR that they felt needed improvement. They then created an “idea board” that mapped out a process that identified what the problem was, the goal in mind, where the bottlenecks were, and ideas they had to improve the issue. Discussions ranged from the onboarding process of new staff members to physical plant estimates to awarding and reporting on scholarships.

Lisa M. Cusick, assistant executive director at Alumni & Constituent Relations, said it was interesting to see how the Lean method might improve operational efficiencies at UCR. “It was also interesting to hear from the various breakout sessions how UCR might implement the process,” she said, adding, “I left [the event feeling] hopeful!”

The Lean process’ value in higher education comes from simplifying complex, organic processes that have grown over time. It helps people break down organizational and process barriers, and facilitates collaboration and ownership, thus providing a better work environment for employees.

Daniele LeCesne, director of University Advancement Budget and Operations, said, “Overall the session provided good insight to one method of improving operational efficiencies. I’m looking forward to the upcoming sessions and hearing how other organizations have made operational improvements, and considering how we can potentially utilize those methods here at UCR.”

To watch the video of Mark McKenzie’s talk, go to http://youtu.be/HcGhuN1KgKo.

After the speaker series, there are plans to hold campus conversations on how UCR will tackle organizational excellence on campus, Anguiano said.

For more information, or become more actively involved in the organizational excellence process, please contact the Organizational Excellence Committee at organizationalexcellence@ucr.edu.

UCR Committee on Organizational Excellence invites all UCR faculty, staff, and students to attend the next three events:

- “Operational Excellence at UC Berkeley” by Peggy Huston
  Wednesday, March 25, 1:30-4:30 p.m.
  HUB 302

- “Implementation & Standardization of HR Systems/Processes” by Omar Reid, City of Houston
  Tuesday, April 14, 1:30-4:30 p.m.
  HUB 302

- “Project Management Office at UC San Francisco” by Mara Fellouris
  Monday, May 11, 1:30-4:30 p.m.
  HUB 302

R.S.V.P. for all the following events — all free — via http://bit.ly/ucr-fulfill or call (951) 827-6030.

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A Trip to China Brings Rewards: A New Scholarship Fund and a Partnership for a
Key Research Center at the School of Business Administration

*Partnerships with Chinese Universities Add a Realistic View of Global Business Culture*

By Kris Lovekin

Dean Yunzeng Wang and Steve Chen, director of international relations at UC Riverside School of Business Administration (SoBA), as well as Jeff Kaatz, UCR assistant vice chancellor of development, traveled to China in January to develop strategic international partnerships for SoBA.

They came back with a $100,000 gift from Xiangdong Li, chairman of both the Sichuan Ruixin Industrial Group and the China West International Education Foundation. Called the “China West Scholarship Endowment Fund,” this generous gift will provide scholarship funds for international students looking to study at SoBA. “I want to express my deepest thanks to Xiangdong Li for investing in our success,” said Dean Wang.

The trio also signed a memorandum of understanding between the Shanghai Maritime University’s (SMU) Logistics Research Center and SoBA’s Institute of Supply Chain Analytics and Logistic Studies. This MOU outlines ways in which the Center and Institute can engage in collaborative research and student exchange. SMU’s Logistic Research Center is highly respected and is located near Yangshan Port, one of the largest deepwater ports in China.

“We made many friends on our trip, and we have significantly increased our partnerships with universities in China,” said Wang. “Supply chain management and logistics are incredibly important in world commerce, and we are part of that world. And thanks to Youfang Huang, president of the Shanghai Maritime University, we also had a chance to tour the Shanghai Pilot Free Trade Zone.” This is the first free-trade zone in China and is being used as a testing ground for a number of economic and social reforms.

The UCR group also hosted and spoke at two receptions in the cities of Chengdu and Wuhan for alumni, parents, prospective students and guests. There was significant interest in UC Riverside and the events were heavily attended. The group also met with a number of local companies during the visit to discuss potential partnership opportunities with SoBA as well as the broader university.

