An Eye to the Future

Graduate education gets a boost from College Doctoral Fellows program
A MESSAGE FROM THE DEAN

Training Tomorrow’s Scholars

one of the great pleasures of being dean of USC College is overseeing an amazing wealth of exciting scholarly research and teaching — and communicating this to our family of friends, alumni and supporters. The breadth of the College’s academic enterprise is truly astounding: about 6,000 undergraduates pursuing 80 majors and 50 minors; 300 master’s students; 1,200 doctoral students in 20 disciplines; and 500 tenured and tenure-track faculty conducting impactful fundamental research and expanding the boundaries of human knowledge.

When I describe this broad scope to our community of supporters, sometimes there is surprise. Most know that the College provides the core education for all USC undergraduates and that in recent years the quality of our incoming freshmen has improved dramatically. Not everyone knows that we have a vibrant cadre of graduate student-scholars in the arts and sciences disciplines.

The very best among them are designated College Doctoral Fellows, and our cover story profiles three splendid examples from the programs in history, marine biology and classics. I think you will agree that Sarah, Kwasi and Nicole have promising academic careers ahead and will be shining examples of the strength of our Ph.D. programs.

Doctoral education is extremely important for advancing our overall standing as a research college. The best institutions compete fiercely to recruit the brightest, most talented graduate students. “These future scholars come to work with faculty whose research they admire. Thus, when we are most successful, there is a circle of positive reinforcement strengthening all three of our basic missions: faculty research, doctoral training and undergraduate education.”

Renowned faculty help us attract wonderful graduate students — and vice versa. Productive faculty require graduate students to assist with their research, so they are excited about joining the USC College community. And this research-intensive environment contributes significantly to our innovative undergraduate curriculum by providing opportunities to make knowledge, not just acquire it. The truth is that we aspire to greatness on all these fronts: a liberal arts education that draws on our location in one of the world’s great cities as well as our global connections; Ph.D. programs that train the very best of the next generation of scholars; and a faculty that is producing the most important scholarly research in the world. Success with only one or two of these will not ensure our greatness. We intend to achieve nothing less than excellence in all three areas and take our place among the best research colleges in the world.

To this end, soon after I became dean, my administrative team announced important initiatives in each of these areas. They are outlined in the story below.

We have very ambitious goals — some might say too ambitious. I am convinced, however, that if we follow our vision with energy and optimism, we can propel USC College to the next level.

Deep success is largely dependent on your support and generosity, as evidenced by our Tradition & Innovation Initiative. We recently announced a revised goal of $500 million, which will help us achieve our lofty ambitions.

The many success stories in this magazine demonstrate that we are well on our way to success. Our linguistics and philosophy faculty who study language and mind are recognized as one of the premier groups in the world. Throughout the College, scholars are blazing new trails in their disciplines. Our majors receive phenomenal opportunities to work directly with distinguished researchers and prestigious local institutions such as the Getty Institute and the Natural History Museum.

There are too many wonderful stories to fit into a single magazine issue. I warmly welcome you to visit regularly the College Web site (college.usc.edu) to stay abreast of developments. There, every week you will find news stories and videos capturing the excitement of all we do.

Howard Gillman
Dean of USC College
Anna H. Bing Dean’s Chair

Building a Better College

Funding opportunities for USC College faculty, students and departments

SC College has unveiled four major initiatives aimed at advancing research and instruction at the university’s largest academic hub.

These programs promise to bolster faculty development, graduate student recruitment and placement, undergraduate research, and external research funding.

The initiatives detail policies and earmark significant funding for the activities of professors, students and departments.

“These initiatives represent first steps toward promoting even higher levels of excellence in undergraduate education, graduate training, and world-class research and scholarship,” said USC College Dean Howard Gillman.

Michael Quick, executive vice dean for academic affairs, said the goal is to become one of the great liberal arts colleges at a top research university.

“We can only get there by demanding and rewarding quality, quality in faculty scholarship, quality in recruitment and placement of graduate students, and quality in how we educate our undergraduates,” Quick said.

“To me, these initiatives put our money where our mouth is. The initiatives were announced Sept. 17-20 via a series of e-mail memoranda from Gillman and his administration. The memoranda were posted to the USC College Web site.

The first initiative, Next Level, focuses on faculty development. One component will match each new tenure-track assistant professor with a mentoring committee composed of at least two senior faculty members. After formulating a plan designed to set the new professor on the road to tenure, the committee will reconvene at least once a year to review progress and update the strategy.

Another element of Next Level focuses on associate professors interested in promotion to full professorship. They will produce written plans for achieving a scholarly profile worthy of promotion, and will steer any sabbatical time toward fulfilling their goal.

A third component offers non-tenure-track faculty the opportunity to pursue grants of up to $1,000 to enhance their scholarly profiles.

“Our faculty is the greatest resource the College has,” said Vice Dean Edwin McCann, who leads the College’s faculty affairs office. “So we’re asking members of our faculty community to help colleagues in our development. We also want to recognize the important role that non-tenure-track faculty play in instruction and research, and to do what we can to support their academic endeavors.”

The Catch and Release initiative for graduate programs was also unveiled.

The Catch component applies to graduate student recruitment. It provides grants of up to $5,000 to support departments’ new ideas for enhancing outreach to prospective students. The Release component is meant to improve the quality of placement of new Ph.D.s. Similarly, it offers funding of up to $5,000 for new and innovative programs designed to help doctoral graduates secure better jobs in research and academia.

Elinor Accampo, vice dean with responsibility for graduate programs, said that placement of students in first-rate universities and research institutes is her most important goal.

“Recruiting high quality, diverse graduate students is the first step,” she said. “The second is to continue developing excellent programming
Rising to the Occasion
Fundraising goal increases to $500 million

Early in the spring semester, USC College raised the goal of its ongoing Tradition & Innovation Initiative. The fundraising initiative, launched in September 2005, had an initial goal of $400 million.

The College community responded to that call for support, from USC trustees and College board members to alumni, parents, corporations, foundations and friends. Their acts of generosity have shattered College fundraising records each year. As of January 15, more than $374 million had been raised.

With two years remaining in the College’s largest fundraising initiative, USC College Dean Howard Gillman raised the goal to a total of $500 million.

Gillman, holder of the Anna H. Bing Dean’s Chair, explained that expanding the goal was essential to accelerating the College’s existing momentum and developing those areas that are central to the College’s rise to world prominence.

“Over the past decade, USC College has led the surge in the university’s overall reputation by attracting extraordinary undergraduates,” said Gillman. “Our commitment to offering an amazing and innovative undergraduate experience is fundamental and ongoing, and it requires continual investment.”

“But,” he added, “we are not nearly an undergraduate College. We are the academic heart of the university. USC can only become a world-class research university if USC College expands its already strong reputation for world-class research and scholarship, and for outstanding Ph.D. programs. And to do this we must raise our ambitions for the final phase of our fundraising initiative.”

The decision to move from a $400 million to a $500 million goal was announced at a College Board of Councilors meeting January 23.

“We have an opportunity to strengthen the academic foundation upon which this entire university depends,” said Patrick Haden (B.A., English, ’75), chairman of the fundraising initiative. “This elevated goal is about what the initiative will allow our College to do, for our students and faculty, for Southern Californians and for people far beyond our borders.”

During the next phase of the Tradition & Innovation Initiative, funds will be used to achieve excellence in all three areas that make up the core missions of USC College: innovative undergraduate education, outstanding graduate programs, and important research and scholarship.

In the realm of undergraduate education, the next phase of the initiative will focus on research funding and scholarships. The idea is to support additional opportunities for undergraduates to engage in cutting-edge research, global experiences and community engagement.

In order to bolster graduate programs, USC College also seeks to raise endowment funds for fellowships, research funding and travel stipends. Another important goal is to recruit and retain top faculty by establishing endowed chairs and professorships.

Fundraising goals for faculty research seek to upgrade and expand infrastructure in key areas like the sciences, where new laboratories, research space and buildings are critical to the College’s ability to keep pace with the technological advances that are redefining many aspects of scientific research. Support is also sought for the College’s interdisciplinary institutes and centers.

“The creativity, imagination and discoveries of students and faculty — that is the true magic of higher education,” said Gillman. “I am grateful that so many people believe in this great institution and have embraced our ambitions so far. If we all work together we can reach even more ambitious heights of excellence and influence.”

that not only realizes their potential in research skills and analytical thinking, but also equips them with the professional skills they need.”

For undergraduates, the Sophomore Opportunities for Academic Research initiative, or SOAR, aims to expand research opportunities. This program offers qualifying students the opportunity for one-on-one mentoring by faculty. The College provides $1,000 grants to cover the cost of student research under faculty guidance — research unrelated to the students’ coursework.

Vice Dean Steven Lamy, who oversees undergraduate programs, said the great German philosopher Immanuel Kant summed up this initiative’s ideology: “Have the courage to know.”

“We hope to instill students’ love for research and love for ideas,” Lamy said. “On our faculty, we have some of the best researchers in the world. We wanted to share that with our undergraduates, to increase the chances for kids to really see what research is about. And I think that will be a defining experience for their College careers.”

The final initiative benefits faculty research. Called Seedling and Seal-the-Deal, this two-part program is aimed at helping faculty who haven’t previously secured external research funding to do so for the first time.

“One component of USC College’s international status as a premier research college is the breadth of our faculty’s participation in externally funded research,” said Dani Byrd, vice dean with responsibility for research advancement.

Through the Seedling component, a new investigator could receive funding of up to $2,500 to start a project for which they will later seek external funding. The Seal-the-Deal element offers a research stipend of up to $3,000, or release from teaching one course, to new investigators whose proposals have received positive review but not yet been funded.

“This initiative will help introduce new faculty investigators to this process,” Byrd said. “And, I believe, further accelerate our trajectory of research excellence.”

— Wayne Lewis

Undergraduate research in USC College takes learning outside of the classroom. The SOAR initiative provides funding to encourage students to embark on faculty-mentored projects earlier in their academic careers.
Mind Your Language

‘Language and mind’ research flourishes at USC College

James Higginbotham, Distinguished Professor of Philosophy and Linguistics, stopped the rapid-fire, hunt-and-peck typing on his electric typewriter to answer a reporter’s question.

“The scholar of international repute had been asked to summarize Noam Chomsky’s theory of language and mind — a bit like asking someone to explain in a nutshell Einstein’s theory of relativity or Freud’s theory of the unconscious.

“The fact is that any healthy child can learn any language and with not very much exposure,” said the USC College chair of linguistics. “That’s an empirical fact. We want to know how this little cognitive miracle takes place.”

Pioneered by Chomsky in 1957, the modern study of language and mind investigates the human mind through a systematic analysis of how people produce and understand language.

In large part, it seeks to answer a fundamental question: How do we acquire our first language and communicate with one another without being expressly taught? Chomsky — the father of modern linguistics — was the first to declare that language emanates not from culture and learning but from biology.

To understand the complexities of language, cognitive scientists must understand how the brain works, how the body’s speech articulators participate, and how the body and mind interact.

In the College, research of language and mind is a growing interdisciplinary area, tapping all the sciences and humanities to answer these ancient queries.

In recent years, the College has gained a national reputation for its interdisciplinary collaborations stemming from Chomsky’s theory that an inborn mental endowment allows human beings to acquire, execute and understand language.

Higginbotham is among a growing community of renowned scholars in the College whose research has evolved, in many cases directly, from the Chomsky revolution.

Holder of the Linda MacDonald Half Chair in Philosophy, Higginbotham was a colleague of Chomsky’s for 13 years at the Massachusetts Institute of Technology (MIT).

“MIT became the center of this new subject and it’s now well represented here at the College,” said Higginbotham, a pre-eminent scholar of generative grammar and linguistic semantics.

The College faculty includes a number of Chomsky’s students, such as linguists Hagit Borer, Maria Luisa Zubizarreta and Barry Schein. Also Higginbotham’s student at MIT, Schein is an original designer of the College’s general education language and mind course.

Scott Soames, director of the School of Philosophy, who specializes in the philosophy of language and the history of analytical philosophy, earned his Ph.D. at MIT. There, he worked with Chomsky and became among the first scholars to combine theoretical linguistics with the philosophy of language.

“Naturally, as generation begets generation, the effort expands and there comes to be different kinds of views on the subject,” Higginbotham said. “[The language and mind endeavor at the College] can be looked at as an extension of that Chomsky revolution in linguistics.

Although, let’s be clear that not all of our scholars, especially behavioral scientists in the College, agree with all of Chomsky’s views.”

In the College, the cross-disciplinary research now taking place involves linguists, philosophers, psychologists, sociologists, and engineers.

One exciting collaboration brings together faculty and students from the College’s Department of Linguistics and the USC Viterbi School of Engineering.

In 2005 and 2006 the National Institutes of Health awarded two grants totaling over $4.5 million to support the research of Dani Byrd, professor of linguistics, and Sri Narayanan, Andrew J. Viterbi Professor in the Ming Hsieh Department of Electrical Engineering, who has joint appointments in linguistics, psychology and computer science.

Byrd, also College vice dean overseeing research, and Narayanan use real-time magnetic resonance imaging (MRI) of the human vocal tract to examine the role that linguistic structure plays in shaping the production of speech. Their team includes Professor Krishna Nayak and Ph.D. student Erik Breath, both of electrical engineering.

Their state-of-the-art imaging and signal processing examine language structured by the human brain as it is realized by the speech articulators in the mouth, and analyze the acoustic properties of the spoken words arriving at a listener’s ears.

“In order for language to work, it has to be made real; it has to be made public,” Byrd said. “It has to be made physical. And that’s why you can’t separate out the body. Because it’s these skilled body movements that provide that piece of the puzzle that enables
us to communicate with one another.

"We don't do it with ESP," she said. "There's no rigid dichotomy between mind and body. So there are philosophers and cognitive scientists who recognize that how we cognitively understand the world is not unrelated to how we physically exist in the world, and how we move in the world and act in the world.

"In order to understand language as a complex system, we have to know something about the parts, but more than that, we have to know how the parts interact."

Byrd is a scholar in the field of articulatory phonology — an approach to phonetics and phonology that attempts to show how the abstract structure of language interacts with the actual movements of the mouth.

As an undergraduate and master's student at Yale University, Byrd was a student of the articulatory phonology field's co-founder — Louis Goldstein. She was among those who helped recruit Goldstein to USC College from Yale in August 2007.

Goldstein, professor of linguistics, said that language and mind research at USC College has an outstanding national reputation.

"The kind of techniques that can be done here with respect to speech, the real-time MRI imaging — there's nowhere else in the world you can do that," Goldstein said in his office, where he keeps a large, framed photograph of Catherine Brownman, with whom he worked at Yale and Haskins Laboratories to develop the new field.

"I was naturally attracted to the technology, but in the end the people resources are much more important than technology," Goldstein said.

"There's a core group here to do really interesting work."

Goldstein's life work to date has been far more than "interesting." It has radically changed the principles of phonological theory.

In a soft-spoken, straightforward manner, Goldstein discussed the theory that he and Brownman proposed in 1986.

About 30 years earlier, in the 1950s, when scientists were first able to analyze sounds and physical movements associated with speech, they made an unexpected discovery that the physical description of speech bore little obvious relation to the linguists' description of speech as a sequence of symbols called phonemes.

"This apparent incompatibility naturally fell into the larger divide between mind and body, nice, cognitive categories — categories that said words are a sequence of symbolic units versus the messy facts of speech," Goldstein said.

Mid-century linguist Charles Hockett, who said speech was analogous to a row of brightly colored but unboiled Easter eggs, crystalized this theory. The act of producing a message on the part of a speaker involves smashing the eggs into bits, he said.

"That puts the person who is listening in the position of having to be Sherlock Holmes," Goldstein said.

"They have to look at the bits of eggshell and yolk and reconstruct what the sequence of eggs must have been to give rise to this mess on the floor."

Goldstein and Brownman refuted Hockett's theory. They argue that the cognitive and physical properties of speech systems, particularly regarding action in the motor system, are not independent of one another.

"In fact, if you know how to look at the actual physical substance of talking, then you actually see all of these phoneme-like component units of words," he said. "The discrete cognitive units are right in the body movements, if you know where to look. It's all seamless. They are not different systems at all."

Goldstein anticipates collaborating with College psycholinguist Toben Mintz, whose research investigates the methods infants use to acquire language.

"So far," said Mintz, associate professor of psychology and linguistics, "the studies have suggested that attending to harmony patterns and using harmony as a cue for detecting words in fluent speech might be an innate capacity shared by all infants."

Mintz, too, has a connection to Chomsky, although one generation removed. At the University of Rochester, Mintz was a student of acclaimed psycholinguist Thomas Bever, who was Chomsky's pupil at MIT.

MIT's reputation as the nerve center for linguistics gathered renewed momentum around the late 1970s, when Chomsky began lecturing on his soon-to-be published Lectures on Government and Binding: The Pisa Lectures, which introduced a new theory.

Later referred to as the Principles and Parameters Model, the theory represented a crucial change in the paradigm of syntax, and was a radical revision of Chomsky's earlier work.

Schein recalled arriving as a graduate student at MIT in 1978, precisely at this pivotal moment.

"It was a conceptual breakthrough and the study of language has never been the same," Schein said.

Chomsky and Higginbotham supervised Schein's dissertation, the foundation for his first book, Plural and Events (MIT Press, 1993). In it, Schein offers original theories about pluralities.

Since then Schein has contributed greatly to the semantics of plural expressions and the logic of plurals. But in his upcoming book, Conjunction Reduction Redux, he discusses the semantic meaning of the conjunction — sentences connected by the word "and."

