President Yudof Leaving UC System

Mark G. Yudof, who joined the UC in 2008, will end his tenure in August

Last week, UC President Mark G. Yudof issued the following announcement:

“I have decided to bring to a close my tenure as president of the University of California, effective Aug. 31, 2013. While the decision is my own, the moment comes with a mixture of emotions. For a transplant from Texas, by way of Philadelphia and Minnesota, every day at the University of California has brought new wonders.

“UC remains the premier public university system in the world, and I was both honored and humbled to serve as its president for what has been nearly five years now. I will miss my daily interactions across the system with so many dedicated, capable, and intellectually stimulating people.

“Over the past few months, however, and after careful consultation with my family, it has become clear to me that the time has come for me to step away and return to the teaching of law on the Berkeley campus. The prior 18 months brought a spate of taxing health issues. Though these challenges have been largely overcome, I feel it is time to make a change in my professional lifestyle.

“Beyond personal considerations, this also appears to be an apt time for the university to bring in fresh leadership. When I arrived in 2008, the economy had begun to unravel and state coffers were tumbling deep into the red. With its budget slashed, the University was presented with one of the most severe challenges in its history.

“Now, it appears the storm has been weathered. We are not fully in the clear, but we are much closer than we were even a few months ago. I look forward to working closely in the months ahead with Gov. Brown, Assembly Speaker Perez, Senate President Pro Tem Steinberg and other state leaders to ensure that the university is positioned to continue on this forward course, which ultimately will benefit all Californians.

“It is important to note that we – members of the entire UC community—have made it through this rough passage with our fundamental attributes intact. We have preserved excellence in our academics, research and health care. We have kept our doors open to all worthy students, regardless of family income levels, embracing the Blue and Gold financial aid program for low- and middle-income students, and raising more than $671 million through the Project You Can scholarship program.

“Many, many people contributed to this remarkable achievement: employees, including tenured faculty, who accepted without complaint a furlough program that cut into their paychecks; students and their families,
who endured rising tuition rates; administrators and staff, who worked with great vigor and creativity to carve out savings through improved efficiencies, and California voters, who finally agreed that the cuts needed to stop and brought relief last November by approving Proposition 30. I applaud and am thankful for all of these contributions.

“I also would be remiss not to express my gratitude to the Regents. Throughout, they have provided the leadership and unwavering support needed for the university to face down this crisis. I was privileged to serve under three gifted board chairs: Richard Blum, Russell Gould, and Sherry Lansing. I will leave it to others to judge what difference my leadership made, if any, but I will say that I entered each day with a laser focus on preserving this great public treasure, not just in the present day, but for generations of Californians to come. And in the end, what matters most is what still remains: a vibrant public university system, the envy of the world, providing California with the beacon of hope and steady infusion of new thinking that are necessary for any society to flourish.”

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**Former Riverside Mayor Heads UCR Research Center**

*Ronald O. Loveridge appointed director of the Center for Sustainable Suburban Development*

Ronald O. Loveridge, who has played an active leadership role in local, regional and state government for more than 30 years, has been named director of the Center for Sustainable Suburban Development at UCR. The appointment was made official on Jan. 1.

Loveridge, who has been an associate professor of political science at UCR since 1965, succeeds Anil Deolalikar, a UCR professor of economics who has been CSSD’s director since July 2009.

“I am excited to return to the campus both to teach and to lead CSSD,” Loveridge said. “The center will support, and connect, the best of academic research with important policy choices for a sustainable future for this region and Southern California.”

Well-known regionally and nationally for his active leadership roles in a variety of local, state and national organizations, Loveridge served the city of Riverside for 33 years, first as a city councilman from 1979 to 1994, then as its mayor from 1994 to December 2012.

As mayor, he taught one course a year at UCR, “Local Leadership in California.” With his retirement as mayor of Riverside, he will focus his attention at UCR on research related to the growth of suburbs, public policy, urban planning, transportation, air quality, and the intersection of cities and natural lands.