“Moving forward, SoBA will continue to pursue key strategic partnerships with our friends and colleagues internationally,” Wang said. “It is through these partnerships that we will, in part, achieve our vision of becoming a leader in business education.”

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Improvement of Biology Instruction Forges Ahead With HHMI Financial Support

*UC Riverside proposes a Faculty Learning Community model to boost faculty interest in undergraduate biology teaching, increase number of STEM degrees*

By Iqbal Pittalwala

Sadly, fewer than 40 percent of students who enter college intending to major in a science, technology engineering and technology (STEM) field complete a STEM degree. Equally discouraging is that women and underrepresented minorities – about 70 percent of college students – receive only 45 percent of STEM degrees.

But if STEM majors could be increased from 40 percent to just 50 percent, it has potential to generate about 750,000 additional STEM degrees needed to meet the workforce demands over the next decade.
To help achieve this goal, Susan R. Wessler, a distinguished professor of genetics at the University of California, Riverside, has teamed up with John Matsui at UC Berkeley, Joel Rothman at UC Santa Barbara and Paul Koch at UC Santa Cruz to develop an interconnected “Faculty Learning Community,” with chapters at each of the four campuses, to allow faculty to share proven, successful methods that improve undergraduate biology instruction.

Titled “Building a Faculty Learning Community that Spans the University of California,” the project has just received funding of $50,000 from the Howard Hughes Medical Institute (HHMI) to support activities planned for the first year of the three-year project.

“At UC and elsewhere, the reasons students give for leaving STEM majors point to the need for better teaching methods that make courses more inspiring, and learning more collaborative, active and engaging,” said Wessler, the project leader and a HHMI Professor. “The Faculty Learning Community model we propose can lead to systemic change by building a UC campus-wide teaching and learning community and boosting faculty interest in undergraduate teaching and learning.”

The Faculty Learning Community is designed to help each participating university to enhance its teaching approach and learning outcomes. It will disseminate best practices in science teaching and assessment, and provide a venue for launching new projects and programs. In annual meetings that will rotate among the four campuses, UC biology instructors – faculty, postdocs and graduate students – will discuss a number of topics, including how best to share information on facilitating change in teaching and how to implement effective strategies for involving students in research.

“We want to promote institutional change that increases access to biology through improved instruction and effective programs,” Wessler said. “We will train teams of biology faculty from each of the four campuses to increase the adoption and adaptation of best practices by them and their campus colleagues.”

The project also has a strong evaluation component: Evaluators will measure the change in faculty learning pre- and post-training.

‘Hanging Out’ Exhibition Opens Feb. 26

Laundry theme of two-week exhibition, seminar illustrates memories, cultural differences

By Bettye Miller

“Hanging Out,” an exhibition and set of performances developed by UC Riverside anthropology professor Susan Ossman and graduate students in her “Art to Ethnography” seminar, opens in the Afterimage gallery in University Village on Thursday, Feb. 26, with a reception from 5 to 7 p.m.

The exhibition, which runs from Feb. 26 through March 12, is the third stage of an ongoing project Ossman began in 2013 with her solo exhibition “On the Line” and a reprise of that exhibition by artists and UCR graduate students in “On the Line: A Second Look,” both presented at La Sierra University’s Brandstater Gallery.

Afterimage is located at 1201 University Ave., Suite 104B. The opening reception is free and open to the public, and will include music by Southern California pianist and composer and UCR graduate student Dhiren Panikker, and performances by Riverside dancers led by Sue Roginski and Casey Avaunt.

“ ‘Hanging Out’ laundry is a theme that is evocative of memories and cultural differences. It can illustrate class
relations and changing relationships with the environment,” explained Ossman, who is a painter. “Everyone will have a chance to share their ‘laundry stories’ in interactive performances and storytelling sessions.”

Interviews and events recorded during the exhibition will become an archive for further artistic and anthropological research, the anthropologist added.

On Saturday, March 7, there will be a set of performances and a chance for the public to share their laundry stories. That event, “The Poetics of Laundry,” begins at 3 p.m.

