# UCR

THE MAGAZINE OF UC RIVERSIDE

FALL 2006 VOL. 1 NO. 1


## Reinventing Invention

## Teaming up Against Cancer

## Mining the Seas for Medicine

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# REINVENT

FEATURES





DEPARTMENTS





# Music, Dance, Theater and More

For more on UCR events, look on the Web at www.events.ucr.edu.

11.29

**Noche Flamenca**

Known for its passion and dedication to the integrity of the flamenco, the dance company Noche Flamenca will perform in the University Theatre.

culturalevents.ucr.edu

12.09

**Holiday Choral Music**

The UCR choruses and the UCR Brass ensemble, conducted by G. Edward Bruner and Ruth Charloff, come together to perform Pinkham's *Christmas Cantata*.

music.ucr.edu

01.17

**Author Series**

Assistant professor Margaret Nash, recipient of the 2005 Critics Choice Book Award of the American Educational Studies Association, will speak on her book "Women's Education in the United States, 1780–1840," which examines the underlying rationale for educating women.

library.ucr.edu

01.25–27, 02.01–03

**One Size Fits All**

This play by Assistant Professor of Theatre Rickerby Hinds explores the exploitation of children around the world through four children's quests to find the life embodied in a pair of sneakers.

theatre.ucr.edu

01.27–03.17

**Empire.Style**

Empire.Style, curated by Peter Zellner, features works that explore the social and economic energy of the American suburbs, and the move of cultural activity from city to suburb.

sweeney.ucr.edu

01.28–04.14

**Liset Castillo: Lakewood, Calif.**

Castillo's large-scale photographs of highways and intersections are derived from sand-castle models. This series is based on one of America's first planned communities, Lakewood, Calif.

www.cmp.ucr.edu

1.31–3.7

**The Road to Oscar**

Offered through the Osher Lifelong Learning Institute, which is open to those 50 years and older, this course looks at past and present Academy Awards as a means to better understand filmmaking and the creative process.

www.extension.ucr.edu/olli

2.14, 2.15

**100th Anniversary Celebration**

The UCR Citrus Research Center and Agricultural Experiment Station celebrates its 100th anniversary with a banquet on Feb. 14 and a symposium on Feb. 15.

www.cnas.ucr.edu

03.08–10

**UCR is Dancing 2007**

This annual production is the culmination of five quarters of instruction and features original choreography by UCR students that demonstrates new ideas and experimentation in dance.

dance.ucr.edu





# Reinvention at its Best

Welcome to *UCR* magazine (previously called *Fiat Lux* magazine). In keeping with the spirit of the reinvented and reinvigorated look and feel of this publication, designed to showcase the insights, innovations and impacts of our campus community, I invite you to explore with us the art and science of reinvention.

For our students, reinvention lies at the heart of the education process itself, from the opportunity to explore their individual gifts to the experience of discovering, acquiring and applying new knowledge. So, too, the life cycle of a university is a study in reinvention, as hundreds of talented, eager young social visionaries and scientific detectives pass through our halls of learning and into the world beyond. This year, the campus welcomed 4,429 new Highlanders, raising the size of our population to 16,875 students.

Thanks to the generosity of our supporters, UCR is reaping the benefits of a record-breaking $40 million fund-raising year, enabling the campus to reinvent itself in ways both intellectual and physical. This year, we were pleased to add nearly 50 outstanding scholars and researchers to the ranks of our distinguished faculty. And, as highlighted by the recent groundbreaking for a new state-of-the-art genomics research building and the anticipated openings next year of the CHASS Instruction and Research Building and the Alumni and Visitors Center, as well as the expansion of the East Campus Child Development Center to begin in 2008, the campus is rapidly evolving to meet the demands for more classrooms, labs, child care and housing space. Through the development of plans for a new medical school, and with efforts well under way to expand the reach of other professional schools, UCR has positioned itself to meet the work force challenges of 21st century Inland Southern California and beyond.

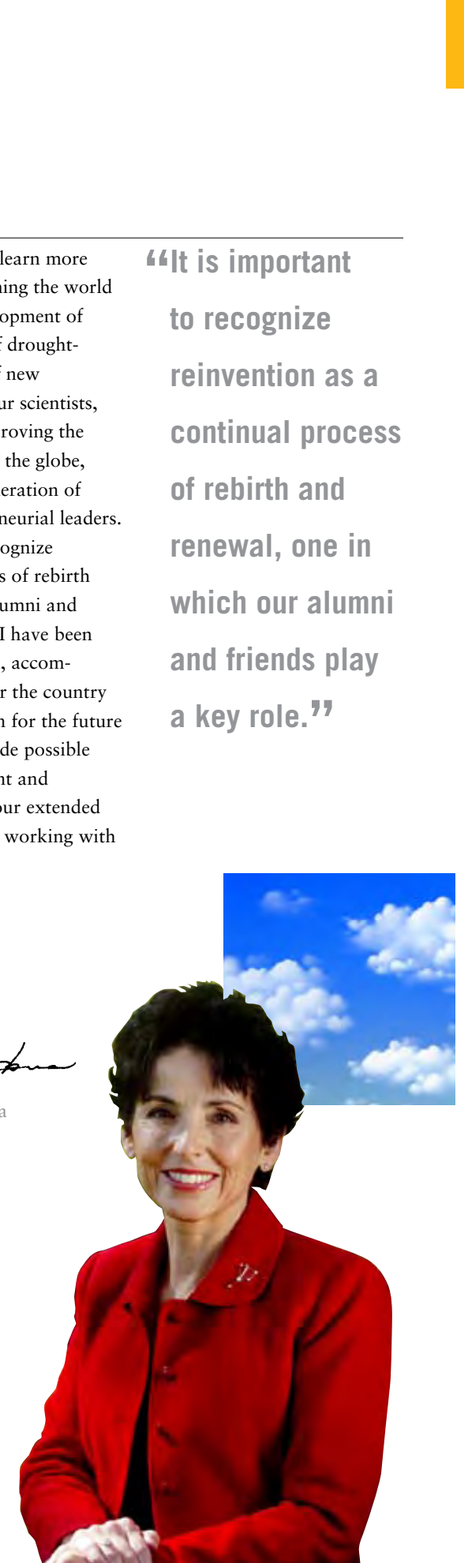
Within these pages, you will learn more about how UCR is also transforming the world in which you live. From the development of alternative fuels to the creation of drought-resistant crops to the invention of new nanotechnologies for medicine, our scientists, engineers and researchers are improving the quality of life for millions around the globe, even as they educate our next generation of innovators, ethicists and entrepreneurial leaders.

Finally, it is important to recognize reinvention as a continual process of rebirth and renewal, one in which our alumni and friends play a key role. This fall, I have been privileged to meet with dedicated, accomplished UCR alumni from all over the country and to share with them our vision for the future of UCR. It is a shared dream, made possible only by the continued involvement and contributions of all members of our extended campus family. I look forward to working with you to make it a reality.

"It is important to recognize reinvention as a continual process of rebirth and renewal, one in which our alumni and friends play a key role."

Sincerely,

CHANCELLOR France A. Córdova



## Ratings Boost

*Washington Monthly College Guide* has ranked UC Riverside No. 22 among universities and colleges in the United States. Unlike most college ratings guides, *Washington Monthly College Guide* doesn't use SAT scores and grade point averages to evaluate schools. Instead, its reviewers ask qualitative questions, such as "What is this college doing for the country?" "Is this college an engine of social mobility?" and "Does this school foster scientific and humanistic research?"

UCR's ranking rose more than any other school's relative to its *U.S. News & World Report* ranking.

"We've always felt that our mission — carried out through classroom instruction, scientific and humanistic research and community outreach — has been to make a significant contribution to the people of California," says UCR Chancellor **France Córdova**. "It's gratifying to see that effort recognized nationally."


## Beijing Center Offers TEFL Program

UCR's International Education Programs is partnering with the Yale-China Association to offer the first-ever Yale-China Teaching English as a Foreign Language (TEFL) program at UCR-Beijing International Education Center. Seven Yale-China fellows have begun TEFL training at the center.

International Education Programs has offered a range of programs since opening the center in October 2005, including targeted conversation programs that will help address China's need for English speakers during the 2008 Olympics and as the country increasingly does business with the West.

## New Private Fund-Raising Record

UCR raised a record $40.1 million in private gifts and pledges in 2005–06, more than doubling the amount raised in 2004–05.

The fund-raising effort was given a substantial boost in June, when **Bart** and **Barbara Singletary** and **William** and **Toby Austin** together contributed $16.5 million in two charitable trusts for the support of endowed professorships in the social sciences, the law, public policy, agriculture and medicine.

Other recent gifts to UCR include:

- a $1.6 million grant from the Howard Hughes Medical Institute for biomedical student preparation;
- a $1.5 million grant from the W.M. Keck Foundation for environmental research;
- a $1.5 million gift for an endowed chair for teaching innovation;
- a $1 million gift for an endowed chair in cancer research;
- a $1 million gift from the Gluck Foundation for arts outreach;
- a $1 million grant from the Bernard Osher Foundation for a learning program for seniors;
- a $1 million pledge from Ron and Margaret Redmond to finish the Alumni and Visitors Center;
- a $500,000 gift from the estate of Rosalie Ketchersid for scholarships;
- a record $450,000 total for the UCR Fund, an annual telephone campaign to alumni;
- a $240,000 gift from California Wellness to support the FastStart program for students interested in health care careers serving the underserved.

"That we've accomplished so much so quickly speaks volumes about the generosity of UCR's supporters," says Associate Vice Chancellor for Development **Susan Harlow**.


## New UC Regent is from Inland Empire

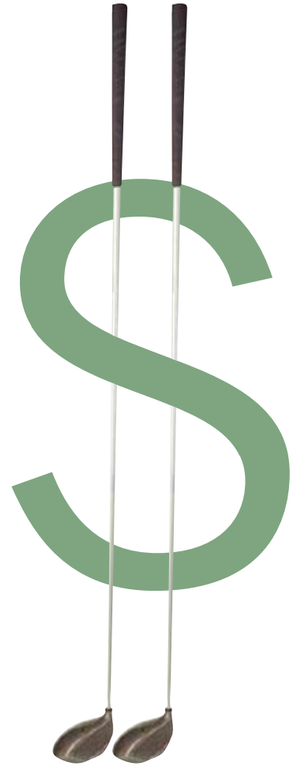
After more than four years without representation on the UC Board of Regents, the Inland Empire once again has an ambassador on the board. **Bruce Varner**, a partner in the Riverside law firm of Varner & Brandt LLP, was appointed by Gov. Arnold Schwarzenegger in August. His term began with the regents' Sept. 19 meeting in San Francisco.

The 69-year-old attorney joins 25 other board members who make policy for the UC system. In addition to the governor, other public and university officials and one student, Varner joins 17 other public members appointed to 12-year terms. Regents receive no salary for their service.

## New Golf Scholarship

**Donald** and **Anne Skotty** have established the William G. Skotty Endowed Golf Fund to support golf scholarships for UCR students. The Skotty Fund will provide a four-year scholarship for one member of UCR's men's or women's golf team, with the scholarships alternating every four years between the two teams.

Donald Skotty's uncle William was a World War II veteran whose passion for golf was kindled with weekly miniature golf outings in Los Angeles. He was married to former UCR employee **Patricia Skotty**, an active member of the UCR Retirees' Association. William Scotty passed away in January.



## Professors Help Clear the Air in India

**Akula Venkatram** and **Marko Princevac**, UCR mechanical engineering professors, recently traveled to India as part of a U.S. Environmental Protection Agency (EPA) effort to aid in development of an urban air-quality management system. Along with three EPA scientists, Venkatram and Princevac demonstrated the use of an EPA-developed air-quality modeling system for their Indian colleagues. Venkatram played a key role in developing the system, called AERMOD, while Princevac provided training on the system's instruments.

India's rapid economic and industrial development has spawned pollution problems that are among the world's worst and are thought to contribute to 3 million premature deaths and increasingly severe monsoons.

"We hope this pilot program will attract the attention of the World Bank, which could step in and offer ongoing support to the Indian government," says Venkatram.

## New Leader for CHASS

Stephen E. Cullenberg, an economics professor at UCR since 1988, has been appointed dean of the College of Humanities, Arts and Social Sciences (CHASS).

Cullenberg replaces Joel Martin, a historian who served as interim dean for two years (before he was hired recently as dean at the University of Massachusetts, Amherst).

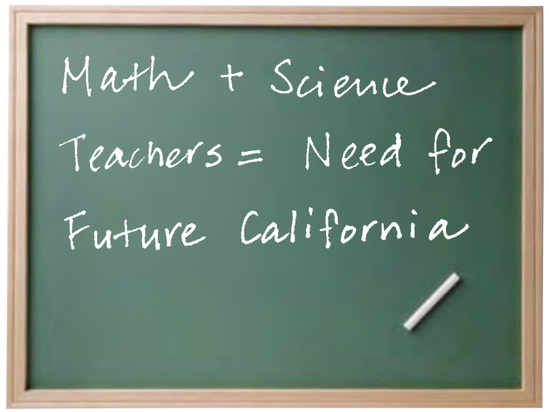
# Training Tomorrow's Teachers in California

A 2005 UC report found that nearly one-third of California's K-12 teachers expect to retire by 2015, a high proportion of them math and science instructors. That's why eight UC system campuses, including UCR, created a program called the California Teach Science-Mathematics Initiative. The initiative partners the UC campuses with the California State University system in recruiting student participants into a four-year program, then tracking their progress — through an intern teaching credential to full credentialing after graduation.

At UCR's SMI Resource Center and its counterparts at the other UC campuses, students identify career paths in teaching, cultivate strong professional connections and mentors, and design advising paths.