“It is exciting to see Ron take the helm of the Center for Sustainable Suburban Development. He brings a combination of leadership, experience, scholarship, and commitment to environmental issues that will serve the community and the university well,” said Martin Johnson, chair of the Department of Political Science.

In addition to his duties with the city of Riverside and UCR, Loveridge served as president of the League of California Cities in 2003-04, and is on the boards of the California Air Resources Board, South Coast Air Quality Management District, the Southern California Association of Governments, the Western Riverside Council of Governments and the March Joint Powers Authority. In 2004 he was appointed by Gov. Arnold Schwarzenegger as the South Coast AQMD’s representative to the California Air Resources Board. He currently chairs the Benchmarks Task Force of the Southern California Association of Governments.

In 2010 he served as president of the National League of Cities, a Washington, D.C.-based organization he has been a member of since 2004. He served on the National League’s Executive Committee as its immediate past president in 2011. He also was recently inducted into the National Academy of Public Administration, a...
In September 2012 he was appointed by the Ontario City Council to serve on the five-member Ontario International Airport Authority, which would oversee operation of the LA/Ontario International Airport if the authority gains control of the facility from Los Angeles World Airports, its current owner/operator.

Loveridge earned a bachelor’s degree from the University of the Pacific and master’s and doctorate degrees in political science from Stanford University.

The Center for Sustainable Suburban Development, established in 2003, provides research and analysis with a policy focus on the wide range of issues confronted by suburbs, which have become the dominant form of urban growth around the world.

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**All We Want in the New Year is Your Honest Opinion**

*All we want in the New Year is your honest opinion to improve the environment for everyone at UCR.*

By Kris Lovekin

UCR students and employees will have the opportunity to participate in an unprecedented survey of the climate, inclusion and work-life issues at the university as part of the systemwide Campus Climate Study.

The survey will be conducted at each of the 10 UC campuses as well as research centers and administrative offices. It is designed to provide the Office of the President with a snapshot of the learning, living and working environments. It is believed to be the first time that a university system the size of the UC has attempted a survey of this scale.

The UCR version of the survey has approximately 85 questions and should take between 22 and 35 minutes to complete. The surveying period begins on Feb. 4 and is scheduled to end after eight weeks. For individuals without regular access to a computer, a paper version is available, as well as a Spanish-language version.

“Whether you fill it out at work or while you have some extra time at home, all I ask is that you fill it out,” said Yolanda Moses, associate vice chancellor for equity and diversity and co-chair of the campus committee set up to oversee the deployment of the survey at UCR. “It matters because if you feel respected, you will thrive. If not, well, things have to change. And if enough of you fill out this survey, you will help us know how to change.”

“Even if we are doing well, there are still things we can do better,” she added.

Moses said the goal was to get a response rate in excess of 30 percent.

To help entice people to take the survey, the UC Office of the President and individual universities are offering a wide range of prizes, including big-ticket awards like a $10,000 scholarship, two graduate academic or professional students will receive $5,000 stipends, two faculty members will receive $5,000 research grants and five staff members will receive $2,000 professional development grants. Each location also will give away iPads to two survey participants.

“We are looking into other giveaway items as well,” Moses said.

The committee has placed an emphasis on security and anonymity in regards to the survey. The survey itself will be conducted through staff, faculty and student portals, rather than via email or a public website. In addition, the committee and the UC has worked to create a double-blind system that ensures total anonymity.
“When someone logs in to fill out the survey, their ID will be converted into a 32 character unique ID. We will be able to keep track of who took the survey, but not what they said,” said Larry McGrath, senior director for technology operations in Computing and Communications.

McGrath added that using this system allows the committee to customize reminder messages only to individuals who have not yet filled out the survey, rather than sending out campuswide messages.

The project is funded by the UC President’s Initiative Fund, a private endowment for special projects. No tuition or taxpayer dollars are being used. Additional information, including how the survey is being administered and how results will be used, can be found at campusclimate.ucop.edu.