A closing seminar and reception are planned for Thursday, March 12, from 2 to 5 p.m. Art critics, anthropologists, curators and artists from around the country will gather to view the exhibition and talk about its contribution to new forms of collaborative interdisciplinary research. There is limited seating for this event, so reservations are required. Contact Susan Ossman at sossman@ucr.edu.

Throughout the run of the exhibition graduate students in the “Art to Ethnography” seminar will be available to lead gallery visits. Arrangements may be made by contacting Ossman.

Mathematician Highlighted For Most Highly Cited Articles

Research papers by UC Riverside’s Vyjayanthi Chari are ranked 3 and 21 in International Mathematics Research Notices

By Iqbal Pittalwala

Vyjayanthi Chari, a professor of mathematics, has been highlighted twice in a list of most highly cited articles published in the International Mathematics Research Notices (as of Fe. 1, 2015). Chari’s research paper “Characters and blocks for finite-dimensional representations of quantum affine algebras” (along with a coauthor) ranked 3, while her paper “Braid group actions and tensor products” ranked 21.

“The International Mathematics Research Notices is one of the top math journals; in 2013 its impact factor placed it 38th out of 299 math journals,” said Cindy Larive, the divisional dean for chemistry, mathematics and physics & astronomy in the College of Natural and Agricultural Sciences. “It is especially impressive that Dr. Chari has two articles on the most-cited list, a strong indicator of the impact of her research.”

Chari received her doctoral degree in mathematics at the University of Bombay (now the University of Mumbai), India, in 1988, after which she was a fellow at the Tata Institute of Fundamental Research, Mumbai. She joined UC Riverside in 1991.

Chari is an expert in representation theory, a fundamental area of mathematics used to understand abstract algebraic ideas by representing them as matrices. It both uses and has a profound impact on many areas of modern mathematics, and plays an important role in physics where it is used to understand the nature’s symmetries.

“My work is in the representation theory of affine Lie algebras; these are infinite-dimensional objects and how they manifest themselves in finite-dimensional objects,” Chari said. “This is a very abstract area of mathematics but my graduate students and I have found that using the power of sophisticated computer programs provides deep insight into the theory.”

Chari has held several visiting appointments in her long career. She was an invited senior participant at the
Mittag-Leffler Institute, Sweden; an invited professor at the University of Cologne, Germany; an invited professor at Paris 7, France; an invited research fellow at Brown University, Rhode Island; and an invited senior participant at Hausdorff Research Institute for Mathematics, Bonn, Germany. Later this year, she will be a visiting professor at the University of Rome Tor Vergata, Italy, where she will give a set of advanced lectures on her work.

Currently, she is the editor of the *Pacific Journal of Mathematics and Algebras and Representation Theory*. She is the author of nearly 75 research papers, a book, and several edited volumes of conference proceedings.

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### New Paper-like Material Could Boost Electric Vehicle Batteries

*Researchers create silicon nanofibers 100 times thinner than human hair for potential applications in batteries for electric cars and personal electronics*

By Sean Nealon

Researchers at the Bourns College of Engineering have developed a novel paper-like material for lithium-ion batteries. It has the potential to boost by several times the specific energy, or amount of energy that can be delivered per unit weight of the battery.

This paper-like material is composed of sponge-like silicon nanofibers more than 100 times thinner than human hair. It could be used in batteries for electric vehicles and personal electronics.

The findings were just published in a paper, “Towards Scalable Binderless Electrodes: Carbon Coated Silicon Nanofiber Paper via Mg Reduction of Electrospun SiO2 Nanofibers,” in the journal *Nature Scientific Reports*. The authors were Mihri Ozkan, a professor of electrical and computer engineering, Cengiz S. Ozkan, a professor of mechanical engineering, and six of their graduate students: Zach Favors, Hamed Hosseini Bay, Zafer Mutlu, Kazi Ahmed, Robert Ionescu and Rachel Ye.