The program also provides stipends for education coursework and fieldwork in elementary and secondary school classrooms. Students learn firsthand how education theory and subject knowledge can best be applied in the classroom.

Initiative organizers hope to attract as many as 5,000 UC and community college students into the program with 1,000 internships in California secondary schools.




# Med School Funding Gets a Booster Shot

UnitedHealth Group has donated $5 million to UCR for the creation of medical education and related health sciences programs — giving a significant boost to UCR's campaign for a school of medicine.

The contribution is a response to an April 2005 UC study that called for creation of new comprehensive medical education programs by 2020 in medically underserved regions, such as Inland Southern California.

"This generous gift has created a strong foundation for our health sciences initiative and provided momentum for our campus to attract other gifts from foundations, corporations and individuals," says Chancellor **France Córdova**.

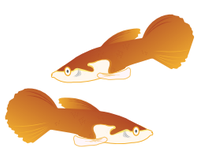
UCR will use the funds to hire faculty and staff to establish coursework associated with the campus's health sciences program, upgrade research and educational facilities, and expand planning for the health sciences initiative that the university launched last year.

## Focus of Research on Evolution/ Ecology Interaction

UCR Evolutionary biologist **David Reznick** is leading a team of researchers that received a five-year, $5 million National Science Foundation grant to find the answer.

Joined in the effort by colleagues from U.S. and Canadian universities, Reznick will study the evolution/ecology interactions in natural stream communities on the island of Trinidad.

The team will focus on guppies — small fresh-water fish — that coexist in the stream with the Hart's killifish, a predator. The team will examine what causes the guppies to evolve as they might and also the coevolution of the killifish.

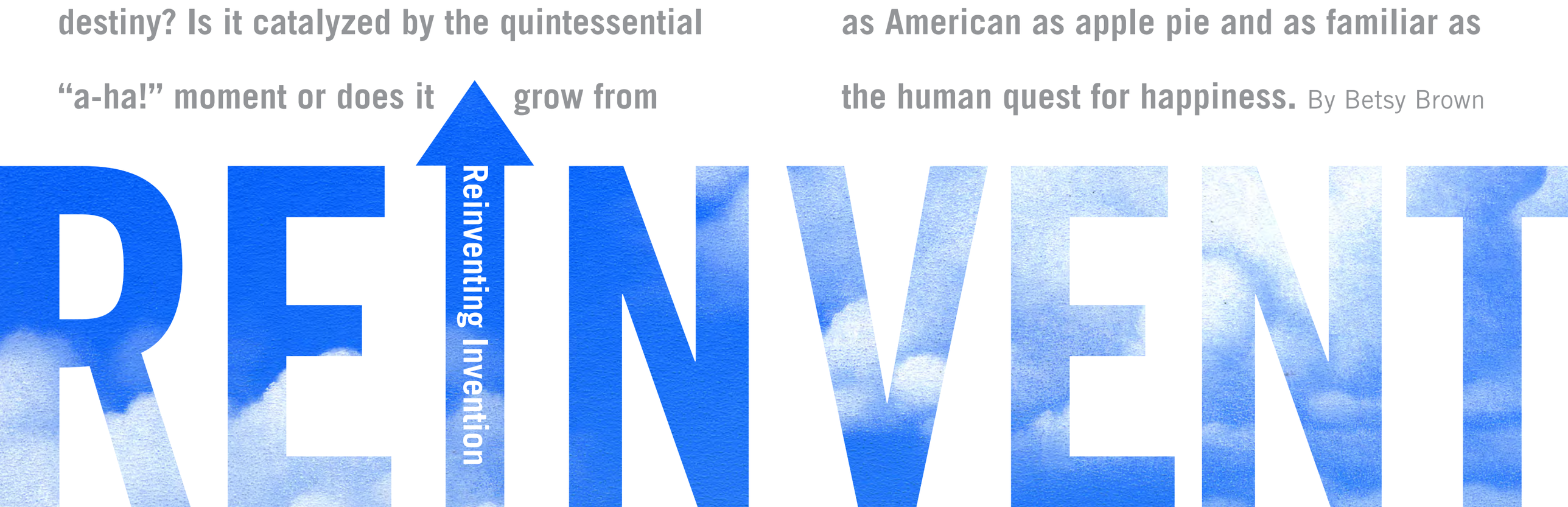


# Conscientiousness a Better Predictor than SATs Alone

In a recent paper, **Seth Wagerman**, a UCR doctoral candidate in psychology, and psychology department Chair **David Funder** found that success in college corresponds more closely to a student's work ethic and self-discipline than to intelligence or test-taking ability.

In the study, acquaintances and trained clinicians described students' personal qualities and compared them with the student's grades and SAT scores. "Being described by others as conscientious and hard-working predicted college grades years down the line," Wagerman says. "Highly motivated and organized students who are determined to succeed are likely to do well, regardless of their SAT scores." The findings strengthen an argument that SAT college entrance exams should carry less weight in college admissions.

“Discover and innovate” is the mantra of the modern American research university. But what does it mean to discover in an era when our final frontiers are not defined by mere geography? And whence comes the drive to innovate? Is it in our DNA or simply our cultural destiny? Is it catalyzed by the quintessential “a-ha!” moment or does it grow from the darkest nights of the soul? Is it a serendipitous event or, quite simply, essential to human survival? In this issue of UCR we asked three UCR innovators to weigh in on the concept of reinvention. Their musings reveal that reinvention is older than Darwin, as American as apple pie and as familiar as the human quest for happiness. By Betsy Brown



### California Dreamer

Toby Miller has been a Californian for only two years, but he's been a California dreamer all his life. "Growing up in Australia, I harbored a California fantasy based on perceptions of the state's natural beauty, the lure of Hollywood, the impact of the American military," says Miller, professor of English, sociology and women's studies in UCR's College of Humanities, Arts and Social Sciences.

A big-idea generator with a ready and well-articulated opinion on all things sociocultural — media, sports, labor, gender, race, citizenship, politics, economics — Miller understands the importance of reinvention to the American mindset in general and California in particular.

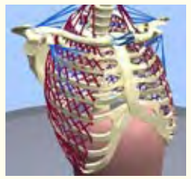
"Reinvention is the founding mythology of American culture," he says. "This is a nation based on the idea that you can come here from anywhere in the world, transcend class, race, gender and financial circumstances and reinvent yourself." This concept comes to life in California — a Western American "quest destination" for people from around the world — and in the Inland Empire, fastest-growing region in the country.

Although Miller's notion is perhaps most familiarly illustrated in the works of Horatio Alger Jr., in which the hard-knocks American hero lifts himself up by the bootstraps into better circumstances, Miller sees manifestations beyond the individual entrepreneur. "The forces of reinvention have less to do with individual initiative than with deeper cultural and socioeconomic forces — and with how societies interact with each other on the world stage," he says.

As an example, Miller cites the reinvention of the American work force over the past 100-plus years, as regions of the country — in the grips of first the industrial, then the technological revolution — evolved from an agrarian to an industrial to a service-industry base. "As first-world countries like the United States have evolved toward service-based economies, increasingly, they've outsourced other functions, such as manufacturing, to countries that can perform them more competitively." Witness California: an agrarian paradise in the early 20th century, reinvented as industrial-military Mecca in World War II, evolved during and since the Cold War into a tourist haven, a high-tech incubator and a Hollywood dream factory, perpetuating the myth of America as reinvention capital of the world.

Even more interesting, Miller points out, California's self-reinvention as a high-tech haven illustrates the dangers that befall a society when it allows itself to take innovation for granted as the exclusive domain of the individual entrepreneur. "Continued innovation requires a combi-

**"Reinvention is the founding mythology of American culture. This is a nation based on the idea that you can come here from anywhere in the world … and reinvent yourself."**
**— Toby Miller**



### Breathing New Life into Animation

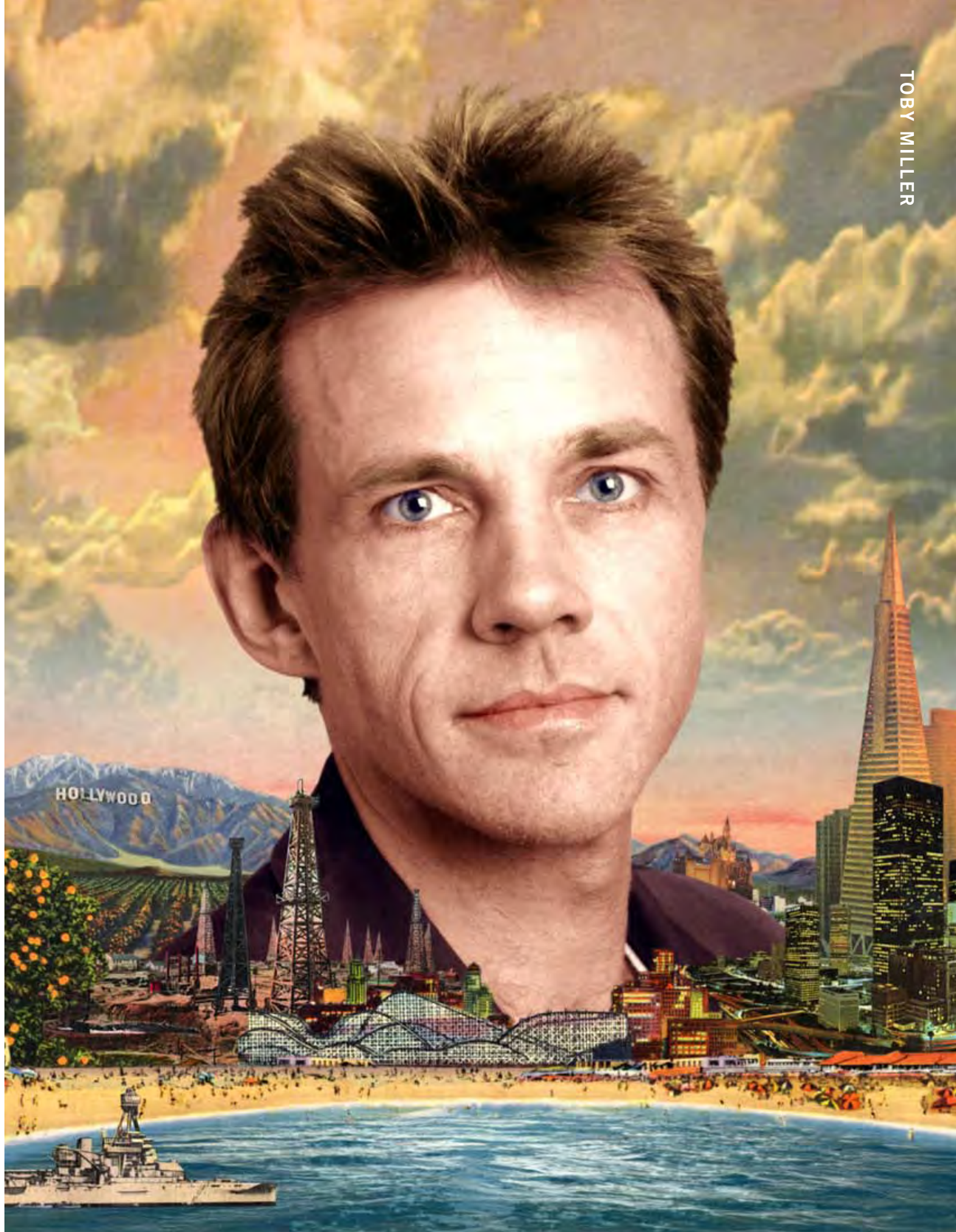
The characters in computer games and animated films may wow us with their verisimilitude. But look closely: Are those characters really breathing?

There's a reason the answer to that question is usually no. Breathing, from an animator's perspective, is hard to capture. "Breath combines the rigid movement of bones with the deformable movement of muscles and other tissues, which is irregular and complex," says Victor Zordan, an assistant professor in the Department of Computer Science and Engineering at UCR. "Animators often overlook breathing because the subtlety required to animate it isn't worth the overhead."

Zordan, who founded the Riverside Graphics Lab, was determined to change all that. Studying anatomy, physiology and film of human motion — using physics, computation and pure intuition — he and his research students developed a believable, three-dimensional motion model of human breathing. And they did it by reinventing the familiar. "We applied simple, well-known animation techniques — the kind used to show movement in cloth in games and movies — in a novel way to model a hybrid rigid/deformable torso capable of respiration."

But repurposing tried-and-true techniques wasn't the only innovation to grow from Zordan's work. Trolling the Internet, Steve McCall, a medical educator from Blue Cross/Blue Shield in Hawaii, came across Zordan's Web site and found what he'd been looking for: video demonstrations of computer-animated humans breathing. Collaborating with McCall, Zordan developed a software program called Breathe Easy. McCall now uses the program in his stress-reduction classes to demonstrate deep-breathing techniques developed by a Harvard cardiologist in the 1970s.

When it comes to what animation can bring to healthcare education, Breathe Easy is just the beginning. "I see many applications in the modeling of other complex physiological processes, such as swallowing and digestion," says Zordan. View Zordan's work at www.cs.ucr.edu/%7Evbz.




nation of public and private investment," says Miller. "Looking at the high-tech sector, we've had investment by businesses and the military — a big driver in the initial development of the Internet. But public investment has lagged." As a result, Miller says, the United States has now fallen behind in the proliferation of and access to technological innovation, "as we have with access to health care. To make the most of innovation, we need to connect public and private sectors."

What happens to a society that fails to make the connection? "It loses its equity in the innovation," Miller says. "Ordinary people can't access it." Case in point: although information technology has proliferated in the past 25 years, access to it has not kept pace, resulting in a society increasingly stratified into tech-haves and tech-have-nots. "The Internet isn't funded the way radio and TV were in their early days. High cable and telephone bills now restrict access to high-tech services and disenfranchise large segments of the population," Miller says.