All of this research has contributed to the growing reputation of the College's philosophy and linguistics departments. In the current Philosophical Gourmet Report, USC College ties for second among philosophy departments. Also called the Leiter Report, the publication ranks the nation's 110 graduate philosophy programs and categories within programs.

Higginbotham, former director of the School of Philosophy, said growth comes when scholars are willing to take chances in the creation of new knowledge. Scholars never know in advance which ideas will work and which ones will not.

"Werner Heisenberg devoted the last 20 years of his life to a program that failed," he said. "Einstein notoriously never solved the unified field theory problem. There are lots of other examples. The only thing certain in philosophy is that there will be another revolution."

—Pamela J. Johnson
Creating Miracles: Down to a Science

Rose Hills grant gives undergraduates with vision the chance to change the world


The world's first implantable retinal prosthesis — a wee intraocular camera stiffer than a Tic-Tac — has become Noelle Stiles' dedicated focus. Each day, Stiles is eager to work on developing the device that when implanted directly into the eyes of those rendered blind by certain diseases can restore partial sight.

"I want to use fundamental science and technology to make a difference in people's lives," Stiles said inside a lab at USC's Health Sciences campus. "It's hard not to have a real passion for this, frankly, given the people we're trying to help."

At 21, the USC College junior is amazingly well versed on the subject of retinal prostheses. She has been assisting in the design of the breakthrough device since before she left high school.

The biophysics major and neuroscience minor is conducting research with the USC team developing the first intraocular camera directly implantable in the eye. The interdisciplinary nature of the research gives the College student an opportunity to work with professors from many related disciplines in USC's College and professional schools.

She is working under the guidance of Armand R. Tanguay Jr., a professor of electrical engineering, chemical engineering and materials science, and biomedical engineering in the USC Viterbi School of Engineering, and a faculty member of the Neuroscience Graduate Program housed in the College.

"Noelle is pure enthusiasm," Tanguay said. "She's conducting Ph.D.-level research vital to the success of what we hope will become a crucial turning point for the blind. Noelle is so passionate about her research that last summer she often spent seven days a week in the lab. She is able to work independently in large part due to her Rose Hills Foundation fellowships."

Stiles is among 40 College undergraduates receiving research fellowships from the Rose Hills Foundation, a nonprofit organization aiding Southern California residents. In all, the foundation has donated $2.5 million to USC for undergraduate science and engineering research.

The foundation grant is benefiting many other professor-undegrad research teams working on momentous projects promising to impact the world.

College junior Sonya Hannon and her mentor, Lin Chen, associate professor of biological sciences in the College, are pinpointing the cause of a muscle disease called myasthenia gravis (MG). Their research is building the foundation that may lead to a successful treatment or cure.

In the fall of 2006, the foundation provided a $500,000 grant to cover the cost of a pilot program, and renewed the grant for four years in winter 2008.

College Dean Howard Gillman emphasized the importance of such grants. He said the Rose Hills program helps to advance the College's vision for the undergraduate experience, in which research — as much as general education or work in a major — builds over the course of a student's four-year career.

"This grant underscores the commitment of USC College to ensure that our undergraduates engage in important research and scholarship with our world-class faculty," Gillman said.

Gillman noted another new College initiative offering stipends for undergraduate research, Sophomore Opportunities for Academic Research (SOAR). In the SOAR program, qualified sophomores receive stipends to become researchers under the supervision of a faculty mentor. This new Rose Hills program builds on the undergraduate research momentum.

"Thinking hard about important problems, under the guidance of great scholars and researchers. Should be an essential part of an undergraduate education at a leading research college." — USC College Dean Howard Gillman

Eugene Bickers, vice provost for undergraduate programs and professor of physics in the College, agreed. He helps to implement the program and is Stiles' faculty adviser.

"Opportunities to engage in original research are now an essential part of undergraduate education," Bickers said. "We're excited that the Rose Hills program enables dozens of students to work with our best science and engineering faculty on frontier problems."

In Stiles' case, she was ahead of the game. While still in high school, she was recruited by Tanguay to join his research group. Tanguay hoped that the research exposure would encourage him to apply to USC. It worked. Stiles became so excited about the advanced research she was conducting at USC that she joined the Trojan Family.

But it took some persuading. Tanguay recalled attending the Orange County Science Fair with his daughter and seeing the same high school sophomore charge onto the stage again and again to retrieve another trophy.

The countywide contest involved hundreds of students, yet Tanguay was particularly impressed with the potest, then-16-year-old Stiles and
her award-winning science project. He struck up a conversation with Stiles’ father and asked whether his daughter might consider conducting research at USC. He said no.

“My father wanted me to go to Berkeley,” Stiles recalled. “I had my heart set on Caltech.”

All that changed after that science fair, and Stiles began conducting research with Tanguy’s team. Inside the W.M. Keck Foundation Center for Bioelectronics Research, Stiles explained the complex intricacies of the prosthesis with the ease of a seasoned scholar.

When attached to the retina — the layers of neural cells in the back of the eye that convert images into electrical impulses sent to the brain — the prosthesis can restore vision to those blinded by diseases such as macular degeneration and retinitis pigmentosa, she said.

In such diseases, the retina’s photoreceptor layer is destroyed, but the inner layers still work, and are able to respond to stimulation and transmit output signals to the brain’s visual cortex.

USC’s Dr. Mark Humayun developed the first retinal prosthesis years ago after his discovery that electrical stimulation of retinal nerve cells in the blind creates visual percepts. But the early prostheses were clunky. A tiny camera was attached to a pair of glasses, providing a video feed to an electrical stimulator array on the retina. People wearing the glasses had to move their heads in order to point the camera to where they were looking.

Firing directly into the eye, the new intraretinal camera provides sight through eye movement alone.

Prototypes under development are anticipated to undergo U.S. Food and Drug Administration human trials within the next few years. Stiles is quick to quote statistics that 9 million people in the United States suffer from some form of age-related macular degeneration alone, accounting for 54 percent of all blindness.

“This prosthesis ultimately may partially restore sight to millions of people,” Stiles said. “I’m thrilled to be part of this research.”

To date, Stiles’ portion of the research has been presented at seven international conferences. The undergrad recently won an Optical Society of America Student Presentation Award — an honor created to recognize exceptional research of graduate students. Of 140 nominees, 16 won awards. She was the sole undergraduarate.

“But no one and award can compare with being present when the first blind person is implanted with our camera, looks up at us, and smiles,” Stiles said.

The most common symptom is droopy eyelids, but the disease can progress to more severe limb weakness and respiratory distress, which can be fatal. The causes of MG are not exactly known and there are no direct therapies. Scientists do know that MG is an autoimmune disease in which the body’s own antibodies mis-

antibodies to nAChR in those who have MG.

“When you think that what you’re doing may help people who are suffering, it’s very motivating,” Hanson said inside Chen’s lab at Ray R. Irani Hall. “I’m very lucky to be able to work in the Chen lab on a project that could have a major impact on both human knowledge and human life.”

Hanson’s Rose Hills Fellowship enabled her to spend the entire summer of 2007 in Chen’s lab. She continued the same research in the fall and spring with the help of USC Women in Science and Engineering grants.

“The get many undergraduate students knocking on our door to work with us,” Chen said. “And Sonya has been a shining star. She’s not walking around the lab, seeing what’s happening. She’s an integral part of the research component.”

Hanson, 20, a biophysics major and screenwriting minor, said her research in Chen’s lab has been an invaluable personal and scholarly experience.

“My relationship with science has changed drastically,” Hanson said.

“With my increased exposure to the process of science, I’ve stopped being intimidated by even the most complex phenomena. I’m convinced that if someone once took the time and energy to figure it out, the least I can do is learn about it — and maybe, eventually find out something completely new and contribute to the advancement of science.”

—Pamela J. Johnson
An Eye to the Future

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Doctoral Fellows program was established three years ago. In the program, fellows receive five full years of support — two years of fellowship and three years of teaching or research assistantship — as well as a summer stipend and a research budget.

The program is designed to compete with other major institutions and persuade promising prospective students that the College is the place for them.

“If we’re going to attract the best students in the country, we need to compete economically,” said Accampo, a professor and former chair of history.

“The dollar amount of our fellows is competitive with the best programs in the United States,” echoed Mark Todd, the College’s associate dean for graduate programs. “It’s all part of a deliberate mandate to focus on graduate education. We’re hiring the best faculty and giving the best graduate students opportunities to be on the cutting edge of research and to advance their careers.”

The fellowship aims to prepare students for the professoriate. Fellows collaborate to organize Inside the Academics Studio, a themed speaker series featuring College faculty from across the disciplines. Other fellows participate in recruitment activities, helping to bring more top-rate graduate students to USC.

The program comprises a community of scholars that crosses the traditional lines between disciplines. They meet a few times a semester with Accampo and Todd — a chance to get to know one another, as well as to provide valuable feedback about how they’re doing and what the College can do to better support its graduate students.

“Communication with graduate students is one of our most important priorities,” Accampo said. “When graduate students enter USC, they are not only well funded, but they become part of a community. We care about the quality of their everyday lives as well as about their intellectual growth.

As of the spring there were 29 College Doctoral Fellows, all first- and second-year students, and another class was being recruited. Here’s a look into the lives of three of the fellows — a snapshot of the future of academe.

Sound Affects

Bay Area native Sarah Keyes always had a passion for history, nurtured by the family vacations of her childhood when her parents took her and her brother to national monuments and historical sites.

One particular trip crystallized her interest in learning about the past.

“We stopped at Chaco Canyon, a site of pueblo ruins,” she said of her trip at age 8. “It was the first time I really felt that California and the Southwest had this ancient history that wasn’t present in our everyday lives the way, say, Bostonians have the Freedom Trail. That was the moment I knew I was interested in not only society here and now, but the societies that came before.”

Now a second-year doctoral student in the College’s history department, Keyes is producing an award-winning dissertation on the American West.

In February she earned the Organization of American Historians’ 2008 Louis Pelzer Memorial Award, recognizing the best essay of the year in U.S. history by a graduate student. Her paper examining the Overland Trail diaries took a novel approach based in a burgeoning field — the history of the senses.

In this case, sound. Keyes said that no particular group dominated the trail, and whether the settlers felt powerful or nervous depended heavily upon their auditory experience.

“They were really concerned because they were hearing all these new and frightening sounds in the environment,” said Keyes, who earned her bachelor’s in history from Pomona College. “Wolves howling at night instead of fire cracking. There was a trumped-up fear of the Indian war whoop. There were gigantic thunderstorms on the prairies, with no cover other than their wagons topped with cloths.

Keyes’ paper will be published in the Journal of American History, the leading journal in the field, in spring 2009.

She had access to primary sources for her article thanks to USC’s partnership with the Huntington Library, which maintains an extensive collection on the American West.

The prospect of working with William Deverell, director of the Huntington- USC Institute on California and the West, first interested Keyes in USC College. She was excited about working at the Huntington with a leading scholar in the field.

“At USC there are so many great resources both on campus and in the greater Los Angeles area,” she said. “It’s exciting to have access to a major institution like the Huntington.”

KwesiConnor, a doctoral student in marine environmental biology, is learning cutting-edge molecular techniques to study the physiology of Mytilus californianus. Connor originally pursued a career as an accountant before his love for the sciences blossomed.

organize the 2007-08 Inside the Academics Studio series, which examined the topic of disaster.

“Having these professional opportunities is great,” she said. “When you go onto the job market, you can say, ‘I have been involved in these things. When I work at your institution I can put together something like this.’ It’s incredibly important.”

Mussel Work

Career opportunities meant something distinctly different for Kwesi Connor when he was an undergraduate at Atlanta’s Morehouse College. Accounting was a practical choice. But after a few years Connor was lured back to school by a desire to teach high school science. Starting with a few postbacalauréate courses then a job as a lab technician, his lifelong love of science blossomed.

Now a second-year student in the College’s marine environmental biology program, Connor earned a master’s degree in biology from California State University, Los Angeles, where he studied the ecology of Mytilus californianus, mussels of the Pacific coast.

There, he caught the research bug.

“I think everyone wants to be an investigator,” said the Bronx native who attended high school in Pasadena, Calif. “Secretly, deep inside, everyone wants to figure out who did it — or how was it done, in my case. You get to bring everything you’ve ever learned into your research, in trying to put together the clues to the mysteries you’re trying to solve.”

Wanting to further investigate the biology of mussels, Connor sought out doctoral programs in marine environmental biology. He found that the laboratory of Andrew Gracey, assistant professor of biological sciences in the College, was a perfect fit. At USC Connor could augment his previous insights into the ecology of mussels by delving into their physiology using groundbreaking techniques.
"I've picked up a whole new set of skills in the molecular realm, analyzing DNA and proteins," Connor said. "Using molecular techniques in marine science is a fairly new area, and I'm just happy to be a part of this growing branch of biology."

In the Gracey lab Connor and his colleagues look at how mussels adapt to environmental stress, such as the anticipated results of climate change. The bivalves are ideal for such research because their temperatures reflect that of their surroundings, so they serve as an indicator of changes around them. Furthermore, mussels are a keystone species — their important place in the food chain means a mussel die-out would have grave implications for coastal biodiversity.

Connor touted the collaborative nature of this lab work. "Science is not individualistic," he noted. "My success is hinged upon help from my colleagues and my advisor."

The research under way was USC's main draw for Connor, but the College Doctoral Fellowship clinched the deal.

"Funding is an essentially important aspect," he said. "It's always a stress reliever when you have funding coming in. I'm appreciative that I was chosen for this fellowship."

He looks forward to taking on the dual role of the professor — researcher and teacher. "I like teaching science because it's so remarkable, and many people are not aware of how remarkable it is," Connor said. "So I enjoy the fact that I'm the one who gets to introduce people into this very exciting world and witness their responses."

Growing up in the suburbs of San Jose, Calif., the daughter of an Italian father and a Peruvian mother, Giannella was perhaps primed for her field early on. As a child she often visited family in Italy. During those summer trips, she saw monuments and ruins. But she equally credits the cross-cultural experience of her upbringing for inspiring her interest in classics.

"Seeing how culture is developed through history and immigration led me to try to understand, naively, the Western beginnings of that process," she said. "I thought, 'I'll start at the beginning, with Greece and Rome.'"

"But then I think I never left Greece and Rome," she said, laughing.

Giannella plans to continue focusing her scholarly work on how ostensibly modern issues — immigration, political instability, labor rights struggles — manifested in ancient Rome, as a way to better understand today's world.

The interdisciplinary nature of Giannella's research drew her to the College's classics department, which embraces a broad-scope approach to the field.

"The classics department has an overarching take on material culture, literature, art and philosophy," she said. "The faculty incorporate a lot of interdisciplinary approaches, and there's so much exchange with other departments. I've interacted with social psychologists, philosophers and political science in carrying out my research."}

Active in both her department and the fellow program, she helped organize a workshop for classics students to learn how to publish scholarly papers. The spring workshop featured classics chair Thomas Habinick. She's also helping set up regular College Doctoral Fellow gatherings.

"Hearing people from different disciplines is necessary and helpful to your own studies," she said. "Listening to someone in the history department or even someone from the sciences can often spark an interest in your own research. Graduate school is large, and I really value being part of a smaller community."

— Wayne Lewis

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USC College Alumnus Wins Asa V. Call Award

SEC chair earns USC's highest honor for alumni accomplishment

When considering whether one person can change the world, USC College alumnus Christopher Cox is a firm believer in the butterfly effect.

The phrase refers to the notion that the beating of a butterfly’s wings can create tiny changes in the atmosphere ultimately causing a tornado.

“You can apply the same theory to human behavior,” said Cox from his office in Washington, D.C., where he is chairman of the U.S. Securities and Exchange Commission (SEC). “The work that each of us does in our daily lives can have a profound effect on making the world a better and more peaceful place.”

Cox, who earned his bachelor’s degree magna cum laude in English and political science in 1973, embodies the virtues — character, success, altruism and leadership — of an outstanding Trojan.

In April the USC Alumni Association honored Cox with the Asa V. Call Achievement Award, the university’s highest honor for alumni accomplishment.

The award recognizes alumni who have demonstrated “exceptional commitment to the university and community by giving generously of their time, energy and leadership.”

“Christopher Cox has certainly brought great honor to USC, and is truly an exemplary member of the Trojan Family,” USC President Steven B. Sample said during the awards ceremony April 4 at the Millennium Biltmore Hotel in downtown Los Angeles.

“Throughout his distinguished career in the White House, Congress and now the United States Securities and Exchange Commission, Chairman Cox has proven himself to be a dynamic and insightful leader of unwavering integrity,” said Scott Mory, associate senior vice president for alumni relations.

Cox, a second-generation Trojan, called the award “humbling beyond words.”

“To be placed by my university in the company of such extraordinary alumni as Neil Armstrong, Marilyn Horne, Pat Haden, John Wayne and so many others who have done so much for our nation and our world,” he said, “is a great honor.”

While an undergraduate in the College, Cox displayed the drive and enthusiasm that would carry him through Harvard Business School and Harvard Law School, and eventually lead to his becoming the 28th chairman of the SEC, with unanimous Senate approval.

Upon his arrival at USC College, Cox was impressed with the breadth of course offerings.

“It was like being a kid in a candy store,” he said. “I had visions of being a mathematics major, a philosophy major, an English major, an international relations major — and a half-dozen others.”

He realized that if he spread himself too thin, he might not accumulate enough credits in any single subject to satisfy one major. So he doubled his course credits, carrying 20 to 25 credits each semester, and attended summer school after his sophomore year.

In the end, he completed the requirements for two majors and graduated with honors a year early.

Despite his accelerated pace, he found time to establish lifelong friendships.

“Looking back after 35 years, what’s most remarkable about my time at USC is the strength of the personal bonds,” he said. “Against all odds, the closest friends I’ve formed in my entire lifetime come from the three-year period I spent as an undergraduate at USC.”