For more information about the UCR survey, contact Moses at yolanda.moses@ucr.edu or call (951) 827-6223.

UC Riverside Nanotechnologists Help Launch New National Center Devoted to Microelectronics

The campus is part of a $28 million grant to fund “Center for Spintronic Materials, Interfaces and Novel Architectures,” aimed at supporting U.S. semiconductor industry

By Iqbal Pittalwala

Three UCR scientists and engineers are members of a new national research center — the Center for Spintronic Materials, Interfaces, and Novel Architectures (C-SPIN) — focused on developing the next generation of microelectronics. Led by the University of Minnesota, C-SPIN is being supported by a five-year, $28 million grant, about $3 million of which is allocated to UCR.

The grant was awarded by the Semiconductor Research Corp., a global research collaboration of private companies, universities and government agencies; and the Defense Advanced Research Projects Agency (DARPA).

C-SPIN at the University of Minnesota will bring together top researchers from across the nation, such as UCR’s Roland Kawakami, Ludwig Bartels and Cengiz Ozkan, to develop technologies for spin-based computing and memory systems. Unlike today’s computers, which function on the basis of electrical charges moving across wires, emerging spin-based computing systems will process and store information through spin, a fundamental property of electrons.

“Conventional silicon electronics is running out of steam in terms of improving its performance,” said Kawakami, a professor of physics and astronomy. “It is known as the ‘end of the roadmap’ for silicon-based technologies. Silicon won’t go away, but there are physical limits to how small silicon transistors can get before they stop working. Technology is now getting very close to this limit, so the semiconductor companies are looking for alternative methods for continued improvement in electronics.”

Kawakami’s research group will be working on the fabrication and testing of spintronic devices made from two-dimensional crystals, namely metal dichalcogenides (inorganic materials with unique electronic properties).
and graphene. Bartels’s and Ozkan’s research groups will be working on the growth and characterization of two-dimensional metal dichalcogenides. Bartels, a professor of chemistry, Ozkan, a professor of mechanical engineering, and Kawakami are part of the Materials Science and Engineering Graduate Program at UCR.

C-SPIN’s director, Jian-Ping Wang, an electrical and computer engineering professor at the University of Minnesota, explained that the ability to scale semiconductor technology has led to the information revolution of the past half-century.

“However, today’s semiconductor technology is reaching its fundamental limits in terms of density and power consumption,” he said. “Spin-based logic and memory based on the hybridization of magnetic materials and semiconductors have the potential to create computers that are smaller, faster and more energy-efficient than conventional charge-based systems.”

Spin-based computing has gained considerable interest recently due to advances in a number of areas. It can combine memory and logic at the device and circuit level, thereby leading to much faster operation for data-intensive applications. This is crucial in the information age and includes applications such as searching, sorting, and image recognition.

Especially important is the room temperature spin transport in graphene with high spin injection efficiency, first demonstrated by Kawakami’s group. C-SPIN will help develop the graphene spintronic devices as well as explore new two-dimensional metal dichalcogenides, which are expected to allow for more facile spin manipulation.

“All the work on spin in two-dimensional crystals is at the cutting edge of science and engineering,” Kawakami said.

Research at C-SPIN is expected to have an impact beyond the world of computer science and engineering resulting in advances in nanotechnology, materials science, physics, chemistry, circuit design, and many other fields. Headquartered at the University of Minnesota-Twin Cities, the center will fund research for 31 leading experts from 14 universities working in six scientific disciplines. C-SPIN will also fund research from more than 60 doctoral and post-doctoral students and host industry researchers-in-residence.

In addition to the University of Minnesota-Twin Cities and UCR, the 12 other universities involved are Carnegie Mellon University; Cornell University; Johns Hopkins University; Massachusetts Institute of Technology; Pennsylvania State University; Purdue University; University of Alabama; University of California, Santa Barbara; University of Iowa; University of Michigan; University of Nebraska; and University of Wisconsin-Madison.