Then there's the aftermath of innovation and reinvention: what happens when today's technology breakthroughs give way to tomorrow's whiz-bang gizmos? The consequences are daunting, Miller points out — enough to make reinvention of what we do with techno-waste a must for our survival. "Technology is supposedly a clean economy, but its pollution is a threat we don't understand," he says, citing the growing number of high-tech dumping grounds across the Western United States, where young people who probably can't afford the technology they're dismantling do the tech industry's dirty work.

Solutions to this and other post-innovation dilemmas — from air and water pollution to traffic congestion — must emerge from modern American research universities like UCR. "I see UCR as a boutique: flexible, nimble, open, providing ideas and people, inspiring investment and partnership in the region," he says. "Universities need to show that they are about more than just teaching classes — that they contribute to the local culture and economy, that they undertake research, that they are engines of reinvention."

At risk, Miller points out, is more than any one person's opportunity to levitate into the lap of high-tech luxury. "Although the Horatio Alger mythology lives on in our collective imaginations, it does not reflect life in American society anymore," he says. "There are other places where it's much easier to lift yourself out of poverty and reinvent your future — Britain, Spain, Italy." The solution, Miller believes, lies in the reallocation of resources, whether wealth, technology or simple opportunity, for the public good — an act of reinvention perhaps not unlike the quest for a more universally accessible good life that first inspired immigration to the Golden State. "As Californians, we must reinvent ourselves as a multicultural society and restore the greatness that is California's public sector."

### It's Only Natural

Talk to most scientists about reinvention manifested in the natural world and you won't hear many mentions of supermodels or the architectural marvels of medieval cathedrals. For such interdisciplinary interconnections, seek the counsel of Norm Ellstrand, a geneticist and professor of genetics at UCR and director of the university's Biotechnology Impacts Center.

"Reinvention goes on all the time in nature," Ellstrand says. "It's never perfect, and it's never finished. No sooner does an organism adapt to its environment than the environment changes again — sometimes in response to the organism itself. We're always catching up."

Although humans often perceive reinvention as an act of will — for instance, we choose to make something better — in reality, reinvention is a natural force as often accidental as it is purposeful. "Many of the features that provide creatures and plants with an evolutionary advantage were 'designed' for a different purpose," Ellstrand says.

**"Reinvention goes on all the time in nature … It's never perfect, and it's never finished. No sooner does an organism adapt to its environment than the environment changes again … We're always catching up." — Norm Ellstrand**

As an example, he offers up the evolution of insect wings: research reveals that they actually began as tiny bumps on the insect's back. Insects with these tiny bumps found themselves with an evolutionary edge — the additional surface area they provide helped with thermoregulation, enabling bump-endowed bugs to warm and cool their bodies more effectively. If little bumps provided a slight edge, larger bumps provided an even bigger advantage until, over generations and generations, the bumps elongated until they became long appendages that enabled the insect to glide. Voila: flight.

Sometimes the same principle of accidental enhancement finds expression in the realm of human endeavor. Steven Gould and Richard Lewontin noted the spandrels in medieval San Marco Cathedral in Venice. "These gorgeous architectural features were really just weird corner bits in the places where two arches meet," Ellstrand says. "There was no great plan to invent these cool spaces, just clever use of architectural leftovers." The evolutionary metaphor, Ellstrand says, is that sometimes key adaptive features are just an evolutionary exploitation of junk.

Perhaps an even more intriguing example of reinvention is the redefinition

of evolution itself to recognize the impact of "non-Darwinian" forces. "Darwin mentions genetic variation through mutation, but his emphasis was on natural selection," Ellstrand points out. "He didn't take into account chance events like migration and genetic drift, which have gained credence over the past 50 years."

Mutation through genetic drift and another reinventive concept, genetic engineering, are Ellstrand's areas of expertise. When the genes of herbicide-resistant creeping bent grass — a golf course innovation — and of a yet-to-be-commercialized genetically engineered rice began showing up in natural grass populations and cultivated rice fields, respectively, Ellstrand found his perspective in demand by media sources seeking an opinion on the perils of genetic engineering.

"Every year, something new ends up where it's not supposed to be, and the impacts are often blown out of proportion. None have been terrible examples, but they definitely show that we aren't good at keeping human-designed plant genes down on the farm," he says. "The truth is, we're in the infancy of this field and, looking forward, there are exciting possibilities." The first plants developed through genetic engineering are only a little more than 10 years old, he points out. To assess their eventual impact now would be like assessing the impact of the automobile, 10 years after its introduction. "It's just too soon. And we're fortunate to be moving slowly, taking baby steps."

Hybridization — which happens when natural plant genes intermate with genetically engineered crops peers is another hot topic. Although hybridization is a concern — producing "superweeds" or even "supergerms" — not all hybrids will become weeds, Ellstrand points out.

"Fifty years ago, scientists considered hybridization rare and unimportant. Today we understand that evolution is more fluid," Ellstrand says. The take-home message, he adds, is that scientists should be humble. "The knowledge we were certain of 50 years ago, over time, has been revealed as imperfect — just as today's knowledge will be 50 years from now."

Thank goodness for the natural forces of reinvention — the constant striving for illusory perfection, toward which Ellstrand takes a Zen approach. "Perfection is in the eye of the beholder, and it is much more than we can see with our scientific eye at any given time," he muses. "We're not all perfect specimens — Robert Redfords and Heidi Klums. And it's a good thing, because a world inhabited by only perfect specimens would be a boring place."

### Go Ahead and Laugh

What's the simplest act of reinvention — one any of us can commit, any time, any day, any place? To Sonja Lyubomirsky, professor of psychology at UCR, it's probably smiling. Or maybe laughing. Perhaps a small act of altruism.

Lyubomirsky's research involves understanding how people can reinvent themselves as happier — not just for a minute, but forever. Although it may sound simple, her research is revolutionary. "Science is pessimistic about the idea that people can become happier in a permanent way," she says. "The pervasive idea is that

## From Garbage to Gasoline

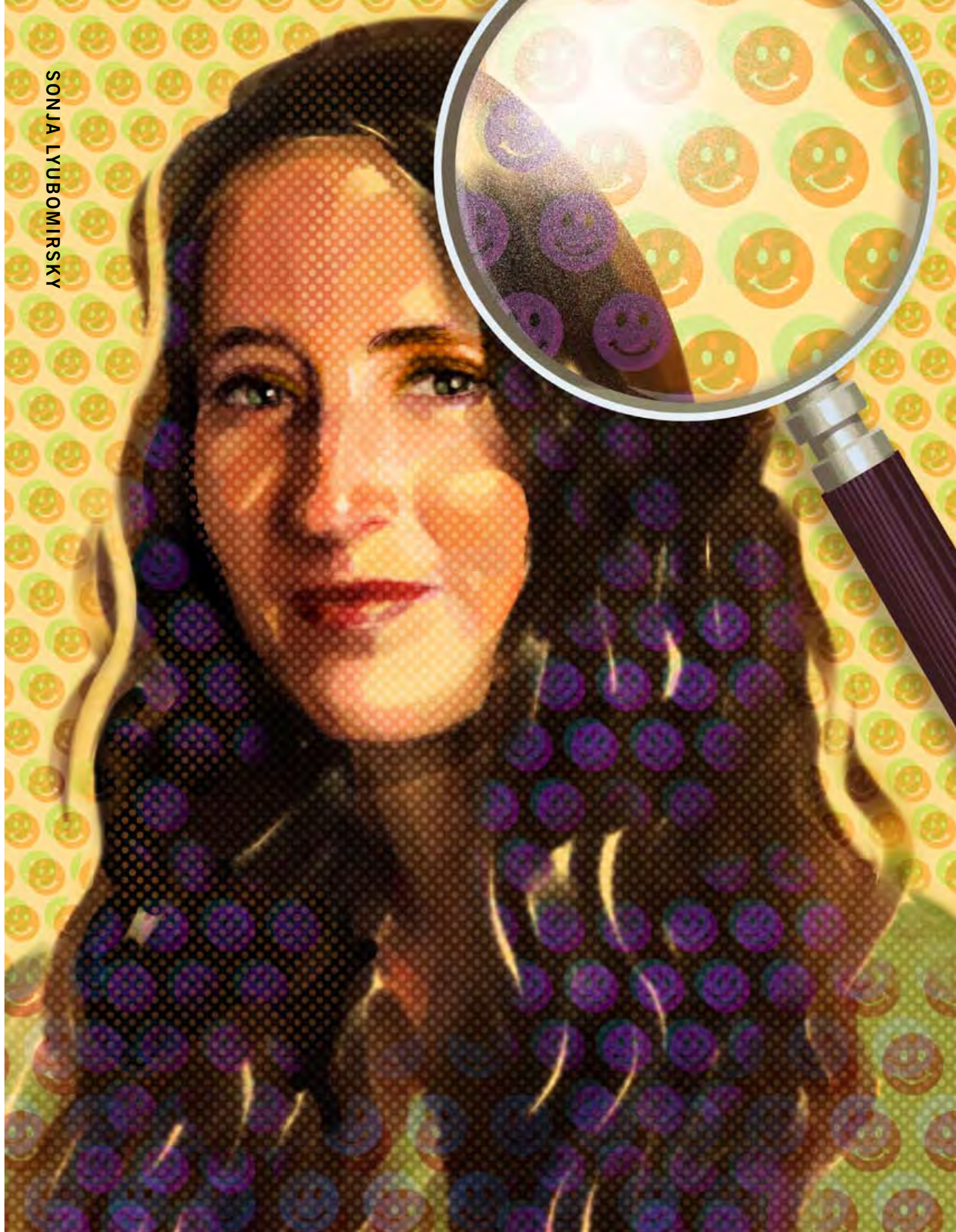
What happens when invention goes awry and produces a "lemon"? If you're professor Joe Norbeck of UCR's College of Engineering, you make lemonade — enough to power a diesel fleet.

In 1997, pressed by the threat of climate change and America's thirst for energy, Norbeck and a team of scientists and students built a reactor capable of producing methanol, a promising alternative fuel. Following well-laid plans, they built their prototype. But it proved fraught with problems — at first glance, a failure.

Determined to salvage their efforts, Norbeck and team decided to experiment with a different reactor process: steam pyrolysis. "That was the 'Eureka!' moment," says Norbeck. Working on a laboratory scale, the team reinvented the original reactor to harness a combination of steam, hydrogen, high pressure and high temperature, optimized for efficiency. Into this thermochemical engine went diverse "biomass" feed stocks — plastics, animal fats, human waste, anything carbon-based. Out the other side came biodiesel — a biodegradable, nontoxic fuel made from natural sources that, when burned, produces significantly fewer emissions than petroleum-based diesel (and could cost as little as 65 cents per gallon to produce).

The successful garbage-to-gas reactor has eight invention disclosures associated with it; soon there will be several patents. And now, in partnership with a Riverside energy company, Norbeck's team is building a reactor large enough to demonstrate that steam pyrolysis can work on a commercial scale. In addition to providing a renewable alternative to fossil fuels — and taking the United States closer to energy independence — the reactor offers an answer to the vexing question "what do we do with all our biosolid wastes?" Quite simply, we could turn our garbage into gasoline.

Although the team's commercial-scale prototype shows enormous promise, Norbeck isn't ready to rest on his laurels. "Boston Celtics coach Red Auerbach used to light up a cigar when he thought a win was a sure thing," says Norbeck. "I'm not lighting the cigar yet, but I'm optimistic there will be a commercial plant within the next five years."



we each have a set point for happiness that is genetically dictated, and that we're basically doomed to that set point."

As evidence, pessimists point out that people are good at adapting to positive change. For example, we undergo life-improving events — get married, get a better job or a better house, have a child, move to a new place. For a while, we're happier. Then we get used to it; back to the "set point."

**"The pervasive idea is that we each have a set point for happiness that is genetically dictated, and that we're basically doomed to that set point … My hypothesis is that happiness is determined by three factors: a set point, life circumstances and intentional behavior. Thus, there's room for change, through what we think and do."**
**— Sonja Lyubomirsky**

But the set point theory, Lyubomirsky contends, can't explain everything about happiness. "My hypothesis is that happiness is determined by three factors: a set point, life circumstances and intentional behavior. Thus, there's room for change, through what we think and do."

In her laboratory, Lyubomirsky has tested her theory among people who are and who are not committed to becoming happier. Her research offers interesting insights into our ability to reinvent ourselves: she's found that regular, simple actions — counting one's blessings, performing acts of kindness, keeping an optimism journal, writing letters of gratitude — actually raise our happiness level. She theorizes that happiness is a body and soul experience, enhanced through religion and spirituality, meditation and physical activity. And she argues that happiness can be sustained through the concept of "flow" — what happens to us when we're deeply engaged in what we're doing "in the zone," or "on a roll" — whether we're writing, or skiing, or talking or up to our elbows in a chemistry laboratory. "Studies suggest that by doing challenging things we can sustain 'flow' throughout our lives," Lyubomirsky says. "New activities and learning prompt positive emotions and produce a stream of positive experiences," she says, citing research out of the University of Wisconsin.

But what about the connection between happiness and innovation, contentment and reinvention? Who's more likely to create: happy people or dark, brooding types in a ruminative funk, such as the iconic suffering artist? "Although poetry, painting and art seem to tap deep, often painful emotions, studies show that creative works don't come out of a depressive time," Lyubomirsky says. "Rather, they are created after the creator comes out of a depression with deeper insights." In fact, in her research, Lyubomirsky has found that the happier, more energetic and more active that people are, the greater their creativity. Innovation, Lyubomirsky posits, grows from the same source as creativity. So does reinvention — even when it's inspired by the desire to improve something that isn't working or turn a failure into a success.