He also fondly remembers his professors from vastly different disciplines.

“It has always struck me that 17th century English prose and poetry would not be constantly fluttering about in my head if it were not for Professor Mary Mahl, for whom the subject was transporting,” he said.

He still remembers international relations lectures with Rodger Swearingen and Paul Hadley, and had high praise for Carl Christol, who taught Cox constitutional law.

“[Christol’s] undergraduate course was every bit as good as the ones I had at Harvard Law School,” he said.

“In a way, far better. His enthusiasm for the topic and for teaching gave me the spark to pursue the subject.”

After Harvard Law, Cox became a partner with a large firm, taught at Harvard Business School and started his own company, Context Corporation, which published the English translation of the Soviet Union’s daily newspaper, Pravda. He didn’t get into politics until age 35, when President Reagan hired him as one of his White House counselors.

“But even then,” he said, “I didn’t have the furthest thought of running for office myself. My 22-year career in Washington has surprised no one more than me.”

Since being sworn in as SEC chairman in August 2005, Cox has aggressively cracked down on such market abuses as hedge fund insider trading, stock options backdating and Internet securities scams. In an era of global capital markets, he has been at the forefront in the international effort to integrate domestic and overseas regulations.

He has also been a staunch advocate on behalf of individual investors, has called upon the mutual fund industry to provide clear investor information, and has been vigilant in protecting elderly investors from fraud.

Before his SEC appointment by President George W. Bush, Cox served in the U.S. Congress for 17 years, representing what is now California’s 48th congressional district in Orange County.

Cox encouraged USC students to “work hard and drink up every drop of learning that’s available.”

“Following your dreams starts with expanding the field of subjects you’re capable of dreaming about,” he said.

The future will “depend upon people who are even now dreaming about subjects such as biomedical imaging, preventing urban terrorism and nanocomputing,” he said.

“Discovering your dream, and then getting serious about what it takes to achieve it, is what your time at USC should be all about.”

— Pamela J. Johnson
They’re Earning; They’re Learning
Students experience real-world learning — and make money

Many students need extra money to pay bills or cover the cost of books and meals. Anita Rai was no exception.

When the then-USC College freshman learned she could conduct research at the Natural History Museum of Los Angeles County, and get paid for it, she jumped at the chance.

"This is so much better than sitting in an office answering phones," the 22-year-old senior said, climbing a ladder inside the museum’s basement vault, where she sorted collections of crustaceans, echinoderms and mollusks stored in various-sized jars.

“My work at the museum also gives me an opportunity to connect with institutions in my community in a profound way,” she said.

Rai works in the museum’s crustacea division, where her job also teaches the principles of biological systematics, giving her hands-on lessons of the evolutionary history of life on Earth that she might not receive from classes alone.

Located in Exposition Park, the museum is an igneous stone’s throw from the University Park campus.

"With this job, I can walk across the street from campus and be paid to do science-based work," Rai said.

"And since I’m a biology major, this job actually enriches my education."

Currently, the museum employs 10 USC students through the federal work-study program — a financial aid program in which employers can use federal funding to hire students.

Work-study jobs are typically on campus, but there are off-campus opportunities at many other prominent nonprofit institutions and organizations such as the California Science Center Foundation, the California African American Museum, the USC Hillel Jewish Center and the Hispanic Scholarship Fund.

Located in a major metropolitan center of culture, politics and economics, USC College can offer real-world learning experiences in a variety of world-class institutions.

The Natural History Museum is a major research institution where students are paid to work and learn. Founded in 1913, the museum is a national leader in research, exhibition and education. It’s the largest museum in the western United States, with collections including 35 million specimens and artifacts, some as old as 4.5 billion years.

Research is conducted in fields from archaeology to mineralogy, and from malacology (the study of mollusks) to vertebrate palaeontology. Work-study students also have jobs in other museum departments such as human resources, education or marketing.

"USC College will never be an ivory-tower experience," College Dean Howard Gillman said. "All our students benefit by engaging the community, and that includes taking advantage of our partnerships with our city’s great cultural institutions.

"These expanded opportunities for student learning and inquiry are part of the reason why USC College attracts such an amazing group of undergraduates."

At the museum, Rai wore rubber gloves and carefully pinched with forceps a sponge specimen from a large jar and placed it into a small plastic tube. She was handling *Theleia rubiginosa*, one of 5,000 known modern species of sponges. The sample had been collected in Ensenada in Baja California during a 1936 expedition.

A researcher in Mazatlán writing a paper about marine life along the Mexican coast had asked to borrow a piece of the rare sample. Rai was extracting a small yet precious piece to be delivered by hand to Tucson, Ariz., then picked up and taken to Mazatlán.

"It’s a good feeling to know that we’re helping researchers and professors from all over the world develop new knowledge about marine life," Rai said.

"Mainly, students in the crustacea division sort incoming marine life — usually crabs, lobsters, shrimps and isopods — gathered from expeditions."

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‘Beautiful Minds’ Conclude First Fridays Series

On the first Friday of each month during the academic year, the Natural History Museum of Los Angeles County stays open late for an evening of dinner, discussion and music.

Organized and moderated by neuroscientist Michael Quick, USC College executive vice dean, this year’s First Fridays series takes as its theme “Discovery in the Age of Mammals: Building Brains and Making Minds.”

The series celebrates the complexities of the brain, how it allows mammals to express themselves and what its evolution can teach us.

Each evening begins at 5:30 p.m. with a curator-guided gallery tour, followed by a forum led by distinguished scientists, conservationists and authors. A live band plays from 8 p.m. until 10 p.m.

Admission is free for museum members. For the general public, tickets are $9 for adults, $6.50 for students and children ages 13 through 17, and $5 for children ages 5 through 12. Advance tickets are sold via Ticketweb.com.

On June 6, the forum is titled “Beautiful Minds: The Parallel Evolution of Apes and Dolphins and What It Means for Human Origins.”

Quick will interview Craig Stanford, professor of anthropology and biological sciences, and co-director of the Jane Goodall Research Center in the College.

For more information, visit www.nhm.org or call (213) 763-3466.
Working with the museum’s experienced researchers, students group and categorize organisms by species — a monumental task given the great diversity of marine life. Students analyze the life forms under microscopes and in some cases establish their DNA sequence. They also review literature, some dating back more than 100 years. At times they discover a new species and name it.

They place the specimens in alcohol-filled jars, then label and store them. Finally they enter information about each specimen into a computerized database.

College alumni who participated in the museum’s work-study program credit the real-world experience for helping them to obtain work once they graduated.

Jennifer McCord, 22, worked at the museum her entire undergraduate career as an environmental studies major. Mentoring in international relations, she graduated in December 2006.

After graduation she returned home to Soldotna, Alaska, and was hired by the Kenai Watershed Forum, a nonprofit organization dedicated to maintaining water quality on the Kenai Peninsula.

"The database skills I learned at the museum were the reason they hired me," she said. "The hands-on experience really added to my education because it was so different from what I was doing in the classroom."

In a biology class, she did learn DNA sequencing. "But we didn’t get to use actual DNA," McCord said. "At the museum, we were doing it for real and the data were actually being published." Like many students, McCord learned about the opportunity at an annual job fair for students that this year will be held August 21 in the Von KleinSmid Center courtyard.

McCord was grateful for the experience for other reasons, too. "Coming from Alaska, I really missed home," she said. "The down-to-earth scientists I worked with every week were almost like having a family."

Regina Wetzer, director of the museum’s Marine Biodiversity Processing Center and research scientist in the crustacea division, said she cherishes the students and their help. "They are wonderfully energetic and bright students," said Wetzer, also an adjunct professor in the College. "I don’t know how we would function without them."

— Pamela J. Johnson

Skills for Life

Alumni talk about undergraduate research in psychology honors program

What do a psychologist in the Pacific Northwest, a human resources executive in L.A. and a promotions supervisor for a wine retailer in New York City have in common?

They’re all Trojans who participated in the undergraduate honors program offered by USC College’s psychology department. And they all describe the program as a formative experience that helped prepare them for jobs in their respective fields.

The program challenges top psychology students to work closely with faculty and produce original research for a senior honors thesis. Topics of study vary across the range of psychology faculty specialties — from examining family conflict to probing social stereotypes to analyzing brain images. Some students also collaborate with faculty in the USC Gould School of Law or the USC Marshall School of Business who hold joint appointments in psychology.

These undergraduates provide important assistance to professors, in return receiving mentorship and learning research skills.

"It’s a real hands-on experience," said Jo Ann Farver, a developmental psychology faculty member who has directed the honors program since 1997. "The university has always wanted to get students involved with research, having that on-one experience with faculty. And I think that’s irreplaceable."

Recently Farver sought to evaluate student outcomes and conducted a survey of alumni. The response has been overwhelmingly positive — and enthusiastic.

"Basically, what they’re saying is ‘I learned how to think,’" said Farver, associate professor of psychology. "Or ‘I learned how to do research,’ and ‘When I went to do my M.A. thesis I realized it’s just a bigger version of what I did in the honors program.’"

Christopher Graver, a 1998 graduate who went on to get a Ph.D. from the University of Oregon, agreed that the program is perfect preparation for advanced study in psychology.

"It was absolutely critical for where I am," said Graver, a neuropsychologist researching Alzheimer’s disease at Madigan Army Medical Center in Tacoma, Wash. His honors thesis investigating physiological signs of posttraumatic stress disorder earned him a Research Scholar Award from the Golden Key National Honor Society.

Graver said that the skills he
leaves were essential to success in his doctoral studies. “When I got to graduate school, I was ready to hit the ground running,” he said. “I was ready when I got there to go on to other projects rather than starting at the basics.”

He added that the program was also invaluable for getting me letters of recommendation — a must for any applicant seeking admission to competitive graduate schools.

Another honor student, Anne Morow, pursued a doctorate in developmental psychology at Claremont Graduate University after graduating from USC in 1997. Morow worked with eating disorder patients as a psychotherapist at L.A.’s Wright Institute until a couple of years ago, when she decided to devote her time to being a stay-at-home mom and returned to her native Seattle. She plans to launch a private practice in the future.

“Because of everything I know about child development, I can’t stand the thought of missing out on any piece of my child’s development right now,” Morow said.

Morow called USC College’s undergrad psycho honors track “a great preparation to go into any Ph.D. program.”

“It really was like being in a graduate school seminar,” she said. “I went into graduate school more confident, knowing what I was doing, understanding the process. I just feel like it sparked my love of research in general, and that’s something I always want to continue with in my career.”

Farver was quick to note that the honors program, which requires that students have a 3.5 GPA, isn’t the only option for psychology majors interested in research opportunities.

In fact, every psychology major takes a required research methods course in which they complete a project over the course of the semester. In their spare time, many students choose to assist faculty with research. Some psychology students are getting involved in research as early as sophomore year, thanks to the College’s new initiative to fund undergraduate research, Sophomore Opportunities for Academic Research. Farver hopes this will be a stepping stone to participation in the honors program and other research opportunities with psychology faculty.

Margaret Gatz, professor and chair of psychology, said, “We really believe in involving undergraduates in research. There are undergraduates in almost all the faculty labs, and honors projects often emerge from work that students have been doing already with faculty.”

But what of the students who don’t choose careers in psychology research? It turns out that many credit the program with instilling lessons and skills relevant to other careers, and to life in general.

“It taught me project management, how to get out of my shell and be much more assertive,” said Sonia Narang, a 1999 graduate who works in human resources at the Disney-ABC Television Group in Burbank, planning change management for an organization that includes more than 15,000 employees.

Most important, Narang said, “I learned that when you’re passionate about something, you can do anything.”

At USC she conducted research under Farver’s tutelage about cross-cultural conflict between immigrant parents from India and their U.S.-raised children. The study broke ground — very little investigation of this type had been done with Indian families — ultimately seeing print in the peer-reviewed Journal of Family Psychology.

“Publishing was one of the most exciting moments of my career,” Narang said. After her baccalaureate, she earned an M.A. in organizational psychology from Columbia University. The L.A. native believes that the hard work she did on her honors thesis primed her for the cross-country move, her first real time away from home.

“I had to hustle to get the study done, just to gather the data,” Narang said. “I feel like it actually helped prepare me for the jungle of New York City. When you’re in school, everything’s kind of given to you. And when you leave school, you have to start working for it. So this was a good sneak preview of what lay ahead.”

And preparing students for life after graduation, whatever their career path, is part of the point.

“What I’m trying to do is help students learn to think critically, because we’re in an information explosion,” Farver said. “They’re going to have to be able to sift through all this information and know what they can trust. The research experience helps them think about how we know things and how we test ideas.”

Michael Quick, the College’s executive vice dean for academic affairs, echoed this sentiment.

“USC College is on its way to being a leading liberal arts college inside a major research university. That means giving our students the opportunity to work with our world-class faculty, to do research and create new knowledge,” Quick said.

“But even if the research experience doesn’t transform the world, it will certainly transform our students. They learn to identify a problem, to entertain ways to solve that problem and to put their results in the context of what is known and yet to be known. That’s a process we all use every day, whether we’re doctors, lawyers, entrepreneurs or psychologists — any circumstance we encounter.”

Deannah Kim, a transfer to USC who graduated in 1998, attested that the research experience “is something I’ve carried with me in just everything, every approach I take.”

Kim completed a study about social perception and stereotype formation for her senior thesis, a process that was a cornerstone of her undergraduate education.

“I did my freshman year at Berkeley, where there are a lot of students and you can barely get any contact with the faculty member,” Kim said. “When I look back at my years at USC, I define them by the honors program. During those formative years, it’s so nice to have an expert that you can rely on to guide you through developing your critical thinking skills. I feel like every student should do it if they can.”

She stayed at USC College to complete an M.A. in psychology, but even as she pursued graduate study, she knew that her true aspirations lay elsewhere — the world of food.

Switching tracks, Kim attended the Culinary Institute of America on a full scholarship and settled in New York City. After a stint with Fine Cooking magazine, she recently joined a wine retail endeavor, Millésime, where she serves as supervisor of promotions and operations. She works closely with a Master of Wine, an elite title held by only 26 people in the U.S. and about 250 internationally.

“It’s all kind of related, all the stuff I did back in school,” Kim said. “I never thought that I would be doing surveys again, and I am. You never know where life takes you.”

— Wayne Lewis
A board one of two buses carrying his nearly 60 undergraduate students to Lancaster, Edward Rhodes peered out the window at the looming, charcoal-blue clouds and cringed.

Rhodes was taking his entire Astronomy 100 class to Los Angeles County's high desert. There, the professor of astronomy in USC College hoped his students could view the total lunar eclipse without the obstruction of haze and city lights.

Now his plan was in jeopardy. One thought kept swirling in his mind during the 74-mile trip from USC.

"It better clear up, it better clear up, it better clear up," Rhodes recounted thinking, after the group arrived at Antelope Valley College in Lancaster and students began taking turns observing the eclipse through telescopes.

"This is fantastic," Rhodes said with relief during the Feb. 20 excursion. "I'm just so happy that the sky is crystal clear."

Beginning at 7:01 p.m., Rhodes and his students watched the moon slowly go from alabaster-white to ash-gray to a fiery red-orange. Bundled in scarves, mittens, down jackets and knit caps, the students braved the 30-degree chill to see the celestial spectacle.

"This is to see up close and in person exactly what we've been learning about," said Kendall Williams, a freshman majoring in international relations in the College, adding, "I'm from Chicago, so I don't really mind the cold."

"I've never seen a lunar eclipse before, except on the news," said Steven Lia, a sociology major in the College. "This is something I would never take the time to do on my own."

During the eclipse, Rhodes reminded the students that the eclipse phenomenon occurs only when the sun, Earth and moon are perfectly aligned.

The moon must be full. When the moon moves through the darkest portion of the Earth's shadow, the umbra, a total eclipse takes place.

The refraction of sunlight through a thick layer of the Earth's atmosphere, Rhodes said, causes the moon to turn crimson.

The eclipse also came with a rare bonus. Rhodes pointed out to the students the planet Saturn and the bright bluish star Regulus, which that night formed a broad triangle with the moon's blushing disk. Rhodes also pointed out Mars, which that night was located almost exactly at the students' zenith.

After about an hour, Rhodes announced that the total phase was over and the moon would now slowly become brighter as it moved through the lighter portion of the Earth's shadow, the penumbra.

"I never expected that I would be so excited about a lunar eclipse," said Blysleigh Jones, a business major. "It's so much more rewarding watching it through a telescope than seeing it on a computer or TV screen. Dr. Rhodes made it all come to life."

Rhodes believes such off-campus learning experiences are an important part of a student's education. During a total lunar eclipse in August, Rhodes took his Astronomy 400 class to Mount Wilson Observatory, where USC astronomers have operated a 60-foot solar tower telescope since 1987. There, in the middle of a serene night, the young astronomers lay on their backs on a grassy peak in the San Gabriel Mountains near Pasadena and watched the sky show.

Nearby, Mount Wilson Observatory Association volunteers Matthew Oso and Tom Meneghini helped Rhodes attach his Canon cameras to the observatory's 16-inch Meade LX-200 telescope. Other students watched the eclipse unfold on computer screens beneath the telescope.

The team took digital and film images of the eclipse and created a movie, condensing the two-and-a-half-hour sequence of the moon passing through the Earth's shadow into a 70-second clip. They stayed until after 5 a.m. to get the awe-inspiring images.

Rhodes uses the movie as a teaching tool when explaining lunar eclipses.

"Before this, there were only static drawings, artistic sketches or animation simulations to show students during lessons on lunar eclipses," Rhodes said. "Now we have the real thing."