Industry partners include Applied Materials, Global Foundries, IBM, Intel Corporation, Micron Technology, Raytheon, Texas Instruments and United Technologies.

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**App Helps Catch Drunk Drivers**

*UC Riverside computer science professor and students have created a free app that makes it easy to record and report drunk drivers*

By Sean Nealon

Nearly 30 Americans a day die in vehicle crashes that involve drunk drivers, according to the Centers for Dis-
ease Control and Prevention. That number is so appalling to Frank Vahid, a computer science professor in the Bourns College of Engineering, that he plans to spend much of the rest of his academic career helping to eradicate the problem.

His first offering? A new, free Android and iPhone app called DuiCam that lets drivers use their cell phones to easily record erratic drivers. It has already been downloaded more than 1,000 times.

To use the app, all a driver needs is a dashboard or windshield mount. The app lets the phone constantly record what’s happening in front of the car, while deleting footage after 30 minutes so the phone’s storage isn’t overwhelmed.

If app users see what looks like a drunk driver, they can—after safely pulling over—easily replay the video and zoom in to look at the license plate and other identifying marks on the offending car to pass on to the police. The app even makes it possible to email a snapshot or the entire video to help investigators get the driver off the road.

“I have observed many drunk drivers and seen a hit and run involving a drunk driver, and in every case we have the same situation ... we see it happen, call 911 to report it and the first question the police have is, ‘What’s the license plate?’” Vahid said. “These things happen so quickly and license plates are quite small, so it’s very hard to get it at the time. That’s why I was thinking it would be helpful to have a device that’s always recording what’s in front of the car.”

Vahid began thinking about this idea about five years ago.

“I asked myself, ‘What are the biggest problems facing this country?’ To me, drunk driving is one of the biggest and most outrageous; over 10,000 deaths a year in the U.S. caused by drunk driving and several hundred thousands of injuries. If you think about it, that’s three Sept. 11s every year, and it’s a pretty absurd situation because it’s preventable.”

Five years ago, the technology for such an app wasn’t widely available, but now virtually every cell phone has a good quality camera, and many people already have mounts for their dashboards or windshields, so they can easily use the camera feature on their phone.

Vahid has spent more than a year researching drunk driving. He talked to district attorneys, psychologists and police officers to identify products that could legally and safely help tackle the problem.

Now, Vahid and UCR computer science majors Timothy Cherney and Daniel de Haas, the students who programmed the new apps, are developing more features to DuiCam, such as automatic license plate recognition. Information on their apps, including how to support future development, is available at DuiCam.org.

UCR Welcomes Interim Chancellor Jane Close Conoley

Conoley’s priority is to help the campus meet the goals set in strategic plan, “UCR 2020”

By Lille Bose

On Jan. 11, UCR welcomed Interim Chancellor Jane Close Conoley at a reception held at the University Theatre. Conoley comes from UC Santa Barbara, where she is the dean of the Gevirtz Graduate School of Education. Conoley — a first-generation college student — has sustained her academic career with a primary interest
in interventions with children with disabilities. Among her many achievements, Conoley is a writer and editor, and has won university-level teaching and professional awards and taken leadership roles in many professional organizations.

At her first public appearance at UCR, Conoley exuded charm and humor. “I’m honored beyond words to serve as interim and impressed by the warm welcome UCR has given me,” she said.

First on her agenda was to clarify her goals as interim chancellor. Even before coming on board, Conoley said she knew of UCR and was impressed by the priorities the campus had set through the strategic plan, “UCR 2020: The Path to Preeminence.” “I promise not to divert you and your energies in activities that don’t bear directly on improving the capacity of faculty, the experience of students, and the working conditions and morale of staff,” she said.

Conoley also acknowledged former Chancellor Timothy P. White’s legacy: “I do know I’m walking behind very mighty footsteps, so I’m going to do my best [to serve UCR].”