Scanning electron microscope images of (a) SiO2 nanofibers after drying, (b) SiO2 nanofibers under high magnification (c) silicon nanofibers after etching, and (d) silicon nanofibers under high magnification.

The nanofibers were produced using a technique known as electrospinning, whereby 20,000 to 40,000 volts are applied between a rotating drum and a nozzle, which emits a solution composed mainly of tetraethyl orthosilicate (TEOS), a chemical compound frequently used in the semiconductor industry. The nanofibers are then exposed to magnesium vapor to produce the sponge-like silicon fiber structure.

Conventionally produced lithium-ion battery anodes are made using copper foil coated with a mixture of graphite, a conductive additive, and a polymer binder. But, because the performance of graphite has been nearly tapped out, researchers are experimenting with other materials, such as silicon, which has a specific capacity, or electrical charge per unit weight of the battery, nearly 10 times higher than graphite.

The problem with silicon is that it suffers from significant volume expansion, which can quickly degrade the battery. The silicon nanofiber structure created in the Ozkan’s labs circumvents this issue and allows the battery to be cycled hundreds of times without significant degradation.

“Eliminating the need for metal current collectors and inactive polymer binders while switching to an energy dense material such as silicon will significantly boost the range capabilities of electric vehicles,” Favors said.

This technology also solves a problem that has plagued free-standing, or binderless, electrodes for years: scalability. Free-standing materials grown using chemical vapor deposition, such as carbon nanotubes or
Researchers Build Atomically Thin Gas and Chemical Sensors

Sensors made of molybdenum disulfide are small, thin and have a high level of selectivity when detecting gases and chemicals

By Sean Nealon

The relatively recent discovery of graphene, a two-dimensional layered material with unusual and attractive electronic, optical and thermal properties, led scientists to search for other atomically thin materials with unique properties.

Molybdenum disulfide (MoS2) has proved to be one of the most promising. Single-layer and few-layer molybdenum disulfide devices have been proposed for electronic, optoelectronic and energy applications. A team of researchers, led by engineers at the University of California, Riverside’s Bourns College of Engineering, have developed another potential application: sensors.

“The sensors are everywhere now, including in smart phones and other portable electronic devices,” said Alexander Balandin, UC Presidential Chair and professor of electrical and computer engineering at UC Riverside, who is the lead researcher on the project. “The sensors we developed are small, thin, highly sensitive and selective, making them potentially ideal for many applications.”

Balandin and the graduate students in his lab built the atomically thin gas and chemical vapor sensors from molybdenum disulfide and tested them in collaboration with researchers at the Rensselaer Polytechnic Institute in Troy, N.Y. The devices have two-dimensional channels, which are great for sensor applications because of the high surface-to-volume ratio and widely tunable concentration of electrons.

Schematic of the Molybdenum disulfide (MoS2) thin-film sensor with the deposited molecules that create additional charge.

The researchers demonstrated that the sensors, which they call molybdenum disulfide thin-film field-effect transistors (TF-FET), can selectively detect ethanol, acetonitrile, toluene, chloroform and methanol vapors.

The findings were published in a recent paper, “Selective chemical vapor sensing with few-layer MoS2 thin-film transistors: Comparison with graphene devices,” in the journal Applied Physics Letters. In addition to Balandin, co-authors were Rameez Samnakay and Chenglong Jiang, both Ph.D. students in Balandin’s lab, and Michael Shur and Sergey Rumyantsev, both of Rensselaer Polytechnic Institute.

The selective detection did not require prior functionalization of the surface to specific vapors. The tests were conducted with the as fabricated devices and intentionally aged devices. The molybdenum disulfide sensors used in the study were aged for two months because practical applications require that sensors remain...
stable and operational for at least a month.

Sensors made with atomically thin layers of MoS2 revealed better selectivity to certain gases owing to the electron energy band gap in this material, which resulted in strong suppression of electrical current upon exposure to some of the gases. Graphene devices, from the other side, demonstrated selectivity when one used current fluctuations as a sensing parameter.