"I'm a believer in the virtuous cycle: Happy people are more creative, and creative output makes people happy, which makes them more creative," Lyubomirsky says, cordially ending the interview to return to her own creative zone, deeply engaged in her book on reinventing a happier self.

### Your Cultural DNA

So what of American innovation in the 21st century? Is it doomed to a set point, determined by our cultural DNA, or — like evolution — can it be reinvented to incorporate new knowledge? Is it a lost part of our California heritage, gone stagnant in a culture that doesn't share innovation as readily as it embraces it? And what will become of the metaphorical vestigial jawbones, the interstices between medieval arches, the detritus of high-tech discovery, the graveyards of yesterday's DVD players, mobile phones and computer monitors? How must we innovate differently in a modern world so shaped by past innovation?

From within UCR comes the voice of Norm Ellstrand, echoing messages from Miller and Lyubomirsky. "I think we must innovate with a sustainable world in mind — and we must slow down. What we need is a reinvention of the American lifestyle that integrates reflection and enjoyment with the hard work that, for generations, has enabled us to pull ourselves up by the bootstraps and make a better world for ourselves." The dark, brooding moments of the soul may feed innovation, and creativity and happiness may catalyze action. "But we are nothing without the middle zone," Ellstrand says. "That's where wisdom grows."



## Boosting the Intelligence of Classrooms

Turning students loose in a high-speed, tech-driven world after educating them in a chalkboard classroom is a little like teaching them driver's ed in a Model A before giving them a driver's test in a Ferrari. Pupils emerge from their learning experience a little … unprepared.

In 1999, to give students the best start on the information superhighway they will navigate in their careers and lives, UCR launched the Smart Classrooms Initiative. The goal: reinvent the learning environment with technology and support that can empower instructors to teach more effectively.

"Technology has to revolve around students and faculty," says Chuck Rowley, associate vice chancellor for Computing and Communications, who oversees the Smart Classrooms Initiative. "It can help actively engage students in the learning process, but it's only a tool. And it's only successful if faculty members get the support they need."

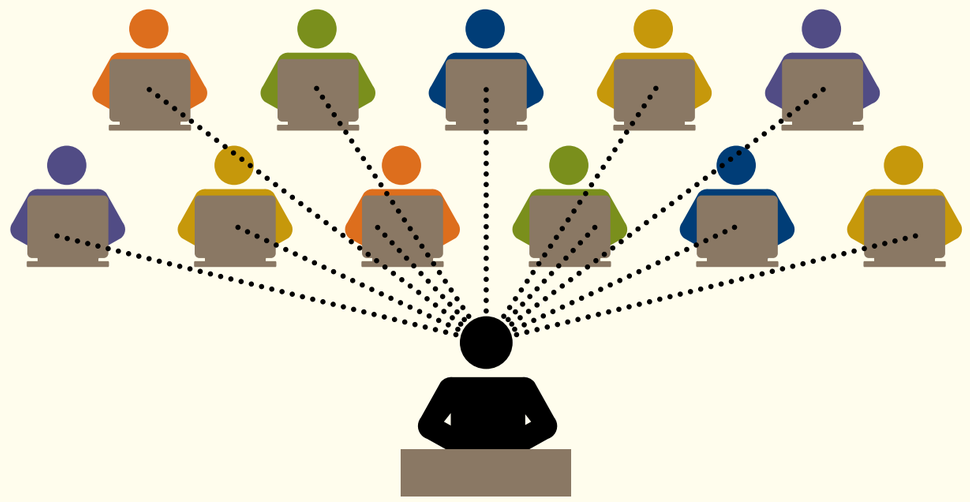
With one year to go in the eight-year improvement program, 65 general assignment classrooms now give instructors easy access to digital projectors, integrated VHS video, DVD, personal computers and the Internet. Larger lecture halls boast wireless microphone systems, computers and digital document cameras. And with standardized "single point of control" systems in place, instructors can walk into any intelligent classroom and be up to speed on its capabilities — no down time struggling to make unfamiliar technology work.

The initiative is also reinventing how professors interact with students and monitor learning. Students often use audience response receivers — "clickers" — to answer concept questions posed during lectures. For example, standing before a class of 300, an organic chemistry professor might project images of various molecules and ask students to identify the diastereomers — compounds with more than one stereocenter. Students click on one of four possible answers, providing an instant read on how many understand the concept and how many others do not.

Because technology is only effective when it's working properly — and when instructors can use it with confidence — the Smart Classroom Initiative includes education and support. Tech assistance responds to problems in moments, sparing instructors frustration and preserving valuable lecture time. A Web site, cnc.ucr.edu/classrooms, offers extensive, easy-to-understand instructions for using equipment.

So far, UCR's reinvention of the classroom has earned applause from students, instructors and administrators. Because they know that classroom "clicks" translate into points for participation, classroom attendance is up. In a fall 2004 survey, 98 percent of faculty expressed satisfaction with classroom technology. And in 2005, UCR's Smart Classrooms won the UC system's Golden Award for Innovation and Entrepreneurship in Information Technology.

As UCR rises to the challenges of increasing enrollment and accelerating technological change, classroom reinvention will continue. In the future, networked LCD panels will allow instructors to leave their laptops in their offices and still have access to images and information. They will be able to use wireless tablet PCs to add written notes and diagrams to their presentations. And videoconferencing links will bring guest lecturers from all over the world into UCR classrooms — blurring the boundary between the campus and the larger world of learning opportunities.



# Teaming Up Against Cancer

## Mihri and Cengiz Ozkan, faculty members in engineering, stay plugged into their research and their family life.

By Ricardo Duran

Raising children is no small feat. Add to that the rigors of successful careers in engineering, as well as the challenges of becoming involved in a worldwide race to find cures for cancer, and you have the makings of a hectic life.

So how do Cengiz and Mihri Ozkan manage?

As faculty members at UC Riverside's Bourns College of Engineering, in mechanical and electrical engineering, respectively, Cengiz and Mihri take a decidedly rational — one might even say scientific — approach.

"We have to keep family first," Cengiz says, to a knowing nod from wife, Mihri. "But we also have found ways to use our time most efficiently."

With the advent of e-mail, text messaging, mobile smart phones and laptops, their research — and their research teams — is usually just a few keystrokes away, even as their sons, ages 12 and 7, engage in a full-court press, practice a Dvorak piece on the piano or angle for that perfect soccer goal.

So keeping work and home life separated is not an option for the hard-charging, career-driven academics. After all, they're both working on a research project that, if successful, could reinvent the way that oncologists diagnose and treat cancers.

### Listening for Cancer Cells

The Ozkans' laboratories at the Bourns College of Engineering are collaborating to develop nanodevices — 100,000 times thinner than a human hair — that will listen for tell-tale signals from cancer cells and then deliver chemotherapy directly to the afflicted cells without harming surrounding healthy tissue.

Their projects are part of a $144 million National Cancer Institute (NCI) effort that puts UC Riverside researchers front and center in a UC San Diego-(UCSD) based consortium known as the Center for Cancer Nanotechnology Excellence. It's one of seven similar NCI-established centers at colleges and universities nationwide.

In October 2005, the NCI awarded UCSD $3.9 million to establish the Center for Nanotechnology for Treatment, Understanding and Monitoring of Cancer, or NANO-TUMOR. This is the first year in a five-year, $20 million funding cycle, and the first time UC Riverside has participated in such a study.

The technology the Ozkans are developing could lead to more forgiving treatments than conventional chemotherapy, which pumps toxic chemicals into the body, often with a broad, and sometimes violent, menu of adverse side effects.

Today's technology can detect tumors as small as one million cells or the size of a pinhead. Advances in integrating nanotechnology with biology promises to decrease that to the 100,000-cell level, according to NCI's Cancer Nanotechnology Plan.

The work is critical to finding a way to deal with cancer, second only to heart disease as the leading cause of death in the United States. The American Cancer Society estimates that 1.4 million people will be diagnosed with cancer in 2006, with 138,700 of those cases in California.

The Ozkans are understandably serious as they apply nanotechnology to such a vital issue of national health. "Imagine having the ability to find the very first cancer cells in a patient's body and kill them with targeted therapies," Cengiz said. "We have a lot of capabilities in our nano-toolbox. It's time to apply them to cancer therapy."

Both of the Ozkans have been working for five years on the "listening" technology to detect and interpret micro-electrical arrays, or the signals emitted by cells, and how those signals change when cancer cells are present. "We've developed a method to distinguish between different types of cells and how they respond to different chemicals," Mihri said. "UCSD is happy because no one there is doing this type of research."

The goal for Cengiz's group is to use knowledge about the different signals sent by healthy cells and cancer cells to target only the diseased cells. His approach is seen as a more benign alternative to the common use of dyes to find cancer cells. "The stains are often toxic themselves and affect how cells react to their environment," he says. "The use of dyes also sometimes compromises study results because you don't know if a given cell died from cancer or from a reaction to the stain."

Meanwhile, Mihri's research group will develop a combination of virus capsids and nanoparticles to bioengineer a delivery vehicle that will zero in on cancerous cells and kill them. Virus capsids are the shells of the virus and contain the mechanism they use to infect cells.

"The quantity of drugs used is therefore far smaller than with standard chemotherapies," she said.

The effort means long hours in the laboratory and in discussions with graduate students and colleagues at UCSD.

### Priorities at Home

But it's not all work for the Ozkans.

They take time to be parents. Their boys play basketball, take music lessons and attend school in Poway, near San Diego, about an hour's drive south of Riverside.

"We're very lucky," said Mihri. "Both sets of grandparents live in San Diego and help out by picking up the boys and looking after them when we're going to be late or out of town. They're a great help."

The couple has been married 16 years and met when Mihri was an undergraduate student and Cengiz a teaching assistant at the Middle East Technical University in Ankara, in their native Turkey. The two have always coordinated their professional and private lives to allow each other to advance in their careers before the other takes the next professional step.

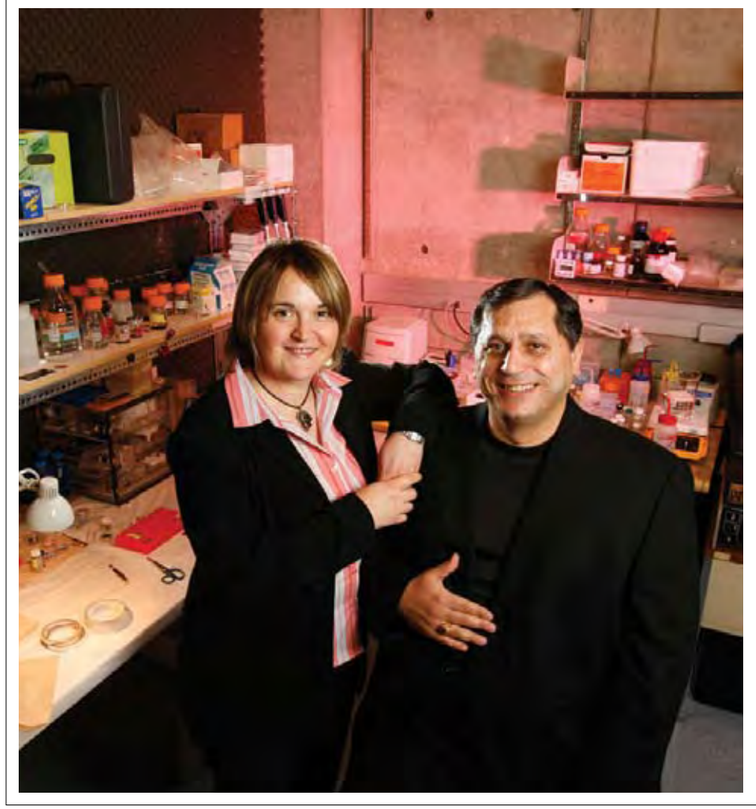
Both were accepted to graduate school at Stanford University where Mihri received a master's degree and went to work until Cengiz received his Ph.D. Mihri received her doctoral degree from UC San Diego in electrical and computer engineering.

Throughout their busy professional lives, Cengiz and Mihri have managed to keep their focus centered on family. "As researchers, we have to give a lot from our personal lives to our work. There's no time for movies and dinner parties," Mihri said. "What time we have is spent with our children. We try to be with them and do things with them as much as possible."

With laptop computers and mobile phones at hand, Mihri and Cengiz say they have become adept at juggling their professional and private lives. "I'll take my sons to basketball practice and work on my laptop, with my books, while they're having fun," she says. "I'll look up from a technical paper or a report from the lab and cheer the boys on, then get back to work."

As for the perils that may potentially arise in working with a spouse, Cengiz says that, through the years, they have developed a very courteous professional relationship. He credits that relationship with helping them become part of today's important national research effort.

"Here at the university, we're colleagues," he said. "We've developed these technologies together and the expertise from both our labs has made this possible."