In the next few months, Conoley said, she and Provost Dallas Rabenstein will be sharing specific benchmarks and evidence of UCR’s progress in solving problems such as restructuring colleges and faculty shortages. She mentioned goals UCR has already met, such as the success of the School of Medicine and laying the foundation for the School of Public Policy, as proof that “things we dream for will happen.”

To work with UCR to achieve future goals, Conoley said, she would draw on her previous work as dean at Texas A&M University and UC Santa Barbara. “I like being in organizations where it’s not us and them, but it’s us,” she said.

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GETTING PERSONAL

Michael Todd

*Principal development engineer at CE-CERT*

By Konrad Nagy

At Mr. Taco, a popular Mexican restaurant on Main Street, Mike Todd waits for his shrimp tostadas to arrive. The 20-year Center for Environmental Research and Technology (CE-CERT) employee is anxious about being interviewed, which is funny because at six feet three inches tall, Todd should be an imposing figure. But while Todd may look like a basketball player, he speaks and acts like a scientist.

Which makes sense, since Todd is one of CE-CERT’s principal development engineers. His job is to research intelligent transportation systems and their impact on traffic, energy consumption and fuel consumption. Every day he manages several projects involving research teams that consist of staff, faculty and students.
“One of the things I love about UCR is the unique research that’s always taking place and constantly changing,” Todd said. “We’re always doing new things.”

“New things” might be an understatement; the variety of projects that Todd oversees often affects everyone on campus and beyond.

For instance, Todd worked on a project where he had to evaluate traffic flow on the 60 and 215 freeways. His work resulted in the implementation of a truck-only lane that reduced congestion and overall traffic.

Todd also worked on improving computer systems for an autonomous vehicle (a vehicle that drives itself and can navigate through various terrains). The vehicle had to drive through a course at CE-CERT without touching any obstacles. As a project coordinator, Todd found himself dodging cars and corresponding with a team of French researchers.

One of Todd’s favorite projects was UCR IntelliShare, funded in part by Honda. For the project, he worked to design a keyless management system that matched electric vehicles with drivers at various stations around UCR (a system somewhat similar to the Zipcar’s). Unfortunately, since the project was not economically viable for Honda, it was eventually dropped.

But each project offers its own unique perks.

Todd showcased the IntelliShare system at the Tokyo Auto Show. For another project, he was flown to China.

Over his finished plate at Mr. Taco, Todd reflected on his long career in CE-CERT. He said confidently, “UCR continues to grow and there are always tremendous opportunities.”

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**DID YOU KNOW?**

**Police Arrest Three Robbery Suspects**

Three Moreno Valley men have been arrested in connection with recent robberies near the UCR campus.

The suspects are Xavier Vining, 20; Doneal Lewis Cephus, 18; and Markeith Shavers, 19.

The arrests resulted from an excellent team effort displayed by both the Riverside Police Department and the UCR Police Department. Neither agency is looking for any additional suspects at this time.

Five robberies were reported on Wednesday, Jan. 16, between 8 p.m. and 9 p.m. in neighborhoods around the UCR campus.

UCR Police Chief Mike Lane said his congratulations go to the whole team, but especially UCR Sgt. Seth Morrison, Detective Trish Harding and Detective John Enriquez. He also gave credit to students who had the presence of mind to offer good descriptions of the suspects in each case.
Anyone with additional information regarding these incidents is asked to contact Riverside Police Department detectives Rick Cobb at (951) 353-7135 or Rick Wheeler at (951) 353-7134.

Who Says?

_UCR staff and faculty weigh in on the issues of the day via media outlets at home and abroad_

“We’re still trying to gear up for it. It’s coming.”

_Kenneth Han, chief physician at the UCR Campus Health Center, on the recent flu outbreak, which has spread at an alarming rate and has left several dead across the country_

_USA TODAY_

“A pat on the back, a squeeze of the hand, a hug, an arm around the shoulder — the science of touch suggests that it can save a so-so marriage. Introducing more (nonsexual) touching and affection on a daily basis will go a long way in rekindling the warmth and tenderness.”

