

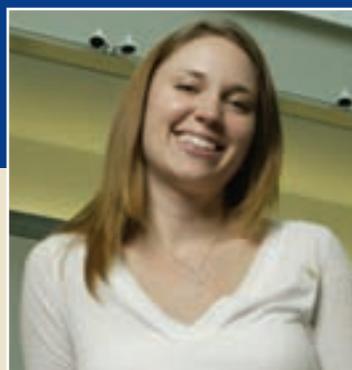
# UCLA COLLEGE

## R E P O R T



# A showcase of the people and progress in the UCLA College of Letters and Science

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*On the cover: Three views of the future for biological studies at UCLA—the new Life Sciences Building. With 49 ultramodern laboratories, classrooms, and offices for faculty and students from three departments in the College, the 176,000-square-foot facility will be a milestone structure for UCLA, featuring flexible workspace that can be shaped to meet the ever-changing needs of research and teaching. Construction for the Life Sciences Building begins later this year on the east side of campus, and when completed will form a cornerstone of UCLA's Court of Sciences. More details of the project will be featured in the next College Report.*

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*Unless otherwise indicated, all photos by Reed Hutchinson.*

*Cover images courtesy of the UCLA Urban Simulation Team.*

# UCLA COLLEGE

## R E P O R T



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Scholars in social psychology are developing new insights for our understanding of how humans are affected by the issues and conditions we face every day.

## UCLA COLLEGE OF LETTERS AND SCIENCE

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*Executive Dean*

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*Acting Dean of Physical Sciences*

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Dear Friends:

I thought you would like to know about our plans for addressing one of the College's most important priorities.

Graduate studies forms the core of scholarship at a research university. Graduate students are key members of the academic community; they are valued intellectual colleagues and partners in research for our faculty, and they play vital roles for the entire campus community as teachers and mentors for undergraduates. Graduate students represent the future—our next generation of scholars.

Yet in recent years, the number of graduate students at UCLA has declined steadily. Even with premier scholars and superb campus facilities, in many fields we have not been able to compete for graduate students with other elite research universities—primarily because many private institutions have deep and long-established fellowship programs, as well as other funding sources.

We are working to reverse that trend, and I'm pleased to tell you that we are already seeing some gains.

The College has allocated \$4.5 million over the next three years for graduate student fellowship support. This year, the College will set aside \$1.8 million in additional support for graduates arriving for the 2007–08 academic year. These fellowships will be known as “College of Letters and Science Fellowships.” These new allocations will assist us with our efforts to improve the quality of graduate education in the College.

In addition to increasing our internal funding sources, one of our major priorities will be to build our core endowments for graduate student support.

The College has been successful this past year in securing additional gift funds. As of April 30, the College has raised \$88.3 million for student and faculty support as a result of our focus on the “Enhancing Academic Excellence” Initiative—the largest total for any academic unit on campus. (See page 5)

These gifts are already creating major benefits for our graduate student support. For example, Ralph and Shirley Shapiro provided a generous gift that created the Shapiro International Fellows Program. Through the new program, the College is supporting 22 graduate students representing disciplines across the College. The program will allow for another class of 22 International Graduate Fellows to be recruited this year. The UCLA Alumni Association—through its support of the Ensuring Academic Excellence Initiative—has also agreed to provide the College with new graduate fellowship support funds next year.

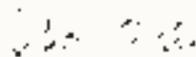
In total, the College will have more than \$2 million in new resources to be deployed specifically for incoming graduate students.

This new support is a good beginning.

In May, Garen Staglin, former chair of the College Campaign Cabinet, prepared a program to the College's Graduate Council that highlighted the importance of private support for graduate students. Garen emphasized that not only is increased support important for the immediate needs of our graduate students, but it also represents the future for our entire graduate program.

I look forward to your involvement in our plans.

Sincerely,



Patricia O'Brien  
Executive Dean  
UCLA College of Letters and Science



Executive Dean Patricia O'Brien (second from left) and UCLA Alumni Association President Yolanda Nunn Gorman meet with prospective students and their families at one of the College Welcome Days for 2007. In all, the College hosted 14 events for more than 6,000 admitted applicants and their families, who met with College faculty, students and more than 110 Alumni Ambassadors.