Rhodes' main livelihood is all things solar. A pioneer in the field of helioseismology—the study of the sun's internal structure—he is collecting data about sunspots during a complete 22-year solar cycle. Understanding these complex solar oscillation patterns will someday enable scientists to predict where and when sunspots occur and how that affects the Earth's climate.

He jumped at the chance to show his students the August eclipse—the first total lunar eclipse visible to North Americans in three years—then the February eclipse, the last one until December 2010.

After 29 years as a USC College astronomer, Rhodes still has the enthusiasm of a young apprentice.

"After all these years, I still find both majesty and mystery in the universe," Rhodes said. "Every time I look at the sky, I want to share that sense of awe with my students."

Juan Lora, a 20-year-old junior who participated in the August trip to Mount Wilson, feels that sense of awe. An astronomy major, he was inspired when watching the eclipse from the same observatory where Edwin Hubble discovered new galaxies in the 1920s.

Lora said the August excursion made him feel better appreciate not only the science of an eclipse but also its beauty.

"The experience of witnessing the lunar eclipse from an observatory and actually spending the time to watch the whole thing happen reinforced my position on astronomy," Lora said. "This is something I really want to do."

—Pamela J. Johnson

There's more to the story... USC College News expands our coverage with video content on the Web. To view an animation of the lunar eclipse narrated by Rhodes, go to college.usc.edu/mag/rohdels/
Good Sport
Sociologist picks up awards while building a legacy

Listening to a lecture by Professor Michael Messner, students learn there is more to sports than winning and losing. The playing field also presents an important reflection on society.

For more than 20 years, Messner, a sociology and gender studies professor in USC College, has focused his research on gender and sports.

He examines how sports re-create inequalities between men and women, how sports sometimes exacerbate race relations rather than improve them, and how violence is celebrated in sports.

"I try to convey to people that sports can be a location where people can enjoy themselves, but it's not separate from real life," Messner said.

Last fall the North American Society for the Sociology of Sport (NASASS) recognized Messner's decades-long contribution with the Distinguished Service Award, the society's highest honor.

Six of his former students nominated him and presented the award at the annual NASASS meeting. In the nomination letter, they wrote, "The accomplishments of his students are testimony to his mentorship and his influence on up-and-coming scholars in the field. His students contribute to the field of the sociology of sport well after they graduate and are another extension of Messner's invaluable contributions to NASASS and to the field of sociology of sport."

Messner was surprised by the honor and recalled of receiving the award, "I really couldn't concentrate on what my former student, who had nominated me, was saying because I was just looking at my students all standing up there and thinking, 'This is so nice to see them up there for me.'"

Talking about his former students, he said, "I've gotten to an age now where, like a parent whose children are out in the world, I have enough students who are finished and out in assistant and associate professor positions. It's very, very gratifying, seeing them publish articles, write books and become important in the field. That's every bit as gratifying as having a book of my own."

Messner, former chair of USC College's sociology department, will have the opportunity to mentor students and junior professors outside of the College. He has been elected chair of the American Sociological Association's Section on Sex and Gender, the organization's largest section.

He has also been elected president of the Pacific Sociological Association (PSA). Messner will be the third USC sociologist to serve as PSA president.

After six years of research, Messner is completing a book focused on youth sports and the parents who volunteer to be coaches and team parents. His work delves into why, 35 years after Title IX, 90 percent of coaches are still men, and women instead primarily serve as team moms.

A believer that playing sports leads to lifelong lessons and can offer children positive growth experiences, Messner does see an overemphasis on competition and winning.

"I am interested in being an advocate for social change. I am interested in bringing about a reduction in inequality, a reduction of violence. I think sports are a place like many other social institutions where social inequality gets reproduced, where violence gets reproduced and celebrated in some cases," Messner said.

"So first and foremost, I try to develop a critique of how and why those things happen, but on the other hand I also try to connect with people's love of sports."

Messner has clearly been successful on both counts. The Institute for International Sport, which is affiliated with the University of Rhode Island, named Messner one of the 100 Most Influential Sports Educators. Compiling this list constituted a three-year project for the institute, and Messner was picked from amongst a field of 1,500 nominations.

Making that roll call held a thrill all its own for Messner. "It was neat to see my name on the list with some of my childhood and still current sports heroes like Billie Jean King, Bill Russell and John Wooden," he said.

—Kirsten Holguin

LET'S MAKE SURE YOUR GENEROSITY is only exceeded by your financial SAVVY.
Daniela Bleichmar was a biochemistry major working in a laboratory at Harvard University when she made an astonishing discovery.

“I found out I was a terrible scientist,” Bleichmar said. “I was really bad at it. I kept messing up the experiments. I thought, ‘What am I going to do? I always thought I wanted to be a biochemist.’”

Although she was “really miserable” at the time, Bleichmar now credits those challenging years for helping her find her true path.

Now an assistant professor of art history and of Spanish and Portuguese in USC College, Bleichmar focuses her research on the connections between the natural sciences and art in Latin America and Spain in the period 1492–1800.

“Getting to where I am was sort of a long and winding road,” she said inside her USC office. Born in Argentina, Bleichmar moved to Mexico City with her parents, both psychoanalysts, and two younger brothers when she was 9. Growing up, Bleichmar always enjoyed science, literature and the arts. Whenever she could, she watched arthouse films and visited museums, art galleries and photo exhibits.

“I always wondered,” she said, “Why do I have to choose between being an artist and being a science person?”

Eventually she learned she didn’t. At Harvard she found her niche when she switched her major to the history of science. Then once she became a graduate student at Princeton University, her research broadened and she found more niches.

“I wanted to write about naturalists who traveled, drew images and collected specimens to produce scientific knowledge,” Bleichmar said. “I found a tremendous amount of work had been done on British scientific expeditions, but very little had been written about Spanish scientific expeditions.”

Focusing her research, she discovered a staggering abundance of illustrations chronicling scientific expeditions to the New World.

“The voyages always employed artists who drew detailed pictures of plants and animals that would not survive travel. Whether the expedition focused on natural history, astronomy, geography or cartography, the expeditions produced numerous images to be studied by naturalists and other experts once home.”

“Saw images everywhere,” Bleichmar said of her research that spans from the 16th through 18th centuries, when Spain grew to be the largest empire in the world. “But historians usually base their studies on textual evidence — books and manuscripts. Historians usually don’t base their studies on visual materials.”

Bleichmar, however, is not your usual historian; so she queried her then-advisers at Princeton, “Can I do this? Can I study natural history as a visual discipline?”

Her dissertation explored the connections between images, visual culture, the history of science and the history of colonialism in the Spanish Empire. The work she does is not traditional history of science or art history.

“In my research, I consider images not only as aesthetic objects but also as documents, studying them for the information they contain, and the work they did for those who made and used them,” she said. “This is above all a study of visual epistemology — the production and circulation of knowledge through visual means.”

Her unique, multidisciplinary research approach has garnered her national attention. Bleichmar was featured in the Smithsonian Institution monthly magazine’s special issue, “37 Under 36: America’s Young Innovators in the Arts and Sciences,” published in October 2007.

Bleichmar was among the blossoming scholars, singers, writers, scientists, musicians, painters and activists and at least one computer maven honored by Smithsonian for outstanding innovation in their fields.

“These are people to watch,” senior editor Kathleen Burke wrote in the special issue’s introduction. “The men and women we honor have already distinguished themselves in some way.”

Smithsonian staff combed the nation, looking for a phenomenal historian under 36. They pored over magazines, alumni publications, newspapers and scientific bulletins. They queried experts and advisers.

“When one of our advisers brought 34-year-old Daniela Bleichmar to our attention, we knew we’d found an ideal candidate,” said Beth Py-Lieberman, a Smithsonian associate editor. “Daniela Bleichmar’s approach represents a fresh vision. It represents a new direction and the stuff of legacy.”

Bleichmar was honored by the recognition.

“To get this validation at this early stage in my career is very reassuring,” said Bleichmar, who earned her Ph.D. at Princeton in 2005, then was a Mellon Postdoctoral Fellow in the College before becoming assistant professor. “It makes me think, ‘OK, maybe this does make sense. Maybe I can weave all these threads together and do a good job with it.’”

It’s not hard to say she’s doing a great job. She is completing a book based on her dissertation, Visible Empire: Colonial Botany and Visual Culture in the 18th-Century Spanish World. Additionally, she is co-editing a collection of essays with Peter Mancall, professor of history in the College and director of the USC-Huntington Early Modern Studies Institute (EMSI). In Collecting Across Cultures in the Early Modern World, international scholars will discuss the cross-cultural history of collecting and display. Each essay was presented at meetings organized by Mancall — who is also associate vice provost for research advancement — and Bleichmar through EMSI and the USC-Getty Program in the History of Collecting and Display.

For the next academic year, a non-residential J. Paul Getty Foundation Postdoctoral Fellowship will support Bleichmar’s research. In the fall she plans to study at the Max Planck Institute for the History of Science in Berlin.

“I have a dream job that I never would have known to dream about,” she said. “I never knew a job like this existed. Part of this is being in a place that really, really, really supports interdisciplinary research.”

Emphasizing the intermix among disciplines provides a valuable approach to gathering new knowledge, she said.

“Our minds and our intellectual curiosity are not bounded by disciplines,” Bleichmar said. “So why should our research?”

— Pamela J. Johnson
Against the Grain
A young political scientist breaks ground studying the immigrant vote

As a graduate student at Stanford University, Ricardo Ramirez was warned against studying California politics.

Local politics was passé; he was counseled. He would be better served focusing on Congress or the presidency.

But he stayed true to his passion. His dissertation examined sweeping changes in California politics during the 1990s, tracking shifts in voting behavior and demographics among whites and Latinos.

"I sort of went against the grain," said Ramirez, assistant professor of political science and of American studies and ethnicity in USC College.

By the time Ramirez finished his dissertation during the gubernatorial election in 2002, California politics had gained national attention.

"Sometimes going against the grain is useful," he said with a laugh.

Ramirez, whose parents migrated from Mexico, is particularly interested in voter mobilization and Latino immigrants. His unique approach often supplements his own surveys with existing but often overlooked data, such as home ownership records.

This endeavor keeps him quite busy — in the spring semester he had six projects in progress, including a study funded by a National Science Foundation fellowship. He's also working on a book about Latinos and competition between political parties.

"I love what I do and the fact that I have more questions than I have time to research," he said. "These questions are just waiting to be asked and answered in new ways."

His excellent work has brought recognition. In its January 2008 edition, Diverse: Issues in Higher Education named 34-year-old Ramirez among 10 emerging scholars under 40 as part of the magazine's annual roundup of prominent young intellectuals. The Diverse profile lauded him as "a rising star ... [gaining] national recognition for his research on the voting and political behavior of individuals across racial and ethnic lines."

Of all races and ethnicities, Latinos are the fastest-growing segment of the U.S. electorate in terms of sheer numbers, Ramirez said. And in an election year when the Latino vote in the Democratic primaries has been scrutinized carefully and debated often, it's easy to see the importance of Ramirez's chosen subject.

However, Latino political mobilization is important for more than its influence on elections. It also affects communities themselves.

"Historically, political parties have helped to integrate new voters. As parties have moved away from traditional face-to-face mobilization techniques, Ramirez said, that vital integration process has become more and more disconnected. The effect on Latino immigrants is still being studied."

"We know what kind of impact parties' mobilization efforts had on the older immigrant groups, such as Italians and Irish," he said. "We need to understand how they impact the new ones."

More and more scholars are investigating the intersection of politics and ethnicity. But Ramirez's research is breaking new ground. Take, for example, a collection of essays he co-edited with colleagues from the University of California campuses at Berkeley and Riverside, Transforming Politics, Transforming America (University of Virginia Press, 2006).

It was the first book to analyze immigrant political incorporation — the impact that the foreign-born population in the United States has on American politics, and vice versa.

"That's why we really pushed to get this edited volume out there," he said. "We felt there was a strong need."

The drive to address unanswered questions first drew Ramirez to political science. As a UCLA undergraduate, he was initially interested in international relations, with an eye toward a career in public-interest law.

But then came the contentious public debates around Proposition 187, a ballot initiative to deny government services to illegal immigrants, and Proposition 209, which aimed to end affirmative action in California's public institutions. Ramirez saw these propositions galvanizing people, including his family and friends, to become U.S. citizens. He wanted to know more, but when he sought studies for precedent or explanations, he couldn't find much.

"Someone needs to study this," he remembers thinking. So he did.

His thirst transcends the quest for knowledge — Ramirez is interested in justice.

Born in Los Angeles, Ramirez was raised in Guadalajara, Mexico, for his first seven and a half years. Then his family moved to California's Central Valley, where his parents were farm workers. Around age 12, one of his older brothers drowned. Ramirez felt that an ensuing case was mishandled by his family's lawyer, and he vowed to become an attorney to right the wrongs he perceived against immigrants.

His ambition, as well as the encouragement of his parents, neither of whom attended school past sixth grade, motivated him to excel in his schoolwork.

Although he chose academic over law, Ramirez can see the link between his work and his early determination to confront injustice.

"Some policies are flatly unfair to immigrant communities, he said. "Some push people away from becoming integrated in society," he said. "We need an academic understanding for policymakers to see the real impact of voting laws."

Ramirez wants his research to have real-world impact. He collaborates with the National Association of Latino Elected Officials (NALEO), providing data and advice to bolster their voter mobilization strategies.

NALEO's location near campus is among the reasons USC College is the perfect place for him.

His role as mentor is another way to contribute to a better world.

While Ramirez provides students with new perspectives about the political process, there's a broader message that's equally important — and meaningful coming from a scholar who has occasionally gone against the grain.

He tells his students that if they follow their passion and invest themselves fully, success will surely follow.

"What I try to push to my undergrads is, 'I don't care what it is that you're passionate about. Just go out and do it."

—Wayne Lewis

Ricardo Ramirez, a young political scientist of national repute, studies political attitudes and voting behavior, looking to answer new questions about the growing immigrant electorate.
Cosmic Seeker
Efforts to understand the universe’s origin, form and fate get a boost

When she was growing up in Milan, Italy, science was something of a family business for Elena Pierpaoli. Her mother and aunt were physicists, her sister a mathematician and her father an economist.

So it seems fitting that she would end up in cosmology. After all, math and physics are the lingua franca of the field. But much of her work seeks to discover the long-hidden shape of the universe and the nature of its component parts.

While Pierpaoli was initially attracted to particle physics as an undergraduate, she soon discovered her calling in cosmology.

“The early universe offered more theoretical projects along a less trodden path,” said Pierpaoli, associate professor of physics and astronomy at USC College. “Also, the undergraduate classes I took in extragalactic astronomy and cosmology proposed many problems with a variety of explanations that still had no consolidated answers.”

Reconciling theories about the nature of the universe with actual observations is the theme that ties together her research. She wants to know how the universe began, how fast it’s expanding now and what that can tell us about its future — Will it expand forever or hit some critical point and begin to contract?

But she also investigates the basic constituents of the universe — from trying to characterize mysterious, invisible dark matter and dark energy to understanding the properties of more ordinary matter. She seeks to understand the geography of galaxies, what scientists call the large-scale structure of the universe, and how large clumps of galaxies, called galaxy clusters, have evolved over time. All this information can be used to understand how it all started during the Big Bang.

“I want to know what gave rise to galaxies, to clusters of galaxies, and to the structures in the universe,” Pierpaoli said. “But I also want to answer more fundamental questions, about the early universe and particle physics.”

In studying this array of topics, she has made contributions to many different areas of extragalactic astronomy, cosmology and astrophysics.

After postdoctoral work at the University of Einhoven Columbia and prestigious research fellowships at Princeton and Caltech, Pierpaoli joined the College as its sole cosmologist in 2006. Coincidentally, that was the same year that the Nobel Prize in physics went to scientists who studied light from the early universe — cosmic microwave background (CMB) radiation.

The Earth is constantly bombarded with low levels of CMB radiation from space. It’s harmless to us and invisible to the naked eye, but it’s also a message from the deepest past: Scientists think the CMB radiation reaching us today began its journey about 380,000 years after the Big Bang, and has spent billions of years traveling through space.

Later this year, the Planck satellite is scheduled to launch, carrying aloft a package of telescope and instruments that will afford researchers like Pierpaoli the best view to-date of CMB radiation.

Pierpaoli has been a member of the Planck mission science team for well over a decade now — ever since she was a graduate student in her native Italy. As part of the team, she helped conceptualize what kinds of data the mission should collect in order to answer the big questions of cosmology.

That includes figuring out exactly what Planck, which will be sent out 1.5 million kilometers from Earth, should focus on as its telescope sweeps the entire sky, twice.

Critically, it also involves figuring out the best ways to analyze and interpret the data once they start coming in. The first full-sky map will be available six months after launch.

Working with data collected by one of Planck’s predecessors, the COBE satellite, as well as other ground-based and balloon-borne experiments, Pierpaoli helped to reveal more about the shape and structure of the universe itself. Calculating the universe’s geometry has long been a divisive issue for astrophysicists, a debate in which the arguments relied solely on theoretical conjectures and models.

Specifically, she revealed that space seems very nearly flat — in other words, the geometry of the universe obeys the same rules as on a sheet of paper.

Pierpaoli and her collaborators developed a new analytical technique that allowed them to combine data from a number of groups working on different CMB experiments. Their paper, published in 2000, produced the “first real data showing that the universe is mostly flat,” she said, adding, “The merit of that finding was mostly technical.”

USC College’s Clifford Johnson, a colleague in the physics and astronomy department who is familiar with her work, called this statement “unjustified modesty. This was absolutely a piece of research that changed people’s minds.”

In addition to determining the universe’s geometry, by analyzing CMB data Pierpaoli hopes to understand what exactly it’s made of. “Despite great improvements in understanding the matter content of the universe, we are not quite yet done!” she said.