“Sensors implemented with atomically thin MoS2 layers are complementary to graphene devices, which is good news,” Balandin said. “Graphene has very high electron mobility while MoS2 has the energy band gap.”

The uniqueness of the UC Riverside-built atomically thin gas sensors – both graphene and MoS2 – is in the use of the low-frequency current fluctuations as additional sensing signal. Conventionally such chemical sensors use only the change in the electrical current through the device or a change in the resistance of the device active channel.

In a separate paper, the same researchers demonstrated high temperature operation of the molybdenum disulfide atomically thin film transistors. The work was described in a paper, “High-temperature performance of MoS2 thin-film transistors: Direct current and pulse current-voltage characteristics,” that was just published in the *Journal of Applied Physics*.

Many electronic components for control systems and sensors are required to operate at temperature above 200 degrees Celsius. Examples of the high temperature applications include turbine engine control in aerospace and energy generation and oil field instruments.

The availability of transistors and circuits to operate at temperatures above 200 degrees Celsius is limited. Devices made of silicon carbide and gallium nitride – conventional semiconductors – hold promise for extended high-temperature operation but are still not cost-effective for high volume applications. There is a need for new material systems that can be used to make field-effect transistors sensors that work at high temperatures.

The work at UC Riverside was supported by the Semiconductor Research Corporation (SRC) and Defense Advanced Research Project Agency (DARPA) through STARnet Center for Function Accelerated nanomaterial Engineering (FAME).

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**DID YOU KNOW?**

*Vitamin D and Your Health*

Why is Vitamin D good for your health? What is the appropriate dose? What are good sources of Vitamin D?

Dr. Anthony Norman, distinguished professor of biochemistry and biomedical sciences emeritus, will review the fundamentals of Vitamin D and how it produces a biological response contributing to good health on March 4 from noon to 1 p.m. at HUB 302 North. Norman is an internationally renowned expert on Vitamin D.

The event is sponsored by the UCR Wellness Program for Faculty and Staff, School of Medicine, and the UCR Global Food Initiative Committee.

To register, go to the UC Learning Center at www.ucrlearning.ucr.edu. Enter your UCR NetID and password.
Type in “Vitamin D” in the search field and click “go.” Click on the title of the class you wish to attend and select Register. Review the activity details and select “submit” to complete your registration.

If you have questions, please contact Julie Chobdee at extension 2-1488 or email julie.chobdee@ucr.edu.

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**Who Says?**

*UCR staff and faculty weigh in on the issues of the day via media outlets at home and abroad*

“Who is being depicted in a portrait can consequently be an area of considerable controversy among art historians... The goal of this project is to be able to use state-of-the-art face recognition to identify the individuals seen in a particular portrait.”

*Amit K. Roy-Chowdhury, professor of electrical engineering, on his collaboration with Conrad Rudolph, professor of art history, using state-of-the-art face recognition technology on portraits to aid art historians in identifying particular individuals*

**YAHOO!**

“(UCR) has critical mass of all groups, so students feel quite comfortable. ... They feel it’s a welcoming campus and an inclusive campus.”

*Steven Brint, vice provost for undergraduate education, on UCR’s support for Latino students and its role as the first UC campus to be designated as a Hispanic Serving Institution in 2008*

**SACRAMENTO BEE**

“The two subspecies were originally described as separate species, partly on the basis of small differences in the tail feathers between them, but were then classified in 1945 as subspecies of the Bahama woodstar. ... It’s time now to call these two distinct species of hummingbirds.”

*Christopher Clark, assistant professor of biology, on the recent discovery of a new bird species, a tiny ‘bee hummingbird’ family, in the Bahamas*

**DISCOVERY NEWS**

“It is the first time that anyone has used synthetic biology to reprogram a plant response to a specific chemical.”