_Sonja Lyubomirsky, professor of psychology, on ways to improve marriages and keep love alive_

_THE NEW YORK TIMES_

“What we’re hoping to do is go to Arizona and find those insects that are specialized to only feed on the goldspotted oak borer and are efficient at controlling the population.”

_Vanessa Lopez, entomologist, on the goldspotted oak borer, a beetle that has killed more than 20,000 oak trees in San Diego County and continues to spread throughout California_

_ABC NEWS_

“The kinds of problems in China that, in different ways, Mo Yan and Liu Xiaobo bring to our attention — suppression of speech to protect state power, harassment and prison for ‘offenders’ — can also be found in democratic societies. But to stand on that discovery and say, ‘Look, the whole world is the same, so let’s calm down,’ is not only intellectually feeble; when uttered by people who live at comfortable distances from true suffering, it is also morally indefensible.”

_Perry Link, distinguished professor of comparative literature, on Mo Yan, recipient of the 2012 Nobel Prize for Literature, and how criticism of Mo Yan’s work is warranted and necessary_

_NEW YORK REVIEW OF BOOKS_

“The idea is that a lot of procrastinators are perfectionists. No, they’re not perfectionists in the sense that they do things perfectly. I mean, I’ve never done anything perfectly. But when I get a new task, I often fantasize about doing it perfectly. You set the bar so high in this first rush of enthusiasm, and then you look at the bar and say, ‘I’m not going to try to jump over that.’”

_John Perry, distinguished professor of philosophy, on his book, “The Art of Procrastination,” and how procrastinators procrastinate_

_NPR_
“I am excited to return to the campus both to teach and to lead CSSD. The center will support, and connect, the best of academic research with important policy choices for a sustainable future for this region and Southern California.”

**Ron Loveridge**, associate professor of political science and former mayor of Riverside, on the Center for Sustainable Suburban Development (CSSD) and his goals as newly appointed director

**HIGHLAND COMMUNITY NEWS**

“Putting together a list of the jobs I’ve had either before or after becoming a professor, I find radio DJ, newsreader, sports reporter, popular-culture commentator, speech writer, cleaner, merchant banker, security guard, storeman-packer, ditch digger. ... Some of these positions were very fleeting; some were longer-lasting. Perhaps as old-school industrial models are replaced by precarious employment, my experience will become more typical.”

**Toby Miller**, professor of media and cultural studies, on his atypical trajectory through academia and how it shaped his views of the scholarly world

**TIMES HIGHER EDUCATION**

“This year is a transition year. So in 2014, the insurance exchanges are going to come into place and it will be a whole different ball game, but at the moment, some of the provisions of the health care reform law have gone into place, but not all.”

**Mindy Marks**, associate professor of economics, on how insurance companies are seeking significant premium hikes and how people’s ability to afford medical coverage will suffer until the Affordable Care Act (ACA) takes effect in 2014

**EVERYDAY HEALTH**

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**Research and Scholarship**

*Jan. 10 to 23, 2013*

**Grad Students Present on the History of the U.S. Base at Guantánamo Bay**

Three graduate students in public history — Karen Raines, Jennifer Thornton and Jennifer Weed — presented at an international conference in New York about the history of the U.S. base at Guantánamo Bay, Cuba. The mid-December conference — Global Memory, Local Ethics, Justice: The Politics of Historical Dialogue in Contemporary Society — was organized by Columbia University’s Alliance for Dialogue and Accountability.

The UCR team represented one of 10 universities invited to participate. Their multimedia presentation examined how the base has been used since Sept. 11, 2001.

The conference coincided with the opening of the Guantánamo Public Memory Project’s (GPMP) National Dialogue and Traveling Exhibit, “Why Remember Guantánamo?” Organized by the International Coalition of Sites of Conscience and Columbia University’s Institute for the Study of Human Rights, the GPMP works to
build public awareness of the long and contentious history of the U.S. naval base at Guantánamo Bay through a traveling exhibit, Web platforms and an international symposium, said Molly McGarry, associate professor of history.