“The nature of dark matter is still a heavily debated topic, since we are still looking for the model that fits with all of the data. The nature of dark energy is completely unknown.”

Planck’s more-accurate measurements of the CMB will tell us more about the universe’s age and constituents, as well as when the first stars shone and more about how the universe’s expansion has recently accelerated. But Pierpaoli is also excited about the other data that Planck will collect.

“There’s much more science contained in the Planck measurements than just the CMB data,” she said. “By observing the entire sky at nine different frequencies, ranging from the radio to the infrared, we’ll be able to learn more about distant galaxies, other galaxy clusters and our own galaxy.

“One day, many of the big questions will be answered, thanks in part to the precise measurement of the CMB spectrum that Planck will provide,” she continued. “The goal now is to be sure we are prepared to interpret the data as soon as they become available.”

—Eva Emerson
Don’t Worry
Psychologist finds that anxiety increases risk of heart attack

Long-standing anxiety markedly increases the risk of heart attack, even when other common risk factors are taken into account, according to Bing-Jian Shen, assistant professor of psychology in USC College.

"Older men with sustained and pervasive anxiety appear to be at increased risk for a heart attack over and beyond what can be explained by other cardiovascular risk factors," said Shen, who joined the College faculty in 2007.

The research was published in the Jan. 15 issue of the Journal of the American College of Cardiology.

The risk from anxiety was independent of the more accepted biomedical factors associated with heart attacks such as age, obesity, glucose, cholesterol, blood pressure and smoking — as well as other psychological factors, including depression, anger, hostility and Type A behavior, Shen said.

"The physiological reactions of anxiety are very similar to signs and changes that are thought to lead to myocardial infarctions," Shen said. "Look at what happens when you are anxious. Your body reacts as if it is in danger. It is the flight-or-fight response. The reactions are very similar to those brought on by anger or a Type A personality that have been observed in earlier research."

Although many may think of anxiety as intense worry and tension, Shen also examined excessive doubts, obsessive thoughts, irrational compulsions, insecurity, discomfort in social situations and phobias.

"The good thing about anxiety is that it’s very treatable," Shen said. "If someone is highly anxious — if they’re suffering from panic attacks or social phobia or constant worry — we recommend therapy. Although more research is needed, we hope that by reducing anxiety, we can lower the future risk of heart attack. This is one more reason to seek help."

For the study, Shen and his colleagues analyzed data from the Normative Aging Study, which was designed to assess medical and psychological changes associated with aging among a group of initially healthy men.

Each of the 735 men participating in the new analysis completed psychological testing in 1986 and was in good cardiovascular health at the time.

Separate sections of the psychological test measured hostility, anger, Type A behavior, depression and negative emotions. Study participants also completed questionnaires about health habits such as smoking, alcohol consumption and daily diet. They had a medical exam every three years over a follow-up period that averaged more than 12 years.

The investigators found that men who tested at the highest 15th percentile on any of the four anxiety scales, as well as on a scale combining all four, faced an increase in the risk of heart attack of approximately 30 to 40 percent.

Shen worked on the study with several colleagues, including Yael Avish of the University of Miami and co-authors Avron Spirou of Boston University and Raymond Niaura of Brown Medical School.

Shen said the new research does not address the role of anxiety in provoking heart attacks in women. He and his colleagues are considering such a study in the future.

Shen was supported by a grant from the American Heart Association and an award from the National Alliance for Research on Schizophrenia and Depression.

—Eddie North-Hager

How Does the Brain Recognize a Face?
Neuroscientists report progress on a fundamental question

Monica Lisa’s smile may remain forever ineffable, but now science can measure the difference between the real thing and its many imitations.

A team of neuroscientists including Irving Biederman, holder of the Harold Donnifie Chair in Neurosciences in USC College, say they can predict with near-perfect accuracy whether two faces resemble each other enough to fool a human observer.

Their study provides rare insight into the hard rules guiding one of the most subjective of processes.

The researchers presented their results Nov. 6 at the Society for Neuroscience’s annual meeting.

The study used a face recognition computer model, previously developed by Christoph von der Malsburg of the USC Viterbi School of Engineering and the College, to try to understand how human brains recognize faces.

"We knew that the model could do a good job at matching one image of a face to a different picture of the same person," Biederman said, "but we did not know whether it was doing it in a manner that mimicked the way people were doing it."

"Our experiments showed that if the model computes two faces to be very similar, then people will have a hard time telling the difference between the two faces."

The research group, which included lead researcher Xiaomin Yue, a 2007 USC psychology Ph.D. and now research fellow at Massachusetts General Hospital, interpreted the consistent results as evidence that the computer model faithfully represents neural processes.

"It’s quite likely, or at least plausible, that the brain is doing face matching this way," said Biederman, professor of psychology and computer science.

To test the model, the researchers showed a dozen volunteers a triangular array of three faces for a half a second. One of the lower faces was identical to the upper face, while the similarity of the non-matching face varied slightly.

Biederman said the model predicted almost perfectly which faces would lead subjects to make slow and incorrect decisions.

"All subjects showed exactly the same pattern," he said.

The model builds on previous studies of the first area in the visual cortex to receive signals from the optic nerve. Known as V1, the area contains hundreds of millions of neurons tuned to detect contrast between light and dark.

Each neuron fires only when its simple preferred feature — say a white bar on a black background — appears in a unique location, at a unique angle and at a unique size. This pattern of neuronal firing then drives networks of neurons in later stages that represent faces, objects and scenes.

These later networks allow the brain to recognize objects even if they appear in a different orientation or with a different direction of illumination. This ability comes at the expense of some of the data acquired by V1, including details useful in facial recognition, Biederman said.

For that task, which demands fine discrimination, Biederman and others believe the brain reverts to a V1-type of analysis, though at a risk of error if viewing conditions change.

For example, humans find it almost impossible to recognize a face if it is upside down or viewed as a photographic negative. Not so with objects.

Biederman said the study also helps explain why many beginning artists struggle to represent objects believably.

"The hard part about learning to draw is not drawing the object," Biederman said, meaning that the artist must focus on V1-acquired properties, such as reflectance, orientation and grainless, that the brain automatically subordinates.

The other co-author was Suresh Subramaniam, a former graduate student in Biederman’s laboratory.

—Carl Mariani
Fish Moving Off the Menu

By 2100, warmer oceans may not sustain one of world’s most productive fisheries

The last fish you ate probably came from the Bering Sea. But during this century, the sea’s rich food web — stretching from Alaska to Russia — could fray as algae adapt to greenhouse conditions.

“All the fish that ends up in McDonald’s fish sandwiches — that’s all Bering Sea fish,” said USC College marine ecologist David Hutchins, whose former student at the University of Delaware, Clinton Hare, led research published Dec. 20 in Marine Ecology Progress Series, a leading journal in the field.

At present the Bering Sea provides roughly half the fish caught in U.S. waters each year and nearly a third caught worldwide.

“The experiments we did up there definitely suggest that the changing ecosystem may support less of what we’re harvesting — things like pollock and hake,” said Hutchins, professor of biological sciences in the College.

While the study must be interpreted cautiously, its implications are alarming, Hutchins said, especially since the Bering Sea is already warming.

“It’s kind of a canary in a coal mine because it appears to be showing climate change effects before the rest of the ocean,” he noted.

“It’s warmer, marine mammals and birds are having massive die-offs, there are invasive species — it’s not a good sign to a more temperate ecosystem that’s not going to be as productive.”

Carbon dioxide’s direct effects on the ocean are often overlooked by the public.

“It’s a good start that people get worried about melting ice and rising sea levels,” he said. “But we’re now driving a comprehensive change in the way Earth’s ecosystem works — and some of these changes don’t bode well for its future.”

The study examined how climate change affects algal communities of phytoplankton, the heart of marine food webs.

Phytoplankton use sunlight to convert carbon dioxide into carbon-based food. As small fish eat the plankton and bigger fish eat the smaller fish, an entire ecosystem develops.

The Bering Sea is highly productive thanks mainly to diatoms, a large type of phytoplankton.

“Because they’re large, diatoms are eaten by large zooplankton, which are then eaten by large fish,” Hutchins explained.

Recently published research by David Hutchins of biological sciences and his colleagues suggests that a greenhouse ocean means significant shifts in the food chain.

The researchers collected the algal samples from the Bering Sea’s central basin and the southeastern continental shelf. They incubated the phytoplankton on board, simulating sea surface temperatures and carbon dioxide concentrations predicted for 2100.

Each of these variables was tested together and independently. Ratios of diatom to nanophytoplankton in manipulated samples were then compared with those in plankton grown under present conditions.

The scientists found that photosynthesis in greenhouse samples sped up two to three times current rates. However, community composition shifted from diatoms to the smaller nanophytoplankton.

Temperature was the key driver of the shift, with secondary impacts from the increased carbon dioxide concentrations, according to the study.

Hutchins and Hare’s colleagues were Karine Leblanc of the Centre National de la Recherche Scientifique, in France; Giacomo DiTullio, Peter Lee and Sarah Riseman of the College of Charleston; Raphael Kudela of the University of California, Santa Cruz; and Yuohong Zhang of the University of Delaware.

The National Science Foundation supported the research.

— Terak DeLong
Makeup of a Meltdown

Earth scientist uncovers clues to the end of the last ice age

In contrast to what is often inferred from the geologic record, carbon dioxide did not cause the end of the last ice age, a study published in Science suggests.

"There has been this continual reference to the correspondence between CO₂ and climate change as reflected in ice core records as justification for the role of CO₂ in climate change," said paleoclimatologist Lowell Stott, the study's lead author and a professor of earth sciences at USC College.

"You can no longer argue that CO₂ alone caused the end of the ice ages."

Deep-sea temperatures warmed about 1,300 years before the tropical surface ocean and well before the rise in atmospheric CO₂, the study found. The finding suggests the rise in greenhouse gas was likely a result of warming—but not its main cause.

However, the study does not question the fact that CO₂ plays a key role in climate.

"I don't want anyone to leave thinking that this is evidence that CO₂ doesn't affect climate," Stott cautioned. "It does, but the important point is that CO₂ is not the beginning and end of climate change."

While an increase in atmospheric CO₂ and the end of the ice ages occurred at roughly the same time, scientists have debated whether CO₂ caused the warming or was released later by an already warming sea.

The best estimate from other studies of when CO₂ began to rise is no earlier than 18,000 years ago. Yet this study shows that the deep sea, which reflects a good picture of oceanic temperature trends, started warming about 19,000 years ago.

"What this means is that a lot of energy went into the ocean long before the rise in atmospheric CO₂," Stott said.

But where did this energy come from? Evidence pointed southward.

Water's salinity and temperature are properties that can be used to trace its origin — and the warming deep water appeared to come from the Antarctic Ocean, the scientists wrote.

This water then was transported northward over 1,000 years via well-known deep-sea currents, a conclusion supported by carbon-dating evidence.

In addition, the researchers noted that the increases in deep-sea temperature coincided with the retreat of Antarctic sea ice, both occurring 19,000 years ago, before the northern hemisphere's ice retreat began.

Finally, Stott and colleagues found a correlation between melting Antarctic sea ice and increased springtime solar radiation over Antarctica, suggesting this was the energy source.

As the sun pumped in heat, the warming accelerated because of sea-ice albedo feedbacks, in which decreasing ice exposes more of the ocean that can absorb heat from the sun, much like a dark t-shirt on a hot day, and this results in more melting.

In addition, the authors' model showed how changed ocean conditions may have been responsible for the release of CO₂ from the ocean into the atmosphere, which, like the albedo feedbacks, also accelerated the warming.

The link between the sun and ice age cycles is not new. The theory of Milankovitch cycles states that periodic changes in Earth's orbit cause increased summer-time solar radiation in the northern hemisphere, which controls ice size.

However, this study suggests that the pace-keeper of ice sheet growth and retreat lies in the southern hemisphere's spring rather than the northern hemisphere's summer.

The conclusions underscore the importance of regional climate dynamics, Stott said. "Here is an example of how a regional climate response translated into a global climate change," he explained.

Stott and colleagues arrived at their results by studying a unique sediment core from the western Pacific composed of fossilized surface-dwelling (planktonic) and bottom-dwelling (benthic) organisms.

These organisms — foraminifera — incorporate different isotopes of oxygen from ocean water into their calcite shells, depending on the temperature, and by measuring the change in these isotopes in shells of different ages, it is possible to reconstruct how the deep and surface ocean temperatures changed through time.

If CO₂ caused the warming, one would expect surface temperatures to increase before deep-sea temperatures, since the heat slowly would spread from top to bottom. Instead, carbon-dating showed that the water used by the bottom-dwelling organisms began warming about 1,300 years before the water used by surface-dwelling ones, suggesting that the warming spread bottom-up instead.

"The climate dynamic is much more complex than simply saying that CO₂ rises and the temperature warms," Stott said. The complexities "have to be understood in order to appreciate how the climate system has changed in the past and how it will change in the future."

Stott's collaborators were Axel Timmermann of the University of Hawaii and Robert Thunell of the University of South Carolina. Stott was supported by the National Science Foundation and Timmermann by the International Pacific Research Center.

Stott is an expert in paleoclimatology and was a reviewer for the Intergovernmental Panel on Climate Change. He also co-authored a paper in Geophysical Research Letters tracing a 900-year history of monsoon variability in India.

The study, which analyzed isotopes in cave stalagmites, found correlations between recorded fanimes and monsoon failures, and found that some past monsoon failures appear to have lasted much longer than those that occurred during recorded history. The ongoing research is aimed at shedding light on the monsoon's poorly understood but vital role in Earth's climate.

—Terah DeLong
A Jewel of a Book

Historian sheds light on unheralded trailblazers for the Scientific Revolution

I not for her “blissful ignorance” and dogged determination, Deborah Harkness’ book taking a unique look at the Scientific Revolution would never have been written.

After 10 years of research, writing the 349-page *The Jewel House: Elizabethan London and the Scientific Revolution* (Yale University Press, 2007) was the easy part.

The professor of history in USC College had just completed a book about controversial natural philosopher John Dee when she examined her list of books written by Dee’s English contemporaries.

“I looked at this list of books and I thought, ‘Who are all these people?’” Harkness recalled. “I had never heard of most of them and I became very interested. … As I started reading their books, I realized that they were referring to each other, referring to other books, and suddenly a whole new world started taking shape.”

She decided to go to the British Museum and libraries in London and learn more about these unknown 16th century scientists.

“In blissful ignorance, I said, ‘Well, I’m just going to go to London and start finding out about these people,’” she said. “People who knew London history better than I do said I was crazy. And I thought, ‘Well, I’ll give it a try.’”

After her arrival in London, she quickly understood why her friends had called her crazy. To glean any knowledge about these long-dead scientists, she had to research piles and piles of barber-surgeon, ironmonger and other guild records. She had to visit various locations to track down wills that had survived, as well as tax and property records. One name led to another and another.

Her list of 300 Elizabethan Londoners who had contributed to the sciences soon grew to 1,800.

Then came the painstaking task of deciding whom to leave on the cutting-room floor.

“So this book was born out of my lack of knowledge of archives,” she said with a laugh. “And my sense that I could find this information if I just looked hard enough for it—that’s what made this book possible. If I understood what I was taking on, I would never have started.”

“The result of her skill and tenacity is a vivid book that closely examines colorful scientific communities whose members set the stage for the Scientific Revolution—a period during the 16th and 17th centuries in Europe when modern science was born.

Early reviews have been exceptional: “[Harkness’] research is revelatory and her taste for the offbeat enthralling,” wrote *The New Yorker*.

“Harkness has written a truly wonderful book, deeply researched, full of original material, and exhilarating to read,” enthused *The Times* of London.

The *Times* touted the book’s “grown-up realism,” likely because Harkness wasn’t afraid to compare fathers of modern science such as Isaac Newton, Galileo Galilei and Francis Bacon to unknown contemporaries and include those unknowns as key contributors.

Harkness tells the story of early modern science by first taking the reader to London’s Lime Street, an enormously diverse, square-mile community where naturalists lived and shared their discoveries.

She then tracks the stories of everyday barber-surgeons, apothecaries, midwives, gardeners, botanists, clockmakers and alchemists who lived in London and experimented in the sciences.

In her digging, Harkness has unearthed some of Bacon’s contemporaries who were seriously interested in science, but whom historians had neglected until now. The adage “publish or perish” explains why many of these men and women became obscure, Harkness said. But publishing wasn’t a priority in this close-knit community.

“If you live in a city that is one square mile and everyone knows you’re the bug man, then whether or not you publish your manuscript is not that crucial,” Harkness said.

“Nobody would have made the mistake in 1597 that the famous Elizabethan botanist John Gerard was also your go-to man for bugs.” Harkness’ discoveries include Hugh Plato, who fought to establish a scientific basis for examining recurring social phenomena such as famine and starvation. Harkness said the Scientific Revolution isn’t only about a few enlightened and forward-think-

ing scientists who made the big breakthroughs.

“Newton gets huge amounts of credit for the very good reason that he made the major scientific breakthrough in universal gravitation,” Harkness said before paraphrasing a famous quote. “But Newton himself said, ‘If I have seen further, it was only because I stood on the shoulders of giants.”

Newton also stood on the shoulders of largely unstudied and unknown scientists such as Plato, Harkness argues—a bold assertion that Science implied would surely spur debate.

“The myth of Baconian exceptionalism will further erode” as a result of the book, the review stated, “and perhaps most important, the importance of practices to the category of science will increasingly be subject to detailed scrutiny.”

Harkness acknowledged that her book may rankle some traditionalists.