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— Mihri Ozkan

# Loafers, Adolescent Angst, Superheroes and More

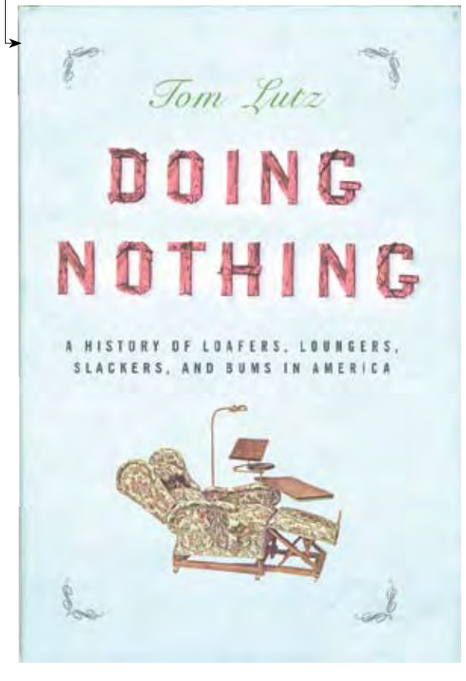
**It may not be "publish or perish" for every writer, but the written word is central to the reinvention made possible by a university. These authors have published books in order to reinvent their fields, their genres or even themselves. UCR faculty member Tom Lutz used parents' understandable consternation with an unemployed son to inspire his book "Doing Nothing: a History of Loafers, Loungers, Slackers, and Bums in America." UCR alumnus Rigoberto Gonzalez writes his personal reinvention story "Butterfly Boy," allowing outsiders to view his adolescent turmoil and eventual self-acceptance. And Stanley Stewart, longtime UCR English professor, takes on the unconventional examination of superheroes as a literary theme. The comic book cover is a super disguise for its textbook insides. This issue's "Page Turners" includes all that and more.**

*These books are available for purchase at the UCR Bookstore and online at www.bookstore.ucr.edu. They have been discounted up to 30 percent.*

**Doing Nothing: A History of Loafers, Loungers, Slackers, and Bums in America**
By Tom Lutz, UCR associate professor of creative writing
Farrar, Straus and Giroux
May 2006, 384 pages

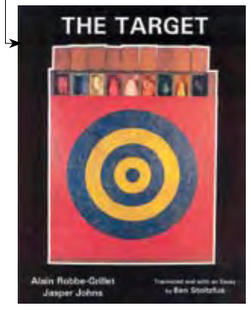
Couch potatoes, goof-offs, freeloaders, good-for-nothings, loafers and loungers. Ever since the Industrial Revolution, when the work ethic as we know it was formed, there has been a chorus of slackers ridiculing and lampooning the pretensions of hardworking respectability. Reviled by many, heroes to others, these layabouts stretch and yawn while the rest of society worries and sweats. Whenever the world of labor changes in significant ways, the pulpits, politicians and pedagogues ring with exhortations of the value of work, and the slackers answer with a strenuous call of their own. "To do nothing," as Oscar Wilde said,"is the most difficult thing in the world." From Benjamin Franklin's "air baths" to Jack Kerouac's "dharma bums" to Generation-X slackers and beyond, anti-work-ethic proponents have held a central place in modern culture.

Through a series of case studies that illuminates the changing pace of leisure in the American republic, "Doing Nothing" revises the way we understand slackers and work itself. Tom Lutz is an associate professor of creative writing at UCR. His previous books include "Crying: A Natural and Cultural History of Tears," "American Nervousness, 1903: An Anecdotal History" and "Cosmopolitan Vistas."



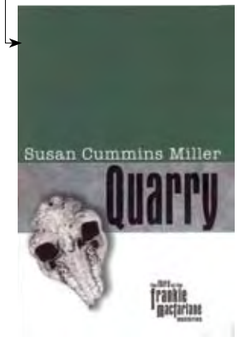

**The Target**
Translated with an essay by Ben Stoltzfus, UCR professor of comparative literature
Fairleigh Dickinson University Press
September 2006, 128 pages

The unique relationship between French novelist and cinematographer Alain Robbe-Grillet and artist Jasper Johns that intertwined pop art and metafiction is explored in this interarts study. Robbe-Grillet and Johns, in their respective works of fiction and art, sought to bridge the gap between artist and observer through the interplay of image and narrative. "The Target," Robbe-Grillet's narrative introduction to John's exhibit, attempts to express the theories of art by incorporating those theories used by Johns into his fiction.



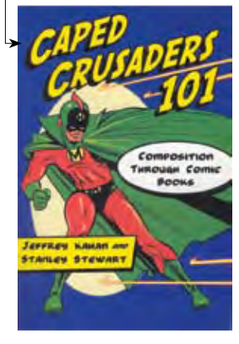

**Quarry**
By Susan Cummins Miller ('71, '73, '78 M.S.)
Texas Tech University Press
April 2006, 248 pages

As geologist Frankie MacFarlane prepares for her doctoral dissertation defense, two members of her committee are attacked, one fatally. Frankie must also deal with the possibility that her former fiance might still be alive and with the abduction of fellow student Dora Simpson. In the Mojave Desert, amid the arroyos and volcanic mesas of the Cady Mountains, Frankie finds the final pieces to these puzzles — and becomes the quarry. This is the third in a series.




**Caped Crusaders 101: Composition Through Comic Books**
By Stanley Stewart, UCR professor of English, and Jeffrey Kahan
McFarland and Co.
January 2006, 208 pages

This textbook is intended to inspire an appreciation for literature by studying important literary themes found in comics. By deconstructing comics, it encourages critical thinking about literature, a crucial skill for understanding language and composition. Chapters discuss DC, Marvel and other comics' varied attempts at portraying race, politics, economics, business ethics and democracy, responses to the Cold War and the events of Sept. 11, and portrayals of prisons and capital punishment.




**Global Social Change**
Edited by Christopher Chase-Dunn, distinguished professor of sociology, and Salvatore J. Babones
Johns Hopkins University Press — Baltimore
September 2006, 384 pages

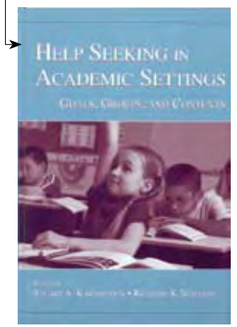
The essays in "Global Social Change" explore globalization from a world-systems perspective and offer insights into globalization's gradual and uneven growth throughout the course of human social evolution. Chase-Dunn and Babones bring together accomplished senior sociologists and outstanding younger scholars with a mix of interests, expertise and methodologies to offer an introduction to the ways of studying and understanding global social change.

**Contemporary Social Psychological Theories**
By Peter Burke, UCR professor of sociology
Stanford University Press
May 2006, 400 pages

This book presents the most important and influential social psychological theories and research programs in contemporary sociology. Original chapters by the scholars who initiated and developed these theoretical perspectives provide full descriptions of each theory, its background, development and future. The first four chapters cover general approaches organized around fundamental principles and issues. The following chapters focus on specific research programs and theories. A concluding chapter provides an analysis of and commentary on the state of the theoretical programs in sociological social psychology.


**Help Seeking in Academic Settings: Goals, Groups, and Contexts**
Edited by Richard S. Newman, UCR professor of education, and Stuart A. Karabenick
Lawrence Erlbaum Associates
March 2006, 336 pages

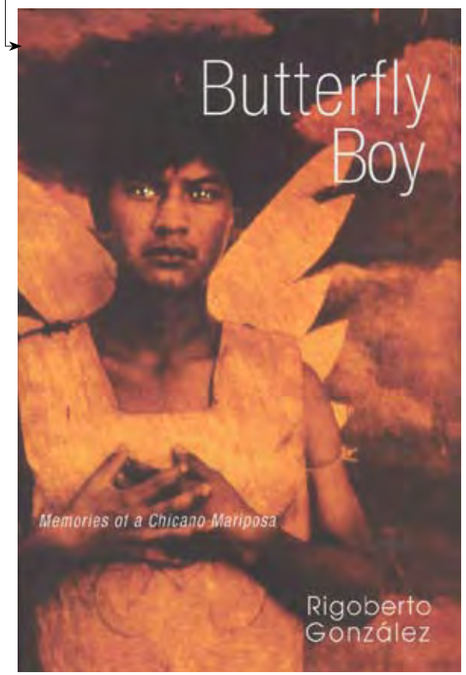
Help seeking is considered an important learning strategy that is linked to students' achievement goals and academic performance. This volume not only provides answers to who, why and when learners seek help, but raises questions for readers to consider for future research. Building on Karabenick's earlier volume, this book highlights trends in the area and gives expanded attention to applications to teaching and learning.




**Butterfly Boy**
By Rigoberto Gonzalez ('92)
University of Wisconsin Press
June 2006, 222 pages

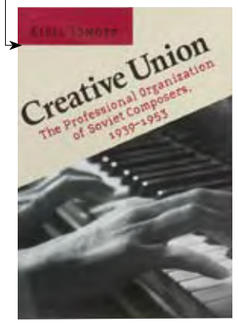
Heartbreaking, poetic and intensely personal, "Butterfly Boy" is a unique coming out and coming-of-age story of a first-generation Chicano who trades one life for another, only to discover that history and memory are not exchangeable or forgettable.

Growing up among poor migrant Mexican farmworkers, Rigoberto Gonzalez also faces the pressure of coming-of-age as a gay man in a culture that prizes machismo. Losing his mother when he is 12, Gonzalez must confront his father's abandonment and an abiding sense of cultural estrangement, both from his adopted home in the United States and from a Mexican birthright. His only sense of connection becomes forged in a violent relationship with an older man. By finding his calling as a writer, and by revisiting the relationship with his father during a trip to Mexico, Gonzalez finally claims his identity at the intersection of race, class and sexuality. The result is a leap of faith that every reader who ever felt like an outsider will immediately recognize.




**Creative Union**
By Kiril Tomoff, UCR assistant professor of history
Cornell University Press
June 2006, 321 pages

Why did the Stalin era, a period characterized by bureaucratic control and the reign of Socialist Realism in the arts, witness an upsurge of musical creativity and the prominence of musicians? This is one of the questions addressed in "Creative Union." Drawing on previously untapped archives, Tomoff shows how the Union of Soviet Composers established control over the music profession and negotiated the relationship between composers and the Communist Party leadership.




**Bring Everybody: Stories**
By Dwight Yates, UCR creative writing lecturer
University of Massachusetts Press
April 2006, 143 pages

The winner of the 2005 Juniper Prize for Fiction, this collection of stories delivers the range of characters suggested in the title, many of them struggling to salvage situations they feel have been thrust upon them. Self-delusion courts self-destruction in these stories, but not without relief, since revelation is always possible and redemption just might come tumbling after. The stakes are sometimes low and the circumstances more rueful than tragic.

# MINING THE SEAS FOR MEDICINE

**A Ph.D. in chemistry from UCR took alumnus William Fenical from the desert to the sea to search for new cures. Combining his two passions — the ocean and organic chemistry — Fenical's pioneering efforts are making waves in the world of medicine.**

By Celeste Durant

Few of us care to think about our next illness or the medicines required to cure it, but if we did, we would be frightened — as frightened as UCR alumnus William Fenical.

In 1928, when penicillin was discovered lurking in mold in an unwashed Petri dish, no one, including Alexander Fleming, the man credited with discovering its bacteria-killing properties, had any idea it would become the so-called "magic bullet" — the cornerstone of today's arsenal of powerful antibiotics.

For decades, researchers have scoured the earth — in swamps, jungles, rain forests, backyards and compost heaps — for new antibiotics and they found streptomycin, erythromycin, actinomycin and vancomycin.

Researchers also unearthed other antimicrobials — antivirals, antiparasitics and antifungals. Diseases that once killed by the thousands, such as bubonic plague, typhoid fever, scarlet fever, malaria, measles and tuberculosis, nearly disappeared from developed countries.

But as quickly as researchers came up with new drugs, their targets — one microbe after another — began their evolutionary dance for survival, mutating into new drug-resistant strains that deflect the once-powerful magic bullets.

As a result, diseases once thought vanquished are resurfacing in more virulent forms.

"People are now dying in hospitals of simple infections that a few years ago they would not have died from," says William Fenical from behind his desk, his beloved Pacific Ocean bathing him in soft light. "Now there are infections that are impossible to cure."

Fenical and many in the medical and research communities believe the world is in the midst of a medical emergency. "It frightens researchers and our colleagues who are treating infections in hospitals," says Fenical.

He should know. He is director of the Center for Marine Biotechnology and Biomedicine (CMBB) at Scripps Institution of Oceanography at UC San Diego. For more than 30 years, he has been one of the pioneers boldly going where few have gone before for new sources of medicines — the ocean floor.

He and generations of students and fellow researchers have been reinventing how scientists search for medicines, and they have been coming up with new sources of cures. It has been a long slow journey — one that started inland, at UC Riverside.

### In Love with the Ocean

Young Bill Fenical arrived at UCR in 1965 after earning his bachelor's degree in chemistry from California Polytechnic University, San Luis Obispo, and his master's degree from California State University, San Jose. He loved chemistry.

"It was always chemistry, always organic, always the biologic side — but I just wasn't sure what I wanted to do as a young guy," he says.

But there was something else.

"I fell in love with the ocean when I was 12 and my family moved from Chicago to California, by way of Florida," Fenical says. "We stopped in Florida to visit my uncle and stayed in a motel right across from the ocean. While my parents were out, I'd put on my diving mask and go out to look under the surface. I saw all kinds of life under the sea and I was fascinated."

He was an avid fan of "Sea Hunt," the classic '60s television adventure show about a crime-fighting scuba diver. "I wanted to do all those underwater things I

Scripps Institution of Oceanography/UC San Diego.

"I changed from working on animals and plants to studying ocean microbiology. I had to reinvent myself. I said, 'OK, I'm an organic chemist but I have to be a microbiologist now.' I had to educate myself in microbiology." — William Fenical

saw on TV," he recalls. So after arriving in California, he took scuba lessons and went diving whenever he could.

At some point, he remembers, he made a decision. "I had to do something that combined the two things I was most passionate about — the ocean and organic chemistry."

After completing his doctorate in 1968, Fenical stayed another year as a post-doctoral fellow at UCR, then left for a job with an oil company in the San Francisco Bay Area. Meanwhile, two of Fenical's UCR chemistry professors, Phillip Radlick and Jim Sims, also avid divers, were beginning to look into a new area of research.

"We started with synthetics, or making our own chemicals," says Sims, who retired in 2004. "But Phil and I had been reading stuff about the ocean and we decided it would be a good thing to do: combine chemistry and the ocean. It was a new place to look and no one was doing much there.

"I looked in the literature and discovered there was biological evidence for antibiotics coming from seaweed," Sims remembers. "The three of us went down to Scripps to find someone who was familiar with the research who could help us collect samples." Radlick had money from the U.S. Department of Commerce, which at the time was funding oceanic research.

Up in the Bay Area, Fenical, unhappy with petroleum research, checked in again with Sims, who was now in UCR's department of plant pathology. "I told him I wanted him to teach me about natural products."

Natural-products chemistry is the study of naturally occurring substances for use as therapeutic drugs. And Sims and Radlick had just enough money to fund a post-doctoral fellowship at UCR for Fenical. This was the turning point in the young researcher's life.

"We started to ask questions like, 'Are there molecules in the ocean that are natural products?' In 1972, little was known about the ocean's chemistry. We wrote 10 or 11 papers that were some of the first discoveries in a new field," says Fenical, still excited about his early research.

After a year of studying natural products from the ocean, Fenical was hooked. His UCR fellowship ended and he headed south to look for work. "I came down here [to Scripps] and pounded on the door," he says, smiling.

**Eureka! in San Diego**

He didn't get a faculty position, but he did get nine months of salary and a chance to dig up a source of funding for this new field of study.

"Boy, was I frightened," he says, shaking his head and smiling. "I had a wife and a child living in a rental unit and the prospect of having no money at all from the university. I was crawling in the back door and nobody cared that I was here."

That was 33 years ago. Since then, he's written more than 350 scientific papers, trained 113 doctoral and postdoctoral researchers, and risen from the ranks of non-faculty researcher to distinguished professor of oceanography and pharmaceutical sciences. He's also become an entrepreneur, as a co-founder of Nereus Pharmaceuticals — a private company licensed through the university to take marine medical discoveries to market.

Fenical says his reinvention began almost immediately. "Can you imagine, four months out of Riverside, coming to the Oceanographic Institute and being told, 'You are the head scientist, organize an expedition.' Organic chemists don't organize expeditions."

Fenical, a round 65-year-old with a full gray mustache and a penchant for Hawaiian shirts and topsider loafers, says he still feels like he's in his 30s. His students find it hard to believe he spent so much time on ships, out in the deep waves diving for samples.

Over the years he's conducted 27 major shipboard expeditions.

"In the beginning, there was a much bigger unknown — whether the ocean and life in the sea had the diversity of natural products there is on land. We had to find out what was going on chemically in the ocean and the different kinds of animals and plants." From those studies came a better understanding of how the ocean works, Fenical says.

Even if one doesn't know anything about science, Fenical, a master at translating his complex subject into simple English, can make the subject engrossing. "There are two kinds of creatures on the ocean floor — soft things and hard things, like lobsters and animals with external skeletons. The soft things seem incredibly easy to eat, but nothing eats them," says Fenical. "That's because they've developed chemical defenses.

"When you bring those chemicals into a laboratory, you find they contain highly toxic or noxious compounds. Our early work created a brand new field of marine chemical biology.

"About 10 years ago we thought, 'What grows in the mud [of the ocean] and where — out in the middle in the deep ocean or nearby on shore?' And we started to look around."

He remembers what he calls his Eureka moment. At the time, his team was analyzing the DNA of bacteria found in an early sample of ocean mud. They were comparing the results on a computerized list of all known life and there was no match. "We realized that we were working with microbes that had never been seen before."

When the team began to grapple with how to search vast oceans, they decided to create a way to find medically relevant chemicals. This decision required the development of equipment to capture samples from ocean depths where darkness, very high pressure and low temperatures make it inhospitable to humans. New tools were developed to access samples from as deep as 600 meters. Although other researchers are looking under the waves for cures, Fenical has been a leader in developing ways of prospecting thousands of feet below the surface.

This technology led to the discovery of new bacteria in mud samples from the Red Sea, the Gulf of California and the Atlantic and Pacific oceans. The team has since identified 15 new scientific categories of organisms.

The decision to concentrate on medically valuable products also required another shift for Fenical. "I changed from working on animals and plants to studying ocean microbiology. I had to reinvent myself. I said, 'OK, I'm an organic chemist but I have to be a microbiologist now.' I had to educate myself in microbiology."

He jokes today that he probably is not as great a microbiologist as he'd like to think, but he's gotten results. "It took us 10 years to learn about the ocean's microbiology and to realize we could cultivate microorganisms from the ocean floor that no one had ever seen."

Walk through the more than 30 labs in Fenical's research center and you'll find a labyrinth of rooms with temperature-controlled chambers filled with stacks of Petri dishes and triangular beakers containing thousands of colonies of microbes feasting on nutrient-dense brown jelly. It may not smell great, but these are the fruits of the team's labor, the treasure chests that might hold cancer cures and the next generation of antibiotics.

"Within a few years we've found thousands of brand new organisms and we culture them to see what kinds of chemical compounds they produce," Fenical says proudly as he opens a Petri dish filled with bluish microbes. "Three years ago we found a molecule that was very effective in limiting cancer growth and it's now in clinical trials. And we have two chemical compounds from marine microbes in clinical trials for cancer." Another of his ocean finds shows potential for breaking down the resistance of streptococci bacteria to standard antibiotics.

In 2003, Fenical received a Merit Award from the National Cancer Institute for his discovery of the production of new antibiotics and antitumor agents by deep ocean sediment bacteria.

But Fenical still feels he has a lot of work ahead of him.

"Cancer is important and we've done good things there, but what about the urgent need for antibiotics? That's what's driving us — the societal need." ■

"Three years ago, we found a molecule that was very effective in limiting cancer growth and it's now in clinical trials. And we have two chemical compounds from marine microbes in clinical trials for cancer." — William Fenical

# Is it Art, or Chemistry?

By Litty Mathew

Vincent Lavallo creates art out of elements that some might consider minutiae, layering in bits of information, color and point of view. He steps back often to see what he's created. He's reflective. He makes changes.

And when Lavallo's finished with a project, a giant canvas isn't displayed in a gallery. Instead, a molecule emerges and changes science. He has helped invent something totally new, and perhaps, has reinvented himself in the process.

**"Science is the closest you get to doing something fantastic — like you'd see in science fiction movies as a kid." — Vincent Lavallo**

Lavallo may not be a classic example of a modern artist in the vein of Hockney or Kandinsky. He is a chemist. But he creates what is novel and interesting. His studio is the lab and his canvas the schlenk, a sealed glass reaction vessel under an inert atmosphere of argon.

As a 28-year-old graduate student in the UCR Department of Chemistry, Lavallo has helped synthesize molecules — called carbenes — that have unusual carbon atoms that allow them to bind to metals and permit chemical changes that were previously impossible in these metals. His current project involves using carbene-supported transition metal complexes to find new catalytic reactions.

"Science is the closest you get to doing something fantastic — like you'd see in science fiction movies as a kid," notes Lavallo, who's been interested in the sciences since middle school. His synthetic molecules are more than cool. They may also help the pharmaceutical industry reduce drug-manufacturing costs where carbene-supported catalysts are used for chemical reactions. "We try to use these molecules to make catalysts for useful applications," explains Lavallo of his work, which he hopes will lead him to a Ph.D. in chemistry.

"Vince believes that all his hypotheses are correct," says Distinguished Professor of Chemistry, Guy Bertrand, on whose team Lavallo works. "This is why he has been able to obtain extremely surprising and exciting results. He is highly imaginative and does not want to follow the main road."

Lavallo discovered his talent in chemistry early on, joining UCR as a biochemistry major.

"I did well in biochemistry but I wasn't passionate," explains Lavallo. It wasn't until he took Bertrand's Organic Chemistry 112A course that he found his calling.

"I realized I liked what I was doing," said Lavallo. It changed his academic career. "When I teach undergraduates, my main objective is to prepare the largest possible majority of students for their exam and to demonstrate that chemistry is useful for society and not boring to learn," said Bertrand. "However, my great pleasure is to attract a few of these students to do research and share my passion." Bertrand likens a research group to a family.

"When you're a kid, you want to be successful for yourself. When you're a parent, you want first your kids to be successful and if they are, it's great!"

Lavallo has passed on the favor. He has helped two undergraduates spend the summer in the lab.

"I can say that I was able to help inspire at least one of my students to pursue research. I learned that it's possible to influence the right person to learn chemistry outside of the class. To steer someone in the right direction," said Lavallo.

That, too, is an art.





# Mark Schroeder

By Kris Lovekin

Mark Schroeder and his wife, Eve, recently created an endowed scholarship to help a UCR student with an interest in fire science. Why? Mr. Schroeder, who spent most of his life working in the world of fire science and weather, wants to continue the legacy.

**Life So Far**

After serving as a weather reconnaissance officer in World War II, flying in B-17s, he became a research meteorologist for the U.S. Forest Service, assigned to the U.S. Forest Service fire laboratory in Riverside. He led the National Fire Danger Rating Project, the rating system still in use today. He retired in 1973. He and Eve have traveled to more than 170 countries.

**Great Accomplishments**

Schroeder earned the U.S. Department of Commerce Silver Medal for Meritorious Service, the U.S. Weather Bureau Distinguished Service Award and the Forest Service's Outstanding Performance Award for extraordinary scientific leadership, all related to the success of the National Fire Danger Rating Project.

**Influential UCR Mentor**

Donald Munnecke, professor emeritus in the Department of Plant Pathology, was a close friend. Schroeder also keeps an inquisitive eye on the fire ecology work of UCR professor Richard Minnich.

**Your Legacy**

Paving the way for future fire scientists.

# Quick Flicks

**UCR's Renee Coulombe had to hit "fast-forward" on her musical composition technique for the 48-Hour Film Festival in San Diego. The project turned a blender and a toaster into film stars.**

By Renee T. Coulombe, Assistant Professor of Music

What do you get when you mix a half-dozen software engineers, one UCR composer and radically new digital imaging technology? An award-winning film at the San Diego 48-Hour Film Festival that stars a toaster and a blender, not to mention the aforementioned UCR composer. The short film, "Burnin' Love," by the completely obscure Cane Toad Productions, earned the 2006 jury prize for best cinematography.

For those not currently enslaved to You Tube, the 48-Hour Film Festival requires crews to write, edit and produce a film within a frantic two-day span. It owes its very heart and soul to the digital video revolution. That's because digital cameras and editing software make it possible (while still perhaps not advisable) to write, edit and shoot a short film in two days.

Until recently, the color and vibrancy of film could not be captured in binary code, or so it would seem. How fitting then, that this festival, itself based on revolutions in digital technology, has reinvented filmmaking again with a little film shot in a decidedly un-Hollywood neighborhood in eastern San Diego.

My brush with film-making history started with a frantic phone call on a summer afternoon from a friend in a modest neighborhood of San Diego. David Newman, software engineer and creative genius behind video and high-definition video-editing software companies Applied Magic and CineForm in Carlsbad, asked if I could lend my musical and technical skills to their crew.

I knew this experiment in guerrilla filmmaking was intense, but my curiosity was piqued when he revealed that Silicon Imaging had loaned him a prototype high-definition (HD) processor for a new kind of HD camera — one of only three in the world.

The crew had to build a camera around this processor in a single day — because it arrived the afternoon before shooting began. Sony loaned a prototype laptop to run the necessary beta-version software, so we were ready to shoot.

Almost.

They were debugging the editing software even as the film rolled — or more accurately, as the hard drive buffered and then saved. The occasional system crash only added to our resolve, as we experimented with the camera's possibilities.

First, we discovered that the processor was so fast it could capture true filmic color and depth of field in digital video. The San Diego sky never looked so blue in high definition as it did on that July afternoon. The early evening glow of sunset, captured in one of "Burnin' Love's" sequences by that awkward tangle of cables, lens and processor, revealed every color of the rainbow. More than that, the camera was so small and light — containing little more than a lens, processor and gigabit cable ports connecting it to the laptop — that we could innovate with little-before-seen shots, like "toaster P-O-V" or the always tricky "inside-the shutting trunk" camera angle.

I knew my first priority had to be creating an equally innovative musical score. Music is often overlooked in fast filmmaking, but there, too, digital technology allowed the creation of a musical score at the speed of the 48-hour festival.

I arrived in San Diego on Friday afternoon in a tiny Miata jammed with a Roland piano keyboard, a mixing board, a recording module, microphones, a Mac G4 tower, monitor and keyboard, as well as several hundred feet of audio and video cable. Oh, and some costumes and makeup.

Knowing that I'd be pressed into acting, writing and editing, as well as scoring the film, we shot my one acting scene early on the first day. Then, as scenes were shot and edited, I could import them directly into ProTools, a music industry standard recording and editing software, and record the music. Such a streamlined process was not just helpful, but essential. I had 20 whole minutes to score and record a central flashback sequence involving the surprisingly touching backstory of a toaster and blender accidentally separated at a yard sale.

**New technology is helping artists revise and reinvent themselves, revolutionizing the filmmaking process, including the form and content.**

New technology is helping artists revise and reinvent themselves, revolutionizing the filmmaking process, including the form and content. Collaborations between artists and industry reimagine the line between the artist and the engineer, a Hollywood soundstage and the house next door.

And yes, at the end of the film, the blender and the toaster are reunited.

Find out more about the 48-Hour Film Festival at 48hourfilm.com/sandiego. See the film at: www.cineform.com/48hour.





# Tee and Sympathy

Ladies Professional Golf Association star Annika Sorenstam had her sights set on tennis stardom when a terminally weak backhand forced her to cash in her racket for a set of golf clubs.

Twenty years later, she's the LPGA all-time leading money winner, with 68 tournament wins, including 10 major tournaments, eight Rolex Player of the Year awards and induction into the World Golf Hall of Fame.

Sorenstam credits much of her success to her experience as a member of her college golf team, so she quickly agreed to give a clinic at the Bighorn Golf Club in Palm Desert to raise scholarship money for UCR's golf programs.

"It fits in really well with some of the stuff I'm doing with junior golf, so I thought I could help out and give them one or two pointers … and that would be great," she told reporters.

Along with tips on training, like how to line up a shot and the proper use of a driver ("the key is to sort of sweep it off the tee"), the top woman golfer in the world also shared a few life lessons.

"I got a lot of experience at school," she told the gathering of enthusiastic golf team members, UCR donors and university staffers. "It taught me a lot about life and people. It taught me what I wanted as a career."

Sorenstam, who spent two years at the University of Arizona before leaving to turn pro, also made a small confession. "Sometimes, I wish I'd stayed and finished college," she told the group. "Take advantage of the opportunity. It's a great time to absorb everything you can."

For UCR golf team member **Linda Ong**, the golf star was an inspiration. "It shows me there's a place for me out there and if I work hard with a lot of determination I can get there."

# '50s

'56 **Thomas A. Langford** retired as graduate dean at Texas Tech University from which his two sons graduated, one with a master of arts degree, the other with a Ph.D. Thomas and his wife, Nell, are in fair health in their 70s.

# '60s

'61 **Art Riggs,** director of the City of Hope's Beckman Research Institute, was among 72 people elected to the National Academy of Sciences. He's known for his work on techniques that have led to therapies for arthritis, cancer, diabetes and other diseases.

'65 **Carol (Haller) Small** and her husband, Ken, have retired to the sailing capital of North Carolina, the city of Oriental, with a population of almost 900, but with more than 3,000 active sailboats. The couple are avid sailors.

'69 **Forrest S. Mosten** has been a private mediator since 1979 and is an advanced practitioner member of the Association for Conflict Resolution and a popular presenter at mediation conferences worldwide. Forrest also maintains an active practice as a family lawyer representing clients in divorce, pre-marital agreements and complex family law issues. Forrest was named as a 2006 Super Lawyer by *Los Angeles Lawyer* magazine and one of the Top 25 Family Mediators in California by the *Los Angeles Daily Journal.*

# '70s

'70 **Perry Pugno** is director of the division of education of the American Academy of Family Physicians. After service with the National Health Service Corps, he became a residency director and accumulated more than 20 years' experience in that role. His professional background also includes trauma center director, hospital chief medical officer, public health officer, vice president of a large integrated health system and medical director of a health plan. Perry was also a featured speaker for UCR's Health Sciences Initiative.

'71 **Jeffrey S. Gaffney** (M.S. '73, Ph.D. '75) joined the University of Arkansas at Little Rock as chair and tenured professor of chemistry in July. He had been senior chemist at Argonne National Laboratory near Chicago for the past 17 years.

'73 **Jorge Arias** (Ph.D.) is an insect control officer for the Fairfax County Department of Health. He's in charge of the disease-carrying insects program. His office is responsible for trapping and identifying disease-carrying mosquitoes and other insects, including ticks that transmit Lyme disease … **Barbara Finlayson-Pitts** was elected to the National Academy of Sciences. Barbara is a professor of chemistry at UC Irvine and studies chemical reactions in the lower atmosphere to better understand air pollution in urban and remote areas. She directs AirUCI — Atmospheric Integrated Research Using Chemistry at Interfaces — a multi-investigator effort to better understand how air and water interact in the atmosphere and how those processes affect air quality and global climate change … **John Jimenez** and **Barbara (Brown) Jimenez** ('74) celebrated their 30th wedding anniversary. The couple met in January 1971 at a UCR tutorial program orientation meeting … **Gary McGavin** was reappointed by Gov. Schwarzenegger to his third term on the California Seismic Safety Commission representing the architecture seat. He's the current chair of the commission. Gary teaches architecture and seismic design at Cal Poly Pomona and has an architectural practice in Redlands.

'74 **Jim Gifford** (Ph.D.) retired after 30 years at the University of Wisconsin, Stevens Point. He has served on the board of the Wisconsin Council of Teachers of English, as secretary of the Wisconsin Chapter of the Society for Technical Communication, and national committees for the Conference on College Composition and Communication, the National Council of Teachers of English, and the National Education and Research Committee of the Society for Technical Communication. He's serving his ninth consecutive term on the Portage County Board of Supervisors and has been chair of the Springville Pond water quality committee for the village of Plover since 1992.

'76 **Robert McLennan** is owner of Fitness West in Daly City and South San Francisco. He also serves as chief financial officer on the Daly City-Colma Chamber of Commerce board of trustees. He was "Principal for a Day" at his alma mater, Westmoor High School, in March … **Linda Sarnoff** (M.Admin.) is community development director for the city of Silverton, Ore., where she oversees both current and long-range planning, code enforcement, building, development review and Silver Trolley functions. Linda was formerly the community development director for the city of Florence. She is married and has four children.

'78 **Linda Halisky** (M.A., '84 Ph.D.) was appointed dean of the College of Liberal Arts for Cal Poly San Luis Obispo. As dean, she's responsible for the quality of the College of Liberal Arts' undergraduate and graduate academic programs. She oversees about 60 staff members and more than 300 faculty members. In 2004-05, Linda received the Student Success Recognition Award from the university's division of student affairs and won the Cuesta College Woman in Education award. Linda joined Cal Poly as an assistant professor of English in 1984.

'79 **Marshall Johnson** (Ph.D.) was selected as a fellow for the Entomological Society of America. He's currently IPM Extension Specialist and entomologist and lecturer at the University of California, Riverside. He has awards from the University of Hawaii, the Hawaiian Entomological Society and the Entomological Society of America. Marshall is currently president-elect of the International Organization for Biological Control and a past president of the Hawaiian Entomological Society. He was also a member of the ESA Governing Board and chair of several of its committees, the editor of the Proceedings of the Entomological Society of Hawaii for several years and editor of *Biological Control* from 1997-2004.

# '80s

'80 **Arlene (Lehmkuhl) Golds** teaches high school English in Riverside. Her first novel, "From Dream to Dream" was published by Baen Books in June … **Michael Campbell** has been named chief software officer, navigation division for the Aerospace Corp. in El Segundo.

TAKE FIVE

## Thao N. Lam

**UC Riverside, Political Science Major/Women's Studies Minor 1993**

By Litty Mathew ('91)

**Alumna Thao Lam is all about breaking boundaries. Her chosen path has permitted her to see upfront the social concerns facing our communities. Whether it's child abuse, domestic violence or substance abuse, Lam has seen it as a case manager for the Los Angeles County Department of Children and Family Services, which serves some 38,255 children. In her spare time, she volunteers with a group called the Program for Torture Victims.**

1. **Why do you volunteer for the Program for Torture Victims?**
We work with people who are survivors of international state-sponsored, paramilitary or ethnic violence. I decided to volunteer because in my current paid position, I no longer have client contact and I wanted client contact again but in a different setting.

2. **We're out of reading material. Can you recommend a book?**
I just finished Monique Truong's "The Book of Salt." It's about this imaginary household of Gertrude Stein and Alice B. Toklas in Paris as told by Binh, their gay Vietnamese cook. It transports you to Paris and into the mesdames' kitchen with Binh's cooking and his musings carrying you back and forth to his "home," though he is really in a constant state of exile.

3. **Tell us one thing you haven't told anyone else.**
While I was a student at UCR, my records mistakenly listed me as "male" so I had to request a "gender change," or should I say "gender confirmation," from the administration office for my records. Whenever I get junk mail addressed to "Mr. Thao Lam," I still chuckle.

4. **What class would you have loved to have taken but never had the chance?**
I probably would have taken more classes with sociology professor Edna Bonacich, who just retired this past June. She challenged me to look at the world differently and was one of the two women who inspired me to go into social work.

5. **What's the best thing you took away from UCR?**
It expanded the notion of the world for me. There is a quote from "Cinema Paradiso," a film I first saw at the Fox Theater in downtown Riverside during school. Alfredo tells Toto as a young man, one must leave this poisoned land because if you don't, you will come to believe that this is the center of the world. Only then can you find your people. I feel if I didn't attend UCR, that my land — or world — would have been "poisoned." All I'd known was a world with definite boundaries.

Names printed in **Blue** indicate members of the UCR Alumni Association.
To update your membership, visit www.alumni.ucr.edu.

# Homecoming Court — It's All About Volleyball

A tribute to Head Volleyball Coach Sue Gozansky and UCR's volleyball program will be part of this year's Homecoming celebration, scheduled for Feb. 22–24. Events include meals inside the Barn, campus tours, a hike to the C on Box Springs Mountain, classes without tests, and a basketball matchup against rival UC Santa Barbara.


Visit friends and classmates, and see what the campus looks like now, including the site of the new Alumni and Visitors Center and the progress on the new Commons.

For times and dates, www.homecoming.ucr.edu

# Nominate an Alumnus

Which UCR alumni are making a difference in the world? Nominations are sought for the 2007 awards for Distinguished Alumnus, Alumni Service and Outstanding Young Alumnus and Honored Alumni.

The nomination deadline is Dec. 1. Recipients will be honored at the 21st Annual Alumni Awards of Distinction Banquet, on April 21.

# Tour Sardinia, Corsica, Rome

Travel the world with other UCR Alumni Association members. The tour is scheduled for July 6–17, 2007, and is priced $4,195 per person for reservation deposits paid by March 15, or $4,295 thereafter.

**How to contact the UCR Alumni Association**
**Web site: www.alumni.ucr.edu**
**E-mail: ucralum@ucr.edu**
**Phone: (951) UCR-ALUM or (800) 426-ALUM (2586)**

For information about these and other alumni events, visit www.alumni.ucr.edu

12.03

**UCR at UCLA Men's Basketball Game and Pre-Game Lunch**

Bus leaves from UCR at 11:30 a.m. The day includes a 1 p.m. lunch at the L.A. Tennis Center and a 2:30 p.m. tip-off at UCLA. Cost is $50 alumni association members and $60 non-members with transportation; $30 members and $40 non-members, for the pre-game lunch and game only. Reservations are requested by Nov. 27.

01.13

**Alumni Reception and Women's Basketball at UCR**

Alumni reception and UCR Women's Basketball Game vs. Cal State Fullerton; 3:30 p.m. pre-game reception at UCR Student Recreation Center; 5 p.m. tip-off.

02.22

**Alumni Association Winter Quarter Meetings**

Executive Committee Meeting
University Extension, Suite 6. 1:30–3 p.m.
UCRAA Winter Quarter Board Meeting
University Village Conference Room 207. 3–5:30 p.m.

3.26 – 27

**UC Day in Sacramento Legislative Conference**

UC Day is the one time of the year when all 10 UC campuses come together to meet with elected officials on issues facing UC. This is an opportunity to meet in small groups with legislators in their offices and discuss issues affecting higher education.



He is responsible for software issues and opportunities across all parts of the global positioning system program supported by the company. He's been with the Aerospace Corp. since 1992. He met his wife, Asya Glozman, while they were both studying at UCR. They have two daughters, Sasha and Alice …

**Kim Foreman** has joined the Community Foundation Serving Riverside and San Bernardino counties as director of communications and visibility. The Community Foundation is a 501(c)(3) charitable organization that distributes scholarships to every college in the two-county area and funds programs that enhance the quality of life in the community. Her husband, **Patrick Benn** ('81), is a senior consultant with Booz Allen Hamilton …

**Derek Isaacs** ('86 M.S.) had an article called "IAVA Management" published in the August edition of the *ISSA Journal*. He received a master's degree in computer science with a concentration in computer system security in June.

'82 **Judy (Nelson) Plotkin** moved to Oregon in 2004. Her husband of 32 years died in 2002. She's a retired special education teacher and college instructor. Judy is involved in the Red Door Community, a social action group that helps people manage in difficult situations. As a presenter for the American Association of University Women, she went on a mission to Ukraine and Soviet Union to set up a reform congregation in 2003.

'83 **David Hawkins** commands the 27th Intelligence Squadron, which conducts intelligence computer operations and production support for worldwide intelligence, surveillance and reconnaissance operations. He plans, manages and integrates intelligence systems and emerging technologies to achieve information dominance and operational supremacy.

'84 **Gerry Riposa** is dean of the College of Liberal Arts at California State University, Long Beach. Gerry has served as the associate dean for the College of Liberal Arts since 2002, overseeing the development and coordination of the college's budget plan and managing enrollment for the college. He has also served as interim dean for the college. As dean, Gerry is the chief academic officer of the college and reports to the provost and senior vice president for academic affairs. He's responsible for directing and coordinating the instructional, curricular and support program of the college, including academic and professional programs at the undergraduate and graduate levels.

'87 **Scott Moyer** joined Mainline Information Systems as chief financial officer in March. He has extensive background in finance, accounting and planning. He began his career in 1990 with Arthur Andersen & Co. in Atlanta, Ga., and spent five years as an auditor then as a consultant.

'88 **Dan Kish** is a blind psychologist and leading teacher of echomobility among the blind. He's also executive director of World Access for the Blind. Dan is the first certified blind orientation and mobility specialist in the world and is one of the world's foremost experts on echolocation. Echolocation is a technique that teaches blind people to listen for echoes to navigate in a sightless world …

**Michael Givel** (Ph.D.) was recently promoted by the board of regents of the University of Oklahoma to associate professor of political science with tenure at the university's Norman campus. His areas of research and teaching interest include public policy, health policy including tobacco policy, public administration and urban politics. In addition, Michael was recently named to 2006-07 Who's Who in Health Care and Medicine …

**Stephen Ure** is an immigration and divorce attorney in Fontana, Calif. He has been chair of the San Diego County Bar Association Immigration Law section for the past three years.

'89 **Robert Field** was promoted to director of facilities management for Riverside County. He is responsible for overseeing the construction of a number of new multimillion-dollar public facilities over the next several years, and oversees the operation and maintenance of more than 5.7 million square feet of existing county buildings.

## '90s

'90 **Michael Valentine** announced the birth of his first daughter, Emma Collette, in November 2005. He and his wife, Laura (Bloomfield) Valentine, were married in 2000. Later that year, he earned a Ph.D. in biological sciences from the City of Hope Graduate School. The family lives in Woodland Hills, Calif.… **Shelbi Wilson** was named one of five California Teachers of the Year last year. She's a teacher at Lincoln Continuation High School in Riverside.

'91 **Douglas Swart** is court administrator at Pomona Courthouse of the Superior Court of California for the County of Los Angeles.

'92 **Mike Bergler** ('95 M.S.) was promoted to director of alumni and family relations and advancement services at Concordia University in Irvine, Calif. Mike is also a speaker in alumni and family relations programming at regional and national conferences. Last year, he was awarded two silver medals for peer-reviewed programs in alumni relations and fund raising. His wife, **Lisa (Gracey) Bergler** '93, is the director of recruiting for the Orange County/Pasadena offices of John Hancock Financial. They have two children, Natalie, 6, and Jonathan, 3 …

TAKE FIVE

# Rod Pacheco

UC Riverside, Political Science, 1980

By Laurie Williams

**Rod Pacheco was a mover and shaker in student government during his undergraduate years. He apparently enjoyed the give and take, because he has spent his whole career in public life, first as one of Riverside County's winningest prosecutors and later as Republican leader of the state Assembly. Now back in the District Attorney's Office, he takes over the top job Jan. 1.**

1. **How does a person with a heavy job let loose?**
Well, I actually like to work — I'm fortunate that my job itself tends to keep me loose, and it's enjoyable every day of the week. Also, I love to spend time with my family.

2. **We're out of reading material. Can you recommend a book?**
One I read recently and enjoyed very much was "Team of Rivals," by Doris Kearns Goodwin. It's about Abraham Lincoln's Civil War Cabinet. Lincoln is someone I've admired for a long time, and this book shows his leadership style and his understanding of people's motivations.

3. **What class would you like to have taken at UCR but never got the chance?**
That would definitely be Critical Thinking. I tried to sign up for it every time, all four years, and it was always booked. It was an introduction to the philosophy of thought and how to analyze issues. It would have been a great class to take as an undergrad, but I probably made up for it in law school.

4. **Do you have a hero?**
My hero is my mother, because she's worked very hard and made the most of her life. From humble beginnings, she became extremely successful in her field, real estate. She's quite a person.

5. **What's the best thing you took away from UCR?**
I think it was the feeling that everyone on campus really cared about whether students learned and succeeded. I remember two people especially. Francis Carney taught political science and I'd pore over the course catalog and sign up for anything he was teaching. Vince Del Pizzo was an administrator I worked with in student government. He was this wisecracking practical thinker, but with a lot of human wisdom. Some of it got through my thick head.

**John Hoskinson** is a singer/songwriter. He has released an independent CD, "Miscellaneous Heathen." John returned in May from a brief tour through Europe, where he did 13 shows in 16 days in seven cities. He was able to book a couple of shows at the legendary Cavern Club in Liverpool …
**Steve Nunez** has moved his law office to Mission Valley in San Diego. His practice emphasizes representation of individuals and small business in litigation, as well as personal estate planning …
**Sheri (Silva) Rocco** and her husband, Gregory, announce the birth of Katherine Rose, who joins her 2-year-old siblings, Lauren and Michael. The family is healthy and doing very well …
**David Salardino** and **Paige (Downey) Salardino** ('93) are proud parents of a baby girl, Mia.

'93 **Gregory Scott Hoover** received his master's of law in taxation from the University of Washington. Gregory received his J.D. degree from the University of Detroit Mercy in 1996 and is currently practicing law in Seattle, Wash. He has been an attorney for eight years …
**Barbara Jacobs** ('98 M.A.) is a resource specialist program teacher at Hesperia Junior High School. She led her students to the national competition of the Christopher Columbus Awards, a nationwide science program that challenges middle school students to explore opportunities for positive change in their communities. This was the first time students with disabilities have made it to the finals. The team won a gold medal for its entry, "H.O.T. — Hands-Off Telephone Band," a Velcro wristband used to hold a cell phone for those who need or would like hands-free communication without an earpiece …
**Lucinda Ledesma** ('94 teaching credential) is a first-grade teacher for Hemet Unified School District.

'94 **Shannon (Martin) Effa** and her husband, Rob, welcomed their third daughter, Kaitlin Rose, in March 2006. The family resides in Humboldt County along with their two other daughters, Sophie and Ashley. The family relocated to Redding, Calif., where Rob is an assistant principal at a K-8 school …
**Kelin Wang** (MS., '01 Ph.D.) is a recipient of the Resident Clinical/Basic Science Research Award, which is sponsored by the American Society of Therapeutic Radiation and Oncology. Kelin's study focused on acute and chronic hypoxia in head and neck cancers based on serial PET-FMISO images. He's now working with Dr. Clifton Ling as a research fellow in medical physics at Memorial Sloan-Kettering Cancer Center in New York …

'95 **Diana Finck** graduated from residency as an OB/GYN doctor from Drexel University in Philadelphia and now works at Kaiser Permanente Orange County. She was married in July to Luke Spak of Danbury, Conn.…
**Vince Moses** (Ph.D.) retired as director of the Riverside Metropolitan Museum in March. He was director for 3½ years and an employee of the museum since 1979. He plans to write books on the history of Riverside and the citrus industry in Southern California …

**Timothy H. Nelson** is the first director of alumni affairs for Delta Tau Delta fraternity. He will focus on the training of alumni volunteers, reinvigorating existing or dormant alumni chapters and increasing long-term involvement in Delta Tau Delta. Tim and his wife, Candice, are the parents of a son and daughter and live in Frisco, Texas.

'96 **Jason Tani** has joined Merrill Lynch's Temecula office as a financial adviser after establishing his wealth-management practice in Orange County over the past decade. He moved his family back to the Inland Empire and closer to his UCR roots …
**Robert Vargas** passed the final licensing exam in June to become a licensed psychologist in California. He is working as a psychologist/case manager in Marin County.

'97 **Christine Kai** is a teacher in the Buena Park School District …

**E. John McGowan** has worked for Kaplan Test Prep & Admissions, since 2003 where he served as the Orange County Center director. Recently, he received a promotion to associate marketing director for the California region, where he is spearheading efforts to set up customized test prep programs (i.e. GMAT, LSAT, GRE, SAT) for

companies that encourage their employees to pursue advanced degrees. John is a member of the UCR Alumni Association awards committee and volunteers for various UCR student recruitment and career events. E-mail John at john.mcgowan@kaplan.com.

'99 **Kevin Boeve** is a senior investment associate, director of the national retail group and a director of the net-leased properties group in Marcus & Millichap's Ontario office. Kevin specializes in the sale of single-tenant net-leased properties throughout the United States. For three consecutive years, Kevin has earned three of the most prestigious awards given to Marcus & Millichap commercial real estate sales agents. In 2004, he earned membership in the company's Seven-Figure Club.

# '00s

'01 **Ryann Nieves** and **Kevin Lowe** ('99) participated in AIDS Life Cycle 2006, a 585-mile bicycle ride from San Francisco to Los Angles to raise money to help cure AIDS …
**Philip Perea** (M.S., '06 Ph.D.) received the Poe Award for Excellence in Physics when he completed his master's degree. He spent three years at the Fermi National Accelerator Laboratory in Chicago and represented UCR as the only American on a team of scientists studying high-energy particle physics …
**Bethany Phillips** was promoted to claims supervisor with Farmers Insurance in Oklahoma in May, after five years with the company.

'02 **Lorraine Anderson** participated in the UCLA White Coat Ceremony, an important event that marks the journey toward becoming a physician as a first-year medical student …
**Jamie Chandler** rejoined Keystone Pacific Property Management Inc., an Irvine-based property management firm, as district manager. Based in the firm's Temecula, Calif. office, Jamie will oversee existing and new development properties throughout the Inland Empire. She previously served as one of the company's new development community association managers for two years …
**Cherie Lamb** is in her last year of medical school at the Philadelphia College of Osteopathic Medicine in Pennsylvania. She'll graduate in June 2007 and complete a residency in internal medicine in either Florida or Arizona.

'03 **Jennifer (Isaacson) Soto** married Jeff Soto. They have a 1-year-old daughter and reside in Riverside. Jeff is an artist. He has published a book, "Potato Stamp Dreams"…
**Steve Stearns** ('05 M.Ed.) is a U.S. history teacher at Arlington High School in Riverside. He was one of 36 teachers nationwide to participate in an educational program titled, "We the People: The Citizens and the Constitution." Hundreds of history and government teachers nationwide applied and six were accepted from Riverside Unified School District. The program took place in August at Boston University through the Center for Civic Education. Teachers worked with constitutional scholars, attended lectures and learned teaching methods.

'05 **Crystal Harris** is playing professional basketball with the National Women's Basketball League team San Diego Siege. Crystal is excited to be working with veteran coach Fred Williams, who coached the WNBA's Charlotte Sting and Utah Starzz. She holds the amateur spot on the team and is averaging about seven minutes and three points per game. In her senior year at UCR, Crystal was the graduate assistant coach for the Highlanders.

'06 **Antonio Ortega** was selected as a member of Polanco Fellows by the California Latino Legislative Caucus Institute for Public Policy. The program provides leadership training and development for a select group of college graduates. The institute's goal is to develop the next generation of leaders who will help guide California as it navigates the public policy challenges of the new century.

## WE REMEMBER

### FACULTY AND STAFF

**Max E. Badgley**, a retired UCR entomologist and professional insect photographer whose pictures of bugs were published around the world, died in June at his home in Moreno Valley. He was 83.

Mr. Badgley served as chief quarantine officer in UCR's entomology department from 1969 until his retirement in the late 1980s, relatives and a former colleague said. His job was to help quarantine and study insects imported from overseas for agricultural-pest control.

He started chasing butterflies in his native Michigan and traveled with his camera to tropical forests in Borneo, Costa Rica and elsewhere to pursue and capture images of exotic insects. The World War II Navy veteran's photographs of pink hibiscus mealybugs and other insects were published by London's Natural History Museum, university magazines, the U.S. Department of Agriculture and other outlets.

He is survived by his wife, Paulette Davis; his children, Kim Jermain, of Moreno Valley, Linda Scott, of Ione, Calif., Bruce Badgley and Mark Badgley, both of Austin, Texas, and Brian Badgley, of Bakersfield, Calif.; six grandchildren; and seven great-grandchildren.

**Vernon M. Stern**, whose legacy is the invention of "integrated pest management," the central theme of applied entomology, died in March after a long illness. Stern served on the faculty in the Department of Entomology at UCR from 1956 until retirement in 1991.

Mr. Stern is known for his 1959 paper establishing the concept of integrated control, or using pesticides only when natural mortality agents fail and the pest population reaches a density that causes crop losses to exceed treatment costs. Mr. Stern's paper not only stressed integration of control strategies, but also created the concept of economic thresholds.

**William A. Farmer**, age 61, passed away in July in Sierra Madre, Calif., after a long battle with cancer. A native of Los Angeles, he graduated from UCR in 1967, majoring in mathematics.

Mr. Farmer was the founding chief engineer of the campus radio station KUCR 88.3 FM and was once photographed at the station's control board by Ansel Adams.

He is survived by his sister, Pat Ward, and her husband, Lloyd, of Plainview, Texas; nephews Clay Ward of Dallas and Cody Ward of Plainview and their wives; three great-nephews; and one great-niece.

### ALUMNI AND STUDENTS

'67 **Robert Reeves Gunther**, known for his geodesic home manufacturing business. May 2006

'72 **Patricia (Wilkinson) Wyborny**, coordinator of academic support services in the Office of Services for Students with Disabilities at UCR before she retired in 2001. April 2006

'72 **Roberta McPeters**, former presiding judge of San Bernardino County Superior Courts. May 2006

'74 **Janet Lee Hope**, vice president and district manager of the Santa Monica Residential Appraisal District for Bank of America. March 2006

'92 **Arya Moti**, an orthopedic surgeon in Tampa, Fla. August 2006

**Latosha Wallace**, a sociology/administrative studies major and a resident adviser in the Pan-African Themed Hall. September 2006

**Mark Hall**, a basketball player who transferred to UCR as a sociology major. September 2006

# Jennifer Bermingham

## Class of '09

**"I'd be a good lobbyist. I could take legislators out on the golf course and talk them into seeing things my way."**


**A UCR golfer takes a swing at education, a career and a way to make a difference.**

By Laurie Williams

From her vantage point at the front of UCR's women's golf team, 19-year-old **Jennifer Bermingham** can see herself turning pro someday. "But I have to get a degree under my belt first," she says. "That way, I'll have a plan B." Even if she turns out to be the best woman golfer this side of Annika Sorenstam, Jennifer reasons, she won't able to play professional golf her whole life.

She has another passion: political science. "I just always want to know what's going on in the world," she says. "My teammates tease me about it. They're just jealous because I know what's going on and they don't." A visit to Washington, D.C., in high school sparked her interest — seeing the sights and getting a feel for the history and traditions of how the government works.

Jennifer keeps a close watch on environmental issues, especially fighting pollution and finding alternative energy sources. "I'd be a good lobbyist," she says. "I could take legislators out on the golf course and talk them into seeing things my way."

For now, she says, life is great. UCR also recruited her best friend, **Allison Ek**. Once standout players at rival high schools, they're now roommates as well as teammates and spend at least four hours each day on the golf course. "What could be better?" she asks. "A lot of people would give anything for a life like mine."

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