The UCR students took part in this collaboration as part of a museum studies practicum, which began with a course Catherine Gudis, associate professor of history, taught in the spring and culminated in the exhibit through a class that McGarry taught last fall. The Public History Program was invited as a founding partner of the consortium by Liz Sevcenko, director of the project at the Columbia Center for Human Rights, McGarry said.

UCR is the only West Coast public history program in the GPMP university consortium, which includes Brown, NYU, Rutgers and Minnesota. This consortium collectively curated the exhibition that opened in New York on Dec. 13, 2012.

The GPMP traveling show will be part of an exhibition curated by McGarry and Gudis at UCR/CMP — “Geographies of Detention: From Guantánamo to the Golden Gulag” — which will open June 1. McGarry said the exhibition will use contemporary art, media, installations, and public programming to ask: How might debating the unique history of Guantánamo shed light on the ubiquity of mass incarceration in our own prison nation?

**UCR Venue for the West Coast LHC Theory Meeting**

UCR was the venue for the “West Coast LHC Theory Meeting” on Dec. 7. The Large Hadron Collider (LHC) is a powerful particle accelerator at the European Particle Physics Laboratory (CERN) near Geneva, Switzerland.

The meeting attracted researchers in the area of high-energy theoretical physics, but mainly those on the West Coast. Several UCR faculty members, postdoctoral scientists and graduate students are involved in the LHC’s Compact Muon Solenoid experiment, a large particle-capturing detector.

The one-day meeting, held only once before at UCR in 2009, served as an excellent opportunity for attendees to learn about the latest research their peers in the field are doing, and to initiate collaborations. It also allowed UCR physicists to meet students interested in postdoctoral positions on campus.

Physicist Howard Haber from UC Santa Cruz gave the keynote speech. UCR’s Jose Wudka and Ernest Ma, both professors of physics and astronomy, organized the meeting. The meeting, which took place in Winston Chung Hall, ended with dinner at the nearby Alumni and Visitors Center.
Is Athleticism Linked to Brain Size?

Is athleticism linked to brain size? To find out, researchers at UCR performed laboratory experiments on house mice and found that mice that have been bred for dozens of generations to be more exercise-loving have larger midbrains than those that have not been selectively bred this way.

Theodore Garland’s lab measured the brain mass of these uniquely athletic house mice, bred for high voluntary wheel-running, and analyzed their high-resolution brain images. The researchers found that the volume of the midbrain — a small region of the brain that relays information for the visual, auditory, and motor systems — in the bred-for-athleticism mice was nearly 13 percent larger than the midbrain volume in the control or “regular” mice.

“To our knowledge, this is the first example in which selection for a particular mammalian behavior — high voluntary wheel running in house mice in our set of experiments — has been shown to result in a change in size of a specific brain region,” said Garland, a professor of biology and the principal investigator of the research project.

Study results appeared online Jan. 16 in The Journal of Experimental Biology.

Marine Snail Teeth To Create More Efficient Nanoscale Materials

An assistant professor at the Bourns College of Engineering is using the teeth of a marine snail found off the coast of California to create less costly and more efficient nanoscale materials to improve solar cells and lithium-ion batteries.

The most recent findings by David Kisailus, an assistant professor of chemical and environmental engineering, details how the teeth of chiton grow. The paper was published on Jan. 16 in the journal Advanced Functional Materials. It was co-authored by several of his current and former students and scientists at Harvard University in Cambridge, Mass., Chapman University in Orange, and Brookhaven National Laboratory in Upton, NY.

The paper is focused on the gumboot chiton, the largest type of chiton, which can be up to a foot long. They are found along the shores of the Pacific Ocean from central California to Alaska. They have a leathery upper skin, which is usually reddish-brown and occasionally orange, leading some to give it the nickname “wandering meatloaf.”