“Showing the ways in which important little changes were taking place even before those magical moments like Newton’s development of the universal law of gravitation is going to be controversial,” she said.

“Not everyone is going to like the fact that I think Hugh Plato deserves as much attention as Bacon.”

But she did not only seek to change people’s beliefs by sharing the stories of everyday scientists in Elizabethan London.

“These are stories that deserve to be told,” she said. “They shed light on how people figured out what science should be before there were any set of rules, regulations or protocols. For me, I could suddenly see the small steps that led to the big breakthroughs.”

— Pamela J. Johnson
The Age of Aquarius
Novelist gives his take on American society in tale about quest for revenge

Percival Everett never set out to tell the tale of a lunatic who repeatedly tortures a man.

In Everett's 20th book, The Water Cure (Graywolf Press, 2007), the narrator binds a man with duct tape, locks him in his trunk and drives from downtown Los Angeles to his isolated second home in the mountains of New Mexico.

Ishmael Kidder keeps the man in his basement and continuously waterboards him—a technique once referred to as "the water cure" in which the victim is strapped to a board while water is poured over his face to simulate the sensation of drowning.

"It's not a place I planned to go," said Everett, a Distinguished Professor of English in USC College. "It was mostly a reaction to the sadness and state of our country and our culture and what we seem to be capable of."

Alluding to the controversial interrogation technique used in prosecuting the War on Terror, the novel's protagonist explains that his country has "taught me to torture."

But Kidder has other reasons for his lunacy. A divorced and broken romance novelist, he is anguished over the rape and murder of his only child, 11-year-old Lane. Some of the most stirring moments center on the father's bond with his daughter, whose favorite color was blue and who had "a head full of wild dark hair."

In one reflection, a sharp-minded, 5-year-old Lane becomes concerned about the fate of her goldfish, Goldie, and asks her father whether people eat goldfish. He tells her no.

"So, he's going to die?"
"I'm afraid so."
"Why?"
"All animals die. Some live longer than others, but all of them die," I told her.
"No, I mean why are you afraid?"

When police lack enough evidence to hold the prime suspect, Kidder assumes the mantle of vigilante. Inside his damp basement, he parses his hostage's protestations of innocence:

A novel by
Percival Everett
The Water Cure

Percival Everett's novel Wounded, about racial and sexual intolerance, earned a PEN USA 2006 Literary Award. The USC College Distinguished Professor's new novel, The Water Cure, tells the story of an enraged father, and is a meditation on the state of the country.

... And I consider what makes any statement true, taking into account the factors of meaning and fact, taking into account lies and fictions, taking into account that no one gives a rat's ass anyway ... 

Deciding his hostage is lying, Kidder proceeds to torture him, nicknaming him W, renaming him Art and later Frenhofer. Woven through the grisly plot is an unmistakable "death of innocence" theme. The innocent child's tragic death echoes the reported abuses in Iraq's Abu Ghraib prison, in Guantánamo Bay, Cuba, and elsewhere — and the death of America's innocence as a nation.

Everett acknowledges the connection but said each reader will interpret the work differently. "The reader is going to make whatever meaning she or he wants to make," Everett said. "Or they may not make any meaning of it at all. ... It's exciting to find at some point along the way what it does mean to someone else. And it could mean something that I never intended. That's the beauty of art."

Art, it turns out, plays a central role in the book, which reads like the diary of a derailed, highly intelligent and introspective man — an odd bird so paranoid he brings his own food (stew he made with elk he hunted) to restaurants and pays $30 for a plate.

At times, Kidder's abstract Picaso-esque self-portraits and stick-figure sketches appear on pages.

On other pages, Kidder's childlike scrawl relays messages such as "Each child is an innocent," with some of the letters backwards.

The simple drawings and hand-scrawled messages are juxtaposed against pages of ancient philosophical arguments Kidder has with himself, as he evokes the voices of Aristotle, Socrates and Plato. Peppered throughout the prose are word puzzles, jokes, poems, limericks and musings on linguistic theory.

In one of several conversations Kidder has with dead people, he exchanges barbs with the cantankerous ghost of Thomas Jefferson, who has joined him on his reckless ride to New Mexico. Again, Kidder contemplates the meaning of words, when Jefferson asks, "Tell me friend, what do you think cruel and unusual punishment is?"

"I suppose I'd have to know first what is not cruel and what is usual. If not cruel is kind, then is it in fact punishment? And it seems to me that kind punishment sounds a bit unusual."

Everett plays with structure. Equally important are "the talk of meaning and how words come to make meaning and how they can be meaningless," he said. "To me, it becomes more important on a rudimentary level about logic and connections that my mind makes."

The interruptions also serve to shift a reader's awareness from the emotional to the logical, moving the subject of torture from the heart to the head. For the reader, the shifts create a kind of detachment, and Kidder's cool detachment somehow begins making sense.

But don't kid yourself if you think you have the book figured out. Just ask the author what it all means.

"If I tried, I would be pretending," Everett says. "I can't tell you what it's all about, either."

—Pamela J. Johnson
Poetry Takes Center Stage

Writer Muske-Dukes and actor Lithgow get personal, poetic for Visions and Voices

A
fter her 55-year-old husband died of a heart attack, Carol Muske-Dukes brought some of his ashes to New York City. Muske-Dukes wanted her beloved to spend eternity the same place he began his acting career — on a Broadway stage. “We scattered some of David’s ashes on the stage and in the front row of the theater, so he would be there in perpetuity,” said poet Muske-Dukes, a professor of English in USC College, during a Visions and Voices event.

The Feb. 21 poetry reading — part of a university-wide arts and humanities initiative — was filled with moving, deeply personal reflections. “I have to tell you, [scattering his ashes in a theater] was a very strange thing to do,” she told the audience of about 100. “But it seemed exactly right for David’s memory.”

Tony and Emmy award-winning actor John Lithgow, a longtime friend of Muske-Dukes and her late husband, read from his book The Poets’ Corner (Grand Central Publishing, 2007), a collection from the masters.

With his familiar baritone yet somehow sweet voice, Lithgow also read and recited many other poems, some from Muske-Dukes’ Sparrow (Random House, 2003), poems chronicling the love and loss of her late husband, Muske-Dukes read from Sparrow and her novel Channelling Mark Twain (Random House, 2007), as well as The Poets’ Corner and other poetry.

Muske-Dukes shared the story about her husband’s ashes before Lithgow read a poem from Sparrow called “Ovation.”

John and I move quickly, each with a handfull of ash, scattering. The sound of no sound falling into the cracks in the board, the footlights, the first row. A small personal snow: a prince of dust, a villain of dust. Each part you played drifting up again, recomposing, I open my hand, I let you go — back into the lines you learned, back into the body and the body’s beauty —

Back into the standingovation: how after after how. During the event, Lithgow also shared some stories. He recalled his boyhood years when his family often moved, following the career of his father, a theatrical producer and director.

“We moved crazily once a year for several years,” Lithgow said.

During one move, when the family was driving across Pennsylvania in their station wagon, they stopped for a night near the woods. Eight-year-old Lithgow wandered alone into the woods and stumbled across a large, old wooden palpy hanging from a tree. “Being an 8-year-old boy looking for adventure, I took the rope and tied it to my legs,” Lithgow said.

He took the other end of the rope and “pulled and pulled and pulled myself up, up, into the air” until he was completely upside-down.

“You have to understand the physics of this moment,” Lithgow said. “I was hanging on the rope, looking straight up at my feet with the rope tied to them.”

The story ends with the youngster “falling eight feet in a heap on the ground”.

Even though he was alone, he said, “I was mortified with embarrass- ment.”

Lithgow thinks of that old pulley hanging off the tree each time he reads Robert Frost’s “Birches,” a poem about a young boy swinging on the branches of a birch tree and his ascent into old age, when he begins contemplating the meaning of life and death.

Lithgow also recited what he called the Grandma Moses of all poems, “The Wonderful One-Hoss Shay” by Oliver Wendell Holmes. His “gram- my” taught him the poem when he was 7.

Just as his grandmother used to do, Lithgow recited the 805-word poem by memory — a tradition of passing along stories that Muske-Dukes said should be revived. Muske-Dukes credited her mother, Elsie Muske — who at 91 still recites poetry by heart — for instilling in her a love for poetry.

“When you have a poem memo- rized, it’s your poem in a way,” said Muske-Dukes, the founding director of the College’s Ph.D. in Literature and Creative Writing program.

“It begins to beat with your heart and flow with your blood.”

—Pamela J. Johnson

Channelling Raymond Chandler

continued from back cover

He was 35 and Cassy was 53, although she deducted 10 years from her age in their marriage certificate. Freeman argues that Chandler likely did not know Cassy’s true age until many years later.

Before Chandler died in 1959 at age 70, about four years after Cassy’s death, he burned all her letters.

Freeman gained more insight about Chandler and Cassy by traveling to England and conducting research at Oxford University’s Bodleian Library. Working in the Chandler archive, she examined 82 boxes filled with thousands of letters, notes, poems and other papers.

So when Freeman writes of her daydreams that gave her the “feeling of being in [Raymond and Cassy’s] presence,” the images and conversations she describes are largely based on fact.

“I’ve read about their lives,” began Freeman, who speaks with the kind of grace and warmth that one imagines the world-weary Chandler would have found soothing. “I’ve been to the archive at the Bodleian. I have many, many details.

“I know what color Cassy’s dressing gowns were,” she continued. “I know that she awoke at midnight often, and that Chandler would always stay up just in case she wanted a cup of tea. I know that she was languorous. I know that she didn’t have a great deal of energy as she aged. I know of all their little rituals of listening to the same classical music program every night. I know that they had tea every afternoon.

“So even though it seems as though I am making up a life for these people, in fact, that reverse is really rising out of a great deal of factual information,” Freeman said.

With The Long Embrace, Freeman, who moved from Idaho to Los Angeles in the late 1970s, has also produced a book chronicling the development of L.A., a new metropolis when Chandler arrived.

“It was such a wonderful landscape to explore,” Freeman said. “And I think Raymond Chandler was kind of an explorer at heart. Because he moved over three dozen times in and around L.A., I really believe this is part of the reason that he captured the city so well in his fiction.”

But most of all, Freeman said, the book was an exploration of the complexities of marriage.

“I was struck by Chandler’s phrase that what’s really important is a loving presence in the home,” Freeman said. “The key word is ‘loving.’ That’s what Chandler and Cassy had. And it’s what carried them through some really hard times.”

—Pamela J. Johnson

There’s more to the story...

USC College News extends our coverage with video content on the Web.
To view a video about Freeman and The Long Embrace, go to college.usc.edu/mag/freeman/
Scholarship Bound
A roundup of recent books by USC College faculty

Examing Violence in Russia Through Art and Literature
Cultural and religious traditions are just two of the numerous factors that have been blamed for the violence in Russian history. In Times of Trouble: Violence in Russian Literature and Culture (University of Wisconsin Press, 2007), Marcus Leivitt, associate professor of Slavic languages and literatures, puts together a series of essays that explore Russian history and the violence shown in visual arts and literature.

Talk About the Romance
In Loving With a Vengeance: Mass-Produced Fantasies for Women (Routledge, 2007), Tania Modleski, Florence R. Scott, Professor of English in USC College, analyzes from a feminist standpoint popular programs and literature aimed at women. In this, the second edition of her original book published in 1984, she revises to criticisms of her study on women and romance fiction.

Transforming China Through Woodcutting
In Origins of the Chinese Avant-Garde: The Modern Woodcut Movement (University of California Press, 2007), Xiaobing Tang, professor of East Asian languages and cultures and of comparative literature, praises the modern woodcut movement, calling it one of the most important artistic practices of early 20th century China. In his book, he asserts that young printmakers who pursued the woodcut contributed to the artistic and political modernization of China.

Jamestown's 400th Anniversary
Peter Mancall, professor of history and anthropology, gathers 18 essays that give insight into the development of colonies in North America in The Atlantic World and Virginia, 1550–1624 (The University of North Carolina Press, 2007). The pieces collected by Mancall, director of the USC-Huntington Early Modern Studies Institute, consider developments in Native America, Europe, Africa, the Caribbean and the Chesapeake that led to the settlement of the Jamestown colony in 1607.

The Power of Pride
In About My Life and the Kept Woman (Grove Press, 2008), John Rechy, lecturer in the Master of Professional Writing Program, candidly recounts his experience growing up as a Mexican-American in Texas. Rechy leads his reader from the events that shaped his childhood — the Great Depression, facing discrimination, his rebelliousness in school — to the adventures of his adult life — an arrest in Los Angeles, a fascination with a notorious woman and finally his development into a writer.

The Segregated Scholars
In The Segregated Scholars: Black Social Scientists and the Creation of Black Labor Studies, 1890–1950 (University of Virginia Press, 2006), Francille Susan Wilson, visiting associate professor of American studies and ethnicity, gives insight into the great strides made by many black scholars and social activists. Among numerous influential figures discussed in her book, female social scientists who played a significant role in the struggle for equality receive particular attention.

Facuty News
Convocation Honors
University Professor Michael Waterman, holder of the USC Associates Chair in Natural Sciences in USC College and professor of biological sciences, computer science and mathematics, received the Presidential Medalist, USC's highest honor, at the Academic Honors Convocation April 2. In the citation presented to him at the event, Waterman was lauded for "interdisciplinary insights and talent [that] have been instrumental in placing USC in the vanguard of genomics research." Nicos Petasis, holder of the Harold and Lillian Moulton Chair in Chemistry, and Nicholas Warner of physics and astronomy and of mathematics were given the USC Associates Award for Creativity in Research. The USC Associates Award for Excellence in Teaching went to pre-matriculator Craig Stanford, professor of anthropology and biological sciences. Margaret Russell of the English department received a Phi Kappa Phi award for outstanding book, VERN Bengtson, professor emeritus of sociology, received the USC Faculty Lifetime Achievement Award.

Good News Comes in Threes
In January USC President Steven B. Sample honored Richard Thompson, professor of the William M. Keck Chair in Biological Sciences and professor of psychology, by appointing him University Professor. (To read about another recent honor for Thompson, see p. 28.) Sample also named both James Higginbotham, holder of the Linda MacDonald Hill Chair in Philosophy and professor of linguistics, and Solomon Golomb, holder of the Andrew and Erna Viterbi Chair in Communications at the USC Viterbi School of Engineering and professor of mathematics in the College, as Distinguished Professors. (For more about Higginbotham and the study of language and mind at USC College, see p. 4.) "Richard Thompson, James Higginbotham and Solomon Golomb have made vital and lasting contributions to their fields," USC College Dean Howard Gillman said, "and all of us at USC College are privileged to be able to call them colleagues."

College Honors
In December USC College gave its highest honor, the Albert & Rubenstein Award, to four faculty members. Sarah Pratt, professor of Slavic languages and literatures, won in the humanities; psychologist Beth Meyerowitz won in the social sciences; molecular biologist Myron Goodman won in the natural sciences and mathematics; and Jane Iwamura, assistant professor of religion and of American studies and ethnicity, continued on page 26

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American studies and ethnicity has received a fellowship from the Radcliffe Institute for Advanced Studies. Nguyen will be working on “The Afterlife of War: Between Viet Nam and the United States,” a project examining how the Vietnam War remains a traumatic event in popular memory, by looking at U.S. and Vietnamese literary and visual cultures of the 1960s through the present.

Apiachai Shipper of political science and international relations has been awarded an Abe fellowship from the Social Science Research Council for his comparative study of Japan, Sweden, and the United States. The fellowship is “designed to encourage international multidisciplinary research on topics of pressing global concern.”

**Contributions to Clinical Genropsychology**

Margaret Gatz of psychology has been named 2007 recipient of the M. Powell Lawton Award for Distinguished Contributions to Clinical Geropsychology. The award was given by the Society of Clinical Geropsychology, a section of the American Psychological Association (APA), who also holds appointments in gerontology and preventive medicine, was presented at the APA annual meeting, where she delivered an invited address.

**Promoting Prominent Researchers**

The USC Center for Excellence in Research (CER) has named Susan Forburg of biological sciences as a faculty fellow. The center was founded in 2007 with the intention of increasing the impact and prominence of scholarly research throughout the university. Faculty fellows are selected based on their accomplishments and their commitment to promoting a culture of excellence in USC research. Forburg, who is best known for her work on cell division and cancer, joins historian Peter Mancall and psychologists Carol Prescott and Rand Wilcox as CER faculty fellows in USC College.

**Leadership in British Studies**

Professor of linguistics, has been elected a fellow of the Acoustical Society of America. The citation accompanying the announcement recognized her “research on the relation of linguistic structures to the temporal realization of speech.” Byrd will be presented with a certificate at the society’s summer meeting in Paris. (For more about the work of Byrd and her colleagues at USC College studying language and mind, see p. 4.)

**Advancing Human Rights**

Ruth Wilson Gilmore of American studies and ethnicity and of geography received a 2007 Outstanding Book Award for her book *Golden Gulag: Prisons, Surplus, Crisis, and Opposition in Globalizing California*. In New York City, the center “commends works published in a given year which extend our understanding of the root causes of prejudice and the range of options we as humans have in constructing alternative ways to share power.”

**A Must-Read**

Marianne Wiggins of English was a finalist for the 2007 National Book Critics Circle award in fiction for her novel *The Shoebird Catcher* (Simon and Schuster). An acclaimed postmodernist exploration of the life of photographer Edward Sheriff Curtis, her novel was one of five nominees in the category.

**Women’s Rights in Iran**

Eliz Sanasarian of political science received the 2007 award for Best Research Book on Women in Iran from the Sadighi-Dovlatladi Librarianship in Tehran for her book *The Women’s Rights Movement in Iran: Martyrs, Apparatchik, and Repressive*. The book was translated into Persian by Noushin Ahmad Khorami and was chosen from a field of 200.