*Sean Cutler, associate professor of cell biology and chemistry, on his research that genetically engineers plants to consume less water after they are exposed to an agrochemical, which will allow the plants to survive on less water during California’s four-year drought*

**LOS ANGELES TIMES**

“Students from high-prestige institutions are likely to be better-placed not only because they come from high-prestige programs with higher social and cultural capital, but also because they are probably more talent-
ed and productive than the students who attended less prestigious institutions (on the average)."

*Robert Hanneman, professor of sociology, on the prevalence of elitism in academia*

**SCIENCE MAGAZINE**

“The Obama graduation initiative will move forward if community college students can be relieved of economic hardships.”

*John Levin, professor of education, on President Obama’s proposal to make the first two years of community college free for those willing to work for it*

**UNIVERSITY BUSINESS**

“The tighter controls reflect instability within the party as President Xi Jinping shakes up the political landscape in a much-publicized anti-corruption campaign that’s netted thousands of government officials. ... The strategy echoes back to the political purges of Mao Zedong, the founding father of the People’s Republic of China.”

*Perry Link, distinguished professor of comparative literature and foreign language, on the growing Internet censorship in China and how the strategy of President Xi Jinping bears a strong resemblance to the political purges of Mao Zedong*

**SOUTH CHINA MORNING POST**

“Even if (the research for a new lightweight steel) takes a long time before it can become a part of production, the novelty of the microstructure that forms could be very useful for thinking about how to construct new alloys.”

*Suveen Mathaudhu, assistant professor of mechanical engineering, on international research on a new lightweight steel that could improve cars’ fuel efficiency*

**SCIENTIFIC AMERICAN**

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**Research and Scholarship**

*David Swanson Lectures in Hawaii*

Sociology professor David A. Swanson presented an invited lecture about the population of 18th century Hawai‘i as part of the University of Hawai‘i Sociology Colloquium Series on Feb. 13.

Swanson, who served as a member of the U.S. Census Bureau’s Scientific Advisory Committee for six years and chaired the group for two years, discussed “A New Estimate of the Hawaiian Population for 1778, the Year of First European Contact.”

The demographer said estimates of the size of the Hawaiian population at the time of first European contact range from less than 300,000 to 800,000. Swanson added a new number to this set with an empirically based estimate of 681,000 based on a standard demographic forecasting method run in reverse. His new estimate provides support to those who believe that lower estimates downplay the extent of the genocidal effect of Eu-
European diseases such as syphilis, tuberculosis, and influenza on a population that had no experience with them until Captain Cook arrived.

“It is not surprising that uncertainty would surround the number of Hawaiians, a pre-literate population, at the time of first European contact in the year 1778,” he says. “No known census of this population at that time exists and without a full count, the only recourse is to estimate the size of this population. Even the estimates based on data and for which methodological descriptions are available, however, represent attempts to reconstruct the Hawaiian population in 1778 using information available at the time of European contact or earlier. These estimates include the use of counts of houses in villages visited or observed by the Europeans, their estimates of average household size, and extrapolation of these estimates to all of Hawai‘i.

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**Awards and Honors**

*Google Gives Lick Observatory $1 million*

The University of California’s Lick Observatory, which has been making important discoveries while training generations of scientists for more than 100 years, has received $1 million from Google to bring hands-on astronomical experiences to students and the public. The unrestricted funds, spread over two years, will go toward general expenses.

“I am delighted to see a company like Google invest in the support of scientific discovery. Generous gifts like this will show others in the private sector the impact that they can have in furthering science, education, and public outreach,” said Gabriela Canalizo, a professor of astrophysics in the Department of Physics and Astronomy at UC Riverside. Canalizo is the main Lick user at UCR and a member of the Lick Council.

Lick Observatory, managed by UC Santa Cruz, is located atop Mt. Hamilton east of San Jose. It was established in 1888 and currently houses seven telescopes.

“We at UC highly value Lick Observatory’s unique capabilities,” said Claire Max, interim director of the University of California Observatories (UCO), which operates Lick. “For example, Lick’s telescopes enable science projects that need lots of repeated observations during the course of a year or more; these can be done much more successfully at Lick than at the 8-10-meter telescopes, where observing time is extremely tight. Google’s very generous gift will make it possible for Lick to provide these opportunities and to continue to develop forefront tools such as adaptive optics, which removes image blurring caused by turbulence in Earth’s atmosphere.”