# College News

An update of events and progress in the UCLA College of Letters and Science.

## New Deans Join College Leadership

**Two distinguished faculty have been named acting deans of the College of Letters and Science.**

Reynaldo Macías and Nicholas Entrikin have assumed leadership roles in the College of Letters and Science.

Macías has been named acting dean of the Division of Social Sciences, the largest academic division in the College.



*Reynaldo Macías, interim dean of social sciences*

Macías brings to his new position 35 years of academic leadership and national service, as well as a long career in research and teaching about language, education, literacy, teacher preparation and multicultural curriculum issues.

Macías became dean when Scott Waugh was named UCLA's acting executive vice chancellor and provost.

Macías has served on the UCLA faculty since 1998, and is currently chair of the Department of Chicana and Chicano Studies. He holds joint faculty appointments in the departments of Education and Applied Linguistics.

In 1994, Macías was honored by the National Association for Bilingual Education as a pioneer in the field. He has served as the assistant director of the National Institute for Education, responsible for Reading and Language Studies. And, in 1996, he was appointed by President Clinton to the Advisory Board for the National Institute for Literacy.

In the International Institute, Entrikin, a professor of geography and director of the interdepartmental program in Global Studies, has been named interim dean and vice provost.

Entrikin assumes leadership of the institute July 1 from Ron Rogowski, who completed his two years as interim dean and vice provost, and now begins a long-



*Nick Entrikin, interim dean and provost of the UCLA International Institute*

planned schedule of scholarly work in his field, including a Humboldt Fellowship.

Entrikin has extensive involvement in international issues, both in his research and in university administration. He is a cultural geographer who studies the philosophy of geography and the geography of Europe.

As director of the global studies interdepartmental program, Entrikin directed UCLA's newest undergraduate field. Global studies provides UCLA undergraduates with an interdisciplinary education on the principal issues confronting today's globalized world.

May 21 marked the College's annual Science Poster Day, a program that highlights the research conducted by undergraduates. Coordinated by UCLA Undergraduate Research Center for Science, Mathematics and Engineering, 2007 Poster Day featured research by more than 130 students.



## Continued High Marks for UCLA

**In UCLA's second comprehensive survey on the academic experience and campus life, seniors again report strong rankings for the university.**

Two years ago, UCLA initiated an ambitious project to survey seniors graduating from the College of Letters and Science to learn their views about life at UCLA and their experience in the classroom. The result produced responses to a wide range of questions, including high levels of satisfaction for the UCLA experience overall, campus life, and their academic experience.

In the current senior survey, that trend continues.

UCLA seniors continue to report strong satisfaction with their academic experience and campus life and feel intellectually challenged by the curriculum and the faculty.

Broad campus experiences were also ranked highly, including a wide range of experiences with students from diverse backgrounds.

"Students see a very competitive environment at UCLA, but at the same time they are both challenged and satisfied with their academic experience," said Judith L. Smith, vice provost for undergraduate education. "We are encouraged by the positive responses and believe that our graduating seniors are well prepared

to pursue post-baccalaureate studies in a variety of areas."

Janina Montero, vice chancellor for student affairs, said survey results also show that students embrace the diversity of their experiences on campus.

"There was a high level of satisfaction expressed overall about campus life," Montero said. "On the other hand, we learned more clearly there is not as much interaction between groups as we would hope. We want to enhance the sense of belonging, receptivity to hearing others, and the exchanging of different ideas and points of view. We also want all students to feel comfortable about expressing their views among their peers on campus."

Students also provided feedback about their education plans after graduation. A majority indicated plans to pursue post-baccalaureate degrees—53 percent said they plan to pursue a master's degree, 14 percent said they plan to seek a law degree, 14 percent said they plan to pursue a medical or health science professional degree and 12 percent expressed interest in a doctoral degree (students were allowed to select more than one category).