**The Missing Piece of a Universal Puzzle**

Itzhak Bars of physics and astronomy was featured in a New Scientist cover story highlighting his theory of additional dimensions of time and space. His theory describes a new reality with six dimensions, including a hidden dimension of time and an additional dimension of space. According to the article, his work could lead to a “theory of everything” unifying the physical laws of the universe.

**Excellence in Teaching**

The American Political Science Association and Phi Sigma Alpha, the National Political Science Honor Society, formally recognized Ben Barnes of political science for outstanding teaching during last summer’s annual meeting in continued on page 27
Lowenthal Appointed as Brookings Senior Fellow

International relations scholar to examine U.S.-Latin America relations

Abraham Lowenthal, holder of the Robert F. Erburu Chair in Ethics, Globalization and Development in USC College, was recently named a nonresident senior fellow at the Brookings Institution, one of the nation’s foremost domestic and foreign policy think tanks. Funded in part by the Ford Foundation, the fellowship will aid the international relations professor in pursuing a new project, “Rethinking U.S. Policies and Relationships in the Americas.”

Lowenthal chose to work with the Washington, D.C.-based nonprofit because of its vaunted influence in the Beltway. “They are really the gold standard in terms of a nonpartisan think tank with policy influence,” he said. “The work I’m doing will be looked at within the broad framework of their work not only on foreign policy, but also on domestic issues such as immigration. “I look forward to exchanging ideas with the people there,” he continued, “and to having what I do seen within the context of an extremely respected and influential source of ideas on policy issues.”

A prominent expert on Latin America, Lowenthal is the founder and former president of the Pacific Council on International Policy, an independent and nonpartisan think tank affiliated with USC College. He has authored or edited a dozen books, and has had published more than 100 scholarly and 150 newspaper articles. He is a member and former vice president of the Council on Foreign Relations. Lowenthal served as founding director of both the Latin American Program at the Woodrow Wilson International Center for Scholars and Inter-American Dialogue, the nation’s premier Latin American policy institute.

“Throughout his remarkable career Abe Lowenthal has worked to ensure that public policy debates benefit from the insights provided by high quality social science,” said College Dean Howard Gillman. “This appointment is an acknowledgment of the significance of his work, and underscores the vital importance of strong scholarship for public policy.”

Lowenthal aims to produce a comprehensive analysis of U.S. relations with the countries of Latin America, as well as recommendations for U.S. policymakers. The as-yet untitled book will be completed in 2010. He already has one important piece of advice to offer: The United States can’t afford to have a single cookie-cutter approach toward relations with its neighbors to the south. “I want to take a fresh look at the state of United States relations with Latin America, and U.S. policies toward Latin America,” Lowenthal said. “And, to begin with, to really disaggregate that question and understand that the region is just too diverse and going in too many different directions for there to be one settled Latin America policy.”

For Lowenthal this project is a type of homecoming – and in more ways than one. It will be his third stint at Brookings. He served as a research fellow there while completing his doctoral dissertation at Harvard University. Later he returned as a guest scholar while working on Partners in Conflict (The Johns Hopkins University Press, 1990), which won a Phi Kappa Phi prize for outstanding book by a USC faculty member. The project also represents an intellectual homecoming. After more than a decade developing the think tank he founded, Lowenthal is refocusing his attention on his area of expertise. “From 1993 to 2005, I concentrated almost all of my effort and energy on building the Pacific Council,” he said. “During those 12 years, I had to reduce very substantially my involvement in Latin America, my travel in the region, my participating in conferences, and my writing of essays and chapters.”

After Lowenthal stepped down, he hit the road in order to reconnect with Latin America. He and his wife, Jane Jaquette (herself a prominent Latin Americanist), spent five of the following 18 months traveling to nine countries in the region. Another round of intensive travel is planned after the spring semester, during which Lowenthal is teaching an undergraduate course at USC in the form of a policy task force examining U.S. policy toward Cuba.

Lowenthal’s project is decidedly not an ivory-tower exercise. He has been chronicling some of his observations in a monthly column in America Economica, the most widely circulated business magazine in Latin America. His editorials about Latin America and U.S.-Latin America relations have appeared in major newspapers in the region as well as in the United States.

In November 2007 he was one of the principal briefers for the Aspen Institute Congressional seminar in Costa Rica, along with Pamela Starr, a senior lecturer in the USC School of International Relations and senior fellow in the USC Center on Public Diplomacy. At that retreat Lowenthal circulated the current draft of his recommendations on Latin America and Caribbean policy for the next president and Congress.

With the forthcoming book and his writing in between, Lowenthal hopes to help bring the U.S. government’s foreign policy perspective into the 21st century. “A lot of our policies were defined during the Cold War era,” Lowenthal said. “Looking toward the future of U.S. relations with Latin America, I think we need to adjust our lenses and our policies.”

Wayne Lewis

Faculty News

continued from page 26

Chicago.

Karen Halltunen of history has received an Innovation Inside curriculum award from the USC Stevens Institute for Innovation for her Freeman House Project. The award recognizes faculty who are enhancing their existing classes in experimental ways to best cultivate innovative traits and skills in students. In her exploration of original teaching methods, Halltunen initiated a project in which students learn how to broaden the impact of historical research by engaging in a multiyear, interdisciplinary undergraduate project on the 20th century historical environment of Frank Lloyd Wright’s Freeman House.

The USC Parents Association in partnership with the Office of the Provost recognized Emily Anderson of English with a Teaching and Mentoring Award. The awards provide parents with an opportunity to publicly thank faculty members for mentoring and guiding their sons and daughters, and they are awarded to three exemplary USC instructors each year.

A Lecture in Vienna

Thorsten Becker of earth sciences gave the C.F. Gauss lecture of the German Geophysical Society at the European Geoscience Union meeting in Vienna in April 2008.

Pure Poetry

Susan McCabe of English won first prize in the Agha Ali Shahid Poetry Competition, judged by award-winning poet Cole Swensen, for Dantes’ Nightmare (University of Utah Press, 2008).
Richard Thompson Wins Lashley Award

Memory expert joins ‘who’s who in neuroscience’ who have received honor

Univrsity Professor Richard Thompson, holder of the William M. Keck Chair in Biological Sciences in USC College and one of the leading behavioral neuroscientists in the world, received the 2007 Karl Spencer Lashley Award from the American Philosophical Society on Nov. 9 in Philadelphia.

The Lashley Award is one of the most prestigious prizes in behavioral neuroscience, said Michael Quick, executive vice dean for academic affairs in USC College.

"It is probably the top prize in behavioral neuroscience and one of the top two or three awards given in the entire field of understanding the brain," Quick said. "The list of prior winners reads like a who's who in neuroscience. People like Roger Sperry, Eric Kandel, Torsten Wiesel and David Hubel, all winners of the Nobel Prize, were recipients of the Lashley Prize.

"I can't say that I was shocked to hear that Professor Thompson won this award. Very, very happy, but not surprised. Professor Thompson has spent his career identifying the neural basis of learning and memory, and for his entire career his laboratory has been at the forefront of answering this very difficult question. I can't think of a more deserving recipient."

Thompson already holds many honors, including a seat on the 24-member National Science Board and membership in the National Academy of Sciences and the American Academy of Arts and Sciences, as well as the American Philosophical Society.

Receiving the Karl Spencer Lashley Award is particularly meaningful for Thompson because the influential behavioral psychologist is a longtime hero of his. As an undergraduate at Reed College, Thompson devoted his senior thesis to testing one of Lashley's hypotheses. When Thompson was on the faculty at Harvard University in the '70s, he held a chair that had last been occupied by Lashley.

"It's very special for me," Thompson said. "He was the man who started my field in the United States."

Thompson, also a professor of psychology, has spent nearly a half-century studying the physical basis of memory, specifically the memory involved in classical conditioning.

Made famous by Russian psychologist Ivan Pavlov with his salivating-dog experiments, classical conditioning theory showed that animals can be taught to anticipate a reward. In 2002 Thompson became the first to identify and map the neural circuits involved in classical conditioning. In addition, Thompson and others have shown that the brain saves a memory by strengthening the synapses, or connections between neurons. Neurons also create new synapses during the learning process, which Thompson defines as the creation of memory.

Memory: The Key to Consciousness (Joseph Henry Press), a collaboration with longtime colleague Stephen Madigan of USC College, was published in 2005. As the winner of the Lashley Award, Thompson received a hand-illuminated certificate and $20,000 honorarium.

—Carl Marszalek

Quantum Specialist Elected APS Fellow

Daniel Lidar, co-founder and now director of the Center for Quantum Information Science and Technology, has been elected a fellow of the 6,993-member American Physical Society.

Lidar, who co-hosted the world's first Quantum Error Correction Conference on USC's University Park campus in December, joined USC College's chemistry department in 2005. He holds a joint appointment with the Ming Hsieh Department of Electrical Engineering at the USC Viterbi School of Engineering.

His research interests are in control of quantum systems, in particular quantum information processing. He has published more than 116 technical papers on these subjects, has two patents and has supervised 11 postdoctoral fellows and the dissertation research of six Ph.D. students.

"I was very happy to hear that Daniel was made a fellow of the American Physical Society," said Mark Thompson, chair and professor of chemistry in USC College. "His research in quantum computing was a tremendous addition to USC's visibility on the national and international research front. I am looking forward to more awards like this one as Daniel's career progresses."

Lidar came to USC following five years on the faculty of the University of Toronto. He earned his Ph.D. in physics from the Hebrew University of Jerusalem in 1997.

The American Physical Society Fellowship Program was created to recognize members who have advanced knowledge through original research and publication or made significant and innovative contributions in the application of physics to science and technology. They may also have made significant contributions to the teaching of physics or service and participation in the activities of the society.

—Eric Maskin

Mancall Appointed to Research Advancement Post

Early in the 2007-08 academic year, USC College historian Peter Mancall was appointed associate vice provost for research advancement.

In this role, he works with faculty in the arts, humanities and social sciences to stimulate new research activity. He focuses in particular on building research collaborations that increase USC's effectiveness in competing for funding from foundations and government agencies. The appointment also expands his work within the Center for Excellence in Research, in which he serves as a fellow, and calls for him to raise the university's profile among academic book publishers through events at USC.

Mancall is a professor of history and anthropology in USC College and director of the USC-Huntington Early Modern Studies Institute.

He teaches early American history, Native American history and the history of medicine and works frequently with teachers from the Los Angeles Unified School District. He is on the editorial boards of six journals, including the Journal of American History, Huntington Library Quarterly and Reviews in American History. He is the author of four books and the editor of nine more.

His 48-part lecture course "Origins and Ideologies of the American Revolution" is available from the Teaching Company. He is currently writing a book titled "Hudson's Fatal Journey: Muters on the Voyage of Discovery," to be published in 2009.

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Student News

Goldwater Scholars
Sonya Hanson, a junior majoring in biochemistry and minorin microbiology, and Ashley Shi, a junior biological sciences major, have been named 2008 Goldwater Scholars. For more information about Honda, see p. 6.) The Barry M. Goldwater Scholarship and Excellence in Education Foundation, created by Congress to encourage excellence in science and mathematics, awards only 300 scholarships nationwide each year.

Convocation Honors
Several College students took home awards at the university’s Academic Honors Convocation April 7. Sociology major Alexandra Shlitz won the Emma Josephine Bradley Bower Award, given to the graduating senior woman with the highest GPA. Andrew Horning, a senior majoring in chemistry, was honored with the University Trustees Award and the Phi Beta Kappa Undergraduate Award. Lucas Herchenroeder, a graduate student in classics, won the Phi Kappa Phi Ronald J. Wasinger Award. Outstanding Teaching Assistant Awards were given to Tabitha Ann Esther of earth sciences, Anca Lasc of art history and Michael Mezher of linguistics. Jeremey Zecch of earth sciences received the Rockwell Dennis Hunt Award, given to the graduating student who is also an alumnus most representative of Trojan traditions.

Brain Studying Brains
Elizabeth Andrews, a junior majoring in kinesthesiology, has received both an undergraduate research award from the USC Women in Science and Engineering Program and a Provost’s Research Fellowship for her research investigating molecular activity and energy production.

Scribe Honors
Anthony Sparks, a doctoral student in American Studies and ethnology, was awarded the 2006-07 Walt Disney Studio/ABC Entertainment Writing Fellowship. Sparks writes for the ABC Family TV series “Lincoln Heights,” and was nominated for a 2008 NAACP Image Award for his work on the show.

Geo Wilz
Doctoral student Rowan Martindale of earth sciences has been awarded a postgraduate scholarship by the National Science and Engineering Research Council of Canada.

Elected to Serve
In March, Max Slavkin, a junior political science major and vice president of the USC Student Route Student Government, was elected to the North Area Neighborhood Development Council, which represents USC and its surrounding neighborhoods.

Summer in Russia
Eric Christensen and Zlatina Sandalska, graduate students in Slavic languages and literatures, have been awarded Critical Language Scholarships from the U.S. Department of State to study in Russia over the summer.

A National Opportunity
Lee McAlpine, a senior majoring in geography, spent the spring semester on an internship with National Geographic in Washington, D.C., a highly selective program that accepts only eight to 10 students a term.

Bio Ballyhoo
Sophomore Alex Kikuchi, who majors in biological sciences and jazz studies, was accepted to the Jungshuler Scholars Research program at Columbia University for summer 2008.

In October 2007, John Ewing, a junior in biological sciences, received a “Volunteer of the Year” Community Excellence Award for his work for the American Cancer Society.

Freshman biological sciences major Rebekah Romaniuk had her essay, “An Academically Competitive Atmosphere,” selected for inclusion in Challenge de Talento (Mother and Son) and a “Volunteer of the Year” Community Excellence Award for his work for the American Cancer Society.

Josh Steele, a doctoral student in biology, was selected as a Knasus Fellow. The program selects highly qualified graduate students and pairs them with government hosts in Washington, D.C., for a one-year paid fellowship. Steele is working on the staff of Rep. Sam Farr.

American Studies Standouts
A number of doctoral students in the College’s American Studies and Ethnicity department have recently picked up prestigious honors.

Viet Le was selected as a Fulbright Fellow.

Emily Hobson won a dissertation year fellowship from the Women’s Studies Program at the University of California, Santa Barbara.

Wendi Cheng, Phuong Nguyen and Karen Yonemoto earned three out of the 10 Haynes Foundation Fellowships, given to the most promising students in arts and humanities.

Genevieve Carpin and Christyanna Grant received Ford Foundation Predoctoral Fellowships. Michelle Commandar was awarded a Ford Foundation Dissertation Fellowship for 2007-08. The three students are currently working on their dissertations.

Eyes on Taiwan
Pauline Yang, a junior majoring in political science, and Damon Ferrara, a senior majoring in international relations and East Asian languages and cultures, were invited by the USC U.S.-China Institute and the Taiwanese government to be official observers of Taiwan’s presidential election March 22.

Alumni News

Leslie Bernstein (Ph.D., biology, ’81) received the sixth annual American Association for Cancer Research (AACR)-Prevent Cancer Foundation Award for Excellence in Cancer Prevention Research. The award is given for significant contributions to the field of cancer prevention. Bernstein, internationally recognized as a pre-eminent researcher and scholar, was named professor emeritus of USC following her retirement in fall 2007.

Michael Buckner (B.A., international relations, ’63) is the author of The ABCs of Ethics: A Resource for Leaders, Managers, and Professionals. He wrote the book to help organizations promote ethical behavior and appropriately address unethical conduct. Buckner said, “The goal of The ABCs of Ethics is to provide an easy-to-read, fun and informative book on ethics.”

Stephanie Bugbi (B.S., health promotion, ’06) recently presented research at the second World Conference on Stress in Budapest, Hungary. Her study, “Stress and Night Eating Syndrome Among Undergraduates,” won first prize in the life sciences category at the 2007 USC Undergraduate Symposium for Scholarly and Creative Work. It examines how stress among college students may lead to abnormal eating habits, such as night eating, a potential risk for obesity later in life. The study was presented by Bugbi and Jataruung Wichtschon under the guidance of Donna Spurjut-Metz and Selena Nguyen-Rodrigues of the Keck School of Medicine of USC.

Patricia Cashman (Ph.D., geology, ’79) receives an Honorary Doctor of Science from Middlebury College May 25. A 1972 Middlebury alumna, Cashman is a structural geologist whose work focuses on the evolution of the Sierra Nevada basin and the late Paleozoic deformation in Northern Central Nevada. She is currently a research professor at the University of Nevada. Her sisters, volcanologist Katharine and geologist Susan, are also being conferred honorary degrees.

Jessica Davis (B.A., international relations, ’02) is among the 2008 inductees for the USA Gymnastics Hall of Fame. Davis, a 1996 Olympian and winner of several medals and titles, has lived all over the world and currently resides in Geneva, Switzerland, where she works for an organization that helps companies improve their policies and actions in developing countries.

Daniel Gibson (Ph.D., molecular biology, ’04) of the J. Craig Venter Institute was lead author of an article published in the Jan. 24 online edition of the journal Science that made headlines by describing the creation of the largest man-made DNA structure to date. The long-term goal of the Venter Institute team is to create fully synthetic organisms with applications in areas such as alternative energy, pharmaceuticals and environmen-

tal remediation.

Kina Grannis (B.A., social sciences/polymer science, ’97) won a national songwriting contest sponsored by Frito-Lay in February 2008. A 60 second video music for her song “Message From Your Heart” was played during the Super Bowl XLII broadcast, and she was awarded a recording contract with Interscope Records.