**UCR Honored by Riverside City Council and Metropolitan Museum for Cahuilla Exhibit**

The Riverside City Council and Riverside Metropolitan Museum honored the UC Riverside community and others in January for contributions to the development of an exhibition about Cahuilla people that opened in September and will run through Aug. 31, 2017.

The exhibition was authored and curated by Sean C. Milanovich, a Ph.D. student in history who served an internship at the museum as associate curator of anthropology. He is a member of the Agua Caliente Band of Cahuilla Indians.

“CAHUILLA CONTINUUM: TÚKU, ÍVAX, TÚLEKA*” tells the story of the Native American people who have lived in Southern California since the beginning of time. There are nine federally recognized Cahuilla reservations in Southern California: Agua Caliente, Augustine, Cahuilla, Cabazon, Los Coyotes, Morongo, Ramona, Santa Rosa, and Torres Martinez.
The exhibition illustrates Cahuilla culture through baskets, branding irons, ollas, regalia, paintings, photographs, and stories. More than 160 objects are displayed and are from collections of the Riverside Metropolitan Museum, National Museum of the American Indian, Cabazon Band of Mission Indians Cultural Museum, and private collectors.

Members of the Cahuilla community, including many associated with UC Riverside, played a pivotal role in developing the exhibition, said Cliff Trafzer, distinguished professor of history and Rupert Costo Chair in American Indian Affairs.

Among the exhibition’s supporters are the California Center for Native Nations, the Rupert Costo Endowment in American Indian Affairs, and UC Riverside; also UCR alumni Anthony Madrigal, Bill Madrigal, Luke Madrigal, Will Madrigal and Henry Vasquez; Ph.D. student Robert Przeklasa; and undergraduate Joshua Thunder Little.

UCR Alumnus Selected as an Alfred P. Sloan Fellow

Alumnus Christopher Reinhard has been selected as a 2015 Alfred P. Sloan Fellow in Ocean Sciences. The Sloan Research Fellowships are extraordinarily competitive awards involving nominations for most of the very best early-career scientists from the United States and Canada.

At UC Riverside, Reinhard worked with Timothy Lyons, a distinguished professor of biogeochemistry. Reinhard received his doctoral degree in Earth sciences in 2012, after which he held a postdoctoral appointment at Caltech. He is now an assistant professor of Earth and atmospheric sciences at the Georgia Institute of Technology.

“Chris stands out for his extraordinary creativity, productivity, integrity, and research breadth across numerical and analytical approaches that span rigorously across geology, biology, chemistry, and ocean sciences,” noted Lyons in nominating Reinhard for the prestigious fellowship. “He is one of a kind, one to watch, and an outstanding candidate for the Sloan ... I can’t think of anyone more deserving.”

Reinhard’s other honors include a UCR Chancellor’s Distinguished Fellowship, a Roland Blanchard Fellowship and an O. K. Earl Postdoctoral Fellowship. At Georgia Tech he researches the chemical evolution of Earth’s oceans and atmosphere, the development and application of isotopic and trace element paleoproxies, biogeochemical dynamics in modern oxygen-deficient aqueous environments, and the emergence and long-term stability of planetary biosignatures.

Ariel Dinar Named 2015 AAEA Fellow

Ariel Dinar, professor of environmental economics and policy at the University of California, Riverside School of Public Policy, has been named a 2015 Fellow of the Agricultural and Applied Economics Association (AAEA), the organization’s most prestigious honor.

Founded in 1910 as the American Farm Management Association, the AAEA is a professional organization of scholars and policy-makers who use economic tools to address agricultural, developmental, environmental, food and consumer, natural resource, regional, rural, and related economics and business issues. Members work for academic institutions, government agencies, nongovernmental agencies, think tanks, and the private sector.