This was the second annual senior survey, which was a collaborative effort of the UCLA Division of Undergraduate Education, Student Affairs and the Alumni Association. In assessing their overall campus experiences, 86 percent agreed or strongly agreed that UCLA has more to offer than most universities in the way of

## UCLA Senior Survey 2006

(Student Views: Satisfied/Very Satisfied)

Overall UCLA experience: 94%

Academic experience: 93%

Intellectually challenged by faculty in my major: 92%

Student and campus life: 91%

academic opportunities, 79 percent agreed or strongly agreed that UCLA's social opportunities are greater and 74 percent said the campus has more leadership opportunities to offer than most universities.

The vast majority of students praised the value of their education. Eighty-four percent agreed or strongly agreed that, given the cost, a UCLA education is an excellent value. Students also expressed beliefs about alumni contributions to the campus—79 percent agreed or strongly agreed that financial contributions from alumni are important to maintaining UCLA's excellence, and 64 percent agreed or strongly agreed that they plan to support UCLA financially in the future.

The survey results can be found at [www.college.ucla.edu/seniorsurvey](http://www.college.ucla.edu/seniorsurvey).



# Awards

*Paul Terasaki (B.A. 1950, M.A. 1952, Ph.D. 1956) accepts the 2007 Honorary Fellows Award of the College of Letters and Science from Executive Dean Patricia O'Brien. Terasaki, along with his wife, Hisako, were honored at the College's annual dinner on April 17. The Terasakis were named Fellows for their commitment to excellence and philanthropic leadership in the College of Letters and Science.*

*Also honored at the event were six recipients of the Charles E. and Sue K. Young Undergraduate Awards and the Young Graduate Student Awards. These awards are made possible with generous support from Louis (B.A. 1935) and Evelyn Blau. For more on the student winners, see page 14.*

# Initiative to Ensure Academic Excellence

## UCLA College of Letters and Science

\$ millions



### COLLEGE LEADS THE CAMPUS IN THE ENSURING ACADEMIC EXCELLENCE INITIATIVE

As of April 30, the College of Letters and Science has raised \$88.3 million for student and faculty support as a result of its focus on the “Ensuring Academic Excellence Initiative”—the largest total for any academic unit on campus.

Of these gifts to the campus’ five-year Ensuring Academic Excellence Initiative, \$35.2 million are designated for faculty support, resulting in the creation of 23 new endowed chairs since the initiative began in June 2004. Fundraising for student support to the College now totals \$53.1 million.

Through April, the College has raised \$16.7 million for the Ensuring Academic Excellence Initiative in the 2006–07 academic year—“well on our way,” said Patricia O’Brien, executive dean of the College, “toward another outstanding year.

“This success in our fundraising for the College is a result of our focus on our high-priority needs: student and faculty support,” said O’Brien.

## National Honors for Math Department

**UCLA’s Department of Mathematics has been recognized for achievement by the American Mathematical Society.**

The UCLA mathematics department has received the American Mathematical Society’s 2007 Award for an Exemplary Program or Achievement in a Mathematics Department.

UCLA’s department is “an outstanding model of all that a mathematics department can be,” the society declared.

The award, given annually, recognizes a mathematics department that has distinguished itself by undertaking an innovative or particularly effective program.

The society praised UCLA’s mathematics department for creating “a comprehensive vision for its undergraduate, graduate

and postdoctoral training programs that involves important interactions with the Institute for Pure and Applied Mathematics (IPAM) at UCLA, which is funded by the National Science Foundation (NSF). UCLA has become one of the biggest pipelines to mathematical careers in the United States.”

The mathematical society also lauded UCLA’s “first-rate faculty of internationally-recognized mathematicians” and noted the “tremendous growth” in the department’s undergraduate program over the past 10 years, as well as the substantial growth in its graduate program since 2000.

The department attracts many of the best graduate students in California, the United States, Europe and Asia, said Christoph Thiele, professor and chair of mathematics. It also offers opportunities for undergraduates to participate in research.

In 2000, the department’s graduate program was awarded a \$5 million Vertical Integration of Research and Education grant by the NSF. The program, under the direction of Professor Robert Greene, initiates changes in how professional mathematicians are trained, promoting interaction between mathematics and other fields. The program now includes a projected 195 students for fall 2007. In 2005, the NSF renewed the grant