Jeanette Griver (M.A., psychology, ’94) has published her third children’s book, CURIO: A Shetland Sheepdog and Her Pals. The book has received honorable men-
tion at a number of book festivals. Griver is also co-author of Oh No! Not Another Problem — A Practical Approach to Solve Day-To-Day Problems.

Adriana Hernandez (Ph.D., anthropolo-

gy, ’06) has been awarded the Mediterrane Prize from the National Academy of Sciences for her paper on chimpanzees and their use of tools to dig for roots during the rainy season, which appeared in the Nov. 12 early edition of the Proceedings of the National Academy of Sciences. The prestigious award is given to only six journal articles per year in each branch of science. Hernandez’s study was selected from more than 3,600 papers.

Los Angeles Mayor Antonio Villaraigosa appointed Roella Hsieh Louie (B.A., English, ’63) to the Cultural Heritage Commission. Louie has previously served as deputy director of the Workforce Development Division for the L.A. Community Development Department and director for public art and cultural planning for the city’s Cultural Affairs Department. Louie is also a panelist and reader for the National Endowment for the Arts, and in 2002 published Urban Murals: A Guide to Public Art in Los Angeles (Balcony Press).

President George W. Bush nominated Nanci Langley (B.A., humanities, ’70) to be commissioner of the Postal Regulatory Commission for the remainder of a six-year term. Since 2002, Langley currently serves as director of the Office of Public and Government Relations at the Postal Regulatory Commission. Prior to that appointment, she served as deputy staff director of the Senate Committee on Oversight of Government Management, the Federal Workforce, and the District of Columbia on the Senate Committee on Homeland Security and Governmental Affairs.

Christina Kotz Cornejo (B.A., interna-
tional relations, ’86) was recently promoted to the rank of associate professor of film production at Emerson College. Her feature film, “3 Americas,” shot in Boston and Buenos Aires, Argentina, premiered at the 2007 Woodstock Film Festival. She also was recently awarded Emerson’s 2007-08 Mann Stearns Distinguished Faculty Award.

Jodi Miller (Ph.D., sociology, ’96) is the

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Writer-Director-Producer Mel Shavelson Dies at 90

Hollywood legend Mel Shavelson, comedy writer, producer, director and two-time Academy Award nominee for original screenplay, died in August. He was 90.

Shavelson, a longtime instructor at USC College's Master of Professional Writing (MPW) Program, died of natural causes in his Studio City, Calif., home.

"He was a wonderful, wonderful man," Ruth Shavelson, his wife of five years, said days after his death.

Shavelson wrote or collaborated on more than 35 films, directed a dozen and was a producer on scores more.

At USC College, Shavelson taught screenwriting. He often cracked to his students, "I’m a writer by choice, a producer by necessity and a director in self-defense."

Author Syd Field recalled his arrival in the MPW program, when he taught a class with Shavelson.

"Mel watched over me like a mother hen," Field said. "He wanted to make sure I was there for the students. He was a very, very sweet man."

He was also a tough taskmaster. If he didn’t like a student’s work, he bluntly said so. "His manner could be gruff," Field said, "but he had a heart of gold."

Shavelson go: his start in the 1930s as a gag writer for Bob Hope’s radio show. Later he wrote and directed Hope in "The Seven Little Foys," a 1956 film earning Shavelson an Oscar nomination. Two years later Shavelson wrote and directed "Houseboat," starring Cary Grant and Sophia Loren, also nominated for an Oscar.

He directed a legion of Hollywood stars, including Henry Fonda and Lucille Ball in the 1968 film, "Yours, Mine and Ours." Shavelson also wrote the family comedy, remade in 2005.

Shavelson loved to tell his MPW students stories about working in the 1950s with Hollywood’s biggest stars. One tale involved a lovestruck Grant during the making of "Houseboat." When Grant remained unrelenting in his pursuit of Loren, who wasn’t interested. Loren rushed her marriage to producer Carlo Ponti to fend off Grant, Shavelson said. Her wedding to Ponti took place in Mexico City on location, the same day her marriage to the Grant character was filmed.

And that," Shavelson told his class with a wink, "is how you make a successful family comedy in Hollywood."

Beginning in 1969 Shavelson served three terms as president of the Writers Guild of America, West, where he earned the organization’s highest honor, the Laurel Award for Screen Writing. He was also a founder and president emeritus of the Writers Guild Foundation (WGF).

"Mel was deeply committed to the cause of equity and justice for writers," said Angela Kigo, WGF executive director.

In 1984 Shavelson founded the WGF’s library, home to more than 20,000 scripts and other materials. He took his students on tours of the Writers Guild Foundation Shavelson-Welsh Library in Los Angeles.

"The library was his dream," Kigo said. "Now, it’s his legacy."

Shavelson also created the Emmy award-winning television series and wrote for Academy Awards shows. He wrote, produced and co-directed the ABC miniseries “Joss, The War Years.”

He wrote two novels and four nonfiction books, including his autobiography How to Succeed in Hollywood Without Really Trying: PS—You Can’t, released on his 90th birthday.

Shavelson is survived by his wife, son Rich Shavelson; daughter Lynne Joiner; and grandchildren. Shavelson’s first wife of 63 years, Lucille, died in 2000.

—Pamela J. Johnson

In Memoriam: Hayward Alker

Hayward R. Alker, holder of the John A. McGone Chair in International Relations in USC College, has died. He was 69.

Alker was a leading scholar on world order and international conflict resolution, interests grounded in his Quaker faith and belief in the possibility of achieving peace. A member of the College faculty for more than a decade, he brought a mathematics background to the social sciences, and was renowned for his interdisciplinary approach, incorporating both statistical and humanistic techniques in his research. He previously had been a professor at MIT and Yale.

Alker suffered a cerebral hemorrhage Aug. 24 at his home in Black Island, R.I., and died that evening at Rhode Island Hospital in Providence. Alker and his wife, J. Ann Tiefert, professor of international relations in USC College, split their time between homes in Black Island and Santa Monica.

"It’s a huge loss for the College, and a personal loss for me," said USC College Dean Howard Gillman. "He was an amazing, innovative scholar —one of the giants in his field. But mostly I am thinking now about his passion for his work, for his students, and the joy he exuded when he was sharing new ideas. He was a great man, a force of nature."

Laurie Brand, professor and director of international relations at USC College, said, "He was deeply committed to community. He was a terrific mentor, who worked tirelessly on behalf of his students... He also had the most fertile, inquisitive and creative mind of anyone I’ve ever had the pleasure of knowing."

USC College Vice Dean Steven Lamy, who was director of international relations from 2001-2006, called Alker "a powerful and influential voice in our field."

In a chapter about Alker in The Future of International Relations: Masters in the making? (Routledge, 1997), Heikki Patomäki of the University of Helsinki wrote, "As scholars in the field, we could learn from Alker’s learning, not only from the innovative paths of his long voyage. In other words, we should be interested in both what and how he has learned."

Alker summed up this progression in Reflections and Reformulations: Humanistic Methodologies of International Studies (Cambridge University Press, 1996), a magnum opus that laid out his neo-Classical approach, alluding to and analyzing a cast of great thinkers through the ages.

"No one else was capable of doing this," said Nicholas Onuf, a former research fellow at USC and longtime friend and colleague to Alker. "Not anybody, ever, in the field of international relations had this kind of breadth, this kind of reach."

Alker’s other books include Journeys Through Conflict (Rowman & Littlefield, 2001) and Mathematics and Politics (Macmillan, 1963).

Alker was born in New York City in 1937 and raised in Greenwich, Conn. He attended Brunswick School, where he was the first student in the school’s history to earn straight As. He received his bachelor’s in mathematics from MIT in 1959, earning a 1960 master’s and 1963 doctorate in political science from Yale University.

Alker is survived by his wife; his brother, Henry; his sister, Charity; three daughters, Joan, Heather and Gwendolyn; and six grandchildren.

—Wayne Law
Obituaries

Herbert E. Alexander, 80, died April 1 of cancer. He was Distinguished Professor Emeritus of Political Science at USC and a pre-eminent scholar of political finance and election reform studies. Alexander taught at Princeton and USC, also serving briefly as visiting faculty at Yale and Petron. Considered America's foremost authority on campaign finance, he advised presidents and governmental agencies, and wrote 20 books and more than 350 monographs and articles on the topic. He was preceded in death by his wife, Nancy G. Alexander, and granddaughter Victoria Alexander. He is survived by three sons, Michael, Andrew and Kenneth; five grandchildren; and his companion, Barbara B. Seidel.

Marshall Buchanan Armstrong, 80, (B.A., ’60) died Jan. 13. He was a decorat-ed war hero. A Marine fighter pilot, Armstrong flew more than 125 missions during the Korean War and more than 300 missions during the Vietnam War. He was awarded the prestigious Flying Cross Medal and a number of other medals. He was preceded in death by his first wife, of 39 years, Gloria Finley. He is survived by his wife of 1 year, Maggie Armstrong.

Marjorie Klein, 87, (’41) died Feb. 5 of natural causes. She worked closely with her husband — USC Life Trustee Herbert G. Klein (’49) — in his career in journalism and politics, serving as a hostess, campaign speaker and presidential representative while he served as President Nixon’s director of communications. She later founded the Achievement Awards for College Scientists Foundation, which raises funds for science scholarships at USC.

San Diego-area universities. In addition to her husband, she is survived by daugh-ter Patty Root (’79) and Joanne Young (’67; three grandchildren; and two great-grandchildren.

Jack Linkletter (B.A., English, ’59) died Dec. 18 of lymphoma. He was a long-time television host and radio personality. Son of TV legend Art Linkletter, he is best known for hosting shows such as “Here’s Hollywood.” “America Alive!” and “Hooraynarry.” He was president of real estate development company Linkletter Enterprises. He is survived by his second wife, of 14 years, Charlene; their children Mike and Dennis Linkletter, and Laura Ann Rich; stepchildren Marilee and John Crain; parents Art and Lou; sisters Sharon Hensley and Dawn Griffith; and 11 grandchildren.

Ronald Love (M.A., history, ’82, Ph.D., history, ’87) died Feb. 7. He was a scholar of 16th and 17th cen-tury France. In 1999 Love was promoted to professor of history at the University of West Georgia, where he was held in high esteem by both faculty and students. In a West Georgia article, one former student expressed appreciation for Love’s teachings, saying, “Dr. Love’s class reshaped me as a student.”

Carl Henry Oppenheimer Jr., 86, (M.A., bacteriology, ’49) died Dec. 26 in an auto accident. He was an ecological researcher renowned for his studies on how organic meth-o ds to mitigate pollution. Oppenheimer, who served in the Navy during World War II, received his doctorate from Scripps Institution of Oceanography in 1951. Oppenheimer taught microbiology and oceanography at colleges including the University of Miami, Florida State University and the University of Texas. He is survived by his wife, Nali Amidt Moreno; children
douglas, John and Donna; and step-daughters Jen and Patricia.

Dorothy Schechter, 73, (B.A., ’62) died Nov. 16. She was an attorney and public servant. She continued studying at USC, earning a 1964 law degree. In 1978 Schechter was appointed county counsel for Ventura, the first woman in California to serve in such office. She was later president of the Ventura County Bar Association. She is survived by her husband of 54 years, Thomas L. Schechter; and brother, Ernest Buehning.

Vernon "Doc" Simpson, 80, (B.A., biological sciences and psychology, ’40) died Feb. 12 of pneumonia. He was a longtime educator who founded Montclair College Preparatory School in Van Nuys, Calif. Simpson served in the Navy during World War II and afterward taught in public and private schools. He earned his master’s from California State University, Northridge, and his Ph.D. in educational psychology from UCLA. He is survived by his wife, Monette; brothers Ralph, Virgil, Bill and Bob; and sister, Connie West.

Bernard Tarver, 52, (B.A., physical education, ’78) died on Nov. 17 of cancer. Active in the USC Black Alumni Association, Tarver worked for 29 years in the brewing industry. He helped establish scholarships at USC, and was involved in philanthropy beyond the Trojan Family, including the United Negro College Fund, the Boys and Girls Clubs, and the Los Angeles Urban League. While at USC he was on the 1975 national champi-onship football team and played in three Rose Bowl games. He is survived by his wife, Cynthia; children Kelley, Kaylen, John and Christopher; brothers Roger and John; and sisters Patricia Headle, Dells. Owens, Ruth Tarver and Ann Arnold.

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author of Getting Played: African American Girls, Urban Inequality, and Gendered Violence (New York University Press, 2008), a book shedding light on the harsh realities facing young African-American women. Based on research funded by the National Consortium on Violence Research, the book examines structural inequalities that promote racialized urban poverty create an environment that heightens and shapes violence against young women.

Christopher Peterson (Ph.D., compari-tive literature, ’02) is the author of Kindred Spirits: Death, Mourning, and American Affinity (University of Minnesota Press, 2007). The book explores the historic refusal to recognize kinship relations among slaves, interracial couples and same-sex partners. Barneys Rosenzweig (B.A., political science, ’59), creator of the award-winning TV series “Cagney and Lacey,” has writ-

ten Cagney and Lacey … and Me: An Inside Hollywood Story. It relays the journey of the series, highlighting the staff of female writers, the 14 Emmys it won and the unprecedented letter-writing campaign that got it back on the air in 1983 after it was cancelled. Rosenzwieg has recently hosted a radio show in Los Angeles, past the University of Arizona’s School of Communication for the USC.

Dolores Takemoto (Ph.D., biology, ’79) was a 2007 recipient of the Commer tce Bank Distinguished Graduate Faculty Award at Kansas State University. Takemoto, a professor of biochemistry, is investigating the molecular basis for vision. She and her associates were the first to determine the genetic basis of retinal degeneration, a discovery that led to the identification of a family of genes that affect visual perception.

Carl Terziian (B.A., history, ’57), head of public relations firm Carl Terziian Associates and a past president of the Los Angeles Fire Commission, has received two awards honoring his commu-

nity and philanthropic contributions. The Wellness Community-West Los Angeles recognized Terziian at its Tribute to the Human Spirit Awards Gala on April 3, and the New West Symphony honored him with a banquet and concert on April 27. Terziian was a State Department Goodwill Ambassador for President Eisenhower, dean and professor of government at Woodbury University and a public affairs director for architects Charles Luckman. Over the years, Carl Terziian Associates has helped more than 4,500 clients.

Robin Toblin (dual Ph.D./M.P.H., psy-chology, ’07) of the Centers for Disease Control and Prevention (CDC) was the lead author of a report on the "choking game," in which youths attempt to ex-plore a high by cutting off the oxygen supply to the brain. Her article was pub-lished by the CDC, and it received media coverage from the New York Times, the Wall Street Journal, CNN, USA Today, the Los Angeles Times and the Washington Post. Toblin is hoping to raise awareness about the warning signs and dangers associated with the popular youth activity.

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Channeling Raymond Chandler

USC College’s Judith Freeman uncovers the mystery of the novelist’s life

in her new book, author Judith Freeman imagines herself slipping into the living room of her protagonists Raymond and Cissy Chandler.


Freeman envisions Cissy reclining on a couch, filing her nails, listening to Mozart and gazing out a window at the sea. She sees Raymond doing on her. Taki, the couple’s black Persian cat, iscommanding their attention, amusing them, curled up between them on the sofa, which they do not call sofa, but a divan or settee.

In *The Long Embrace*, Freeman, an instructor in USC College’s Master of Professional Writing (MPW) Program, presents a remarkably intimate, vivid picture of arguably America’s greatest crime fiction writer and his otherworldly marriage to a woman 18 years his senior.

Reading the 337-page book feels almost like bellying up to the bar with the enigmatic Chandler himself and getting to know him over a few gimlets straight up—one of Chandler’s favorite cocktails.

We learn Chandler preferred gimlets when Freeman began haunting Los Angeles cafes, bars and hotels described in Chandler’s fiction. She wants to taste what Chandler tasted and begins ordering gimlets.

“A real gimlet is half gin and half Rose’s lime juice and nothing else,” Chandler once wrote. “It beats a martini hollow.”

Written in an engaging, almost gothic journalism style, Freeman’s book takes readers on an intense ride filled with slice-of-life L.A., detailed descriptions, and even scents and tastes exposing Raymond Chandler’s psyche.

Author Janet Fitch, also an MPW instructor, said it best when describing the book as “part biography, part detective story, part love story and part séance.”

Freeman was able to speak with such authority because of her unrelenting, gumshoe reporting. With the tenacity and zeal of the morally upright Philip Marlowe, the private eye hero in Chandler’s novels, Freeman tracked down, visited and photographed the 36 or so residences where the constantly-moving Chandler once lived in Southern California, mostly in Los Angeles.

She even spent time in a room at the Mayfair Hotel in downtown Los Angeles, where Chandler lived briefly during a split from Cissy. In the book, Freeman describes gazing out the window at the same view Chandler must have had when he threatened to jump during that turbulent time in his life—one of the alcoholic crime author’s few suicide threats or attempts.

“I looked down,” Freeman writes. “It was a very long way to the sidewalk.”

She probed Chandler’s imagination by visiting many of the vestiges of Los Angeles where Chandler set his stories.

To gather more insight into Cissy, Freeman traveled to New York and tracked down the address where Cissy lived when she was a young woman working as a nude model for artists. Freeman spent time in Cissy’s old neighborhood in Harlem.

Understanding the twice-married Cissy and her ironclad bond with Chandler was not an easy task for Freeman.

Chandler met Cissy shortly after he left London at age 24 and arrived in Los Angeles in 1913. The fair-haired beauty and classical pianist was “irresistible,” as Chandler put it, “without even knowing it or caring much about it.”

She was also married to her second husband, a good friend of Raymond and his mother’s. When Chandler enlisted in the Canadian military and took off to fight in World War I, the two wrote each other, presumably impassioned love letters.

They eventually married in 1924. continued on page 24