Over time, chitons have evolved to eat algae growing on and within rocks using a specialized rasping organ called a radula, a conveyor belt-like structure in the mouth that contains 70 to 80 parallel rows of teeth. During the feeding process, the first few rows of the teeth are used to grind rock to get to the algae. They become worn, but new teeth are continuously produced and enter the “wear zone” at the same rate as teeth are shed.

Kisailus, who uses nature as inspiration to design next-generation engineering products and materials, started studying chitons five years ago because he was interested in abrasion and impact-resistant materials. He has previously determined that the chiton teeth contain the hardest biomineral known on Earth, magnetite, which is the key mineral that not only makes the tooth hard, but also magnetic.
Awards and Honors

Jan. 23 2012

Reznick Receives Two Grants

David Reznick, a professor of biology, has received two grants to continue his experiments on guppies (small freshwater fish). The first grant is a three-year grant of nearly $1 million from the National Science Foundation (NSF) and the second is a seven-month grant of $21,600 from the National Geographic Society (NGS). The research the grants support will take place in Trinidad, where Reznick’s group has conducted most of its guppy studies.

The NSF project is a continuation of a large multi-investigator project that was funded in 2006 and was the subject of a feature article in Science magazine in August 2012. Titled “Experimental evolution in natural populations of guppies,” the research project will allow Reznick and his students to detail how and why evolution does or does not happen. The goal of the project is to develop a new model for the study of the genetics of adaptation in nature.

The NGS project, titled “Experimental study of a species invasion,” is a spinoff of the NSF project, and involves guppy introductions into low-predation environments. The researchers will compare natural low-predation sites with the introduction sites to highlight how the early phases of the invasion differ from what it is like as the invader becomes well established (the guppies eventually adapt to the low-predation environments). Thus, the research will enable Reznick’s group to characterize a critical phase of a species invasion and document the invasion’s impact on the local environment.

Entomology Students Win Awards

Four graduate students in the Department of Entomology have won awards at the annual meeting of the Entomological Society of America held recently in Knoxville, Tenn.

John Hash, whose advisor is John Heraty, a professor of entomology, won the Student Competition for the Presidents Prize with a first-place poster presentation. His poster focused on using morphological characters to help understand the phylogenetic relationships among species of the millipede-parasitoid genus Myriophora.

Jason Mottern, also a student of Heraty, won first place in the International Society of Hymenopterists Student Symposium. His talk focused on the phylogenetic relationships within a group of parasitic wasps. Specifically, he discussed the morphology and species-level relationships within one genus, Coccobius.

Elizabeth Murray was the runner up for the President’s Prize. She analyzed host use and geographical distribution in relation to the patterns of Eucharitidae molecular diversification, based on a time-calibrated phylogeny of relationships. Heraty is also her advisor.

Adena Why, a student working in William Walton’s lab, won the Runner-up 10 minute Paper President’s Prize in the Medical, Veterinary and Urban Entomology Section 1. Her talk focused on evaluating a fish species native to Southern California, the Arroyo chub, as an alternative biological control agent of larval mosquitoes in a treatment wetland system. She found that the feeding habits of the fish do not appear to cause shifts in the food-web structure of the wetland.

UCR Alumnus Named FAA Chief
UCR alumnus Michael P. Huerta has been confirmed by the U.S. Senate to serve as chief of the Federal Aviation Administration for a five-year term. Nominated by President Obama in March 2012, the Senate confirmed his appointment as the FAA administrator on Jan. 1. He was sworn in on Jan. 9.

Snapshots Around Campus

Manuel Olmedo (left), a graduate student working with Gail Hanson (center), a distinguished professor of physics and astronomy, recently met actor Sally Field (right) at CERN in Geneva, Switzerland. Fields’ brother is a theoretical physicist.

Dante Grossa of Art Craft Tile in Riverside carefully places new tan colored tiles around the edge of the Bell Tower plaza, providing pedestrians with a visual edge around the steps. The entire bottom level of tile was replaced over a six-day period in December to address damage and increase the visibility of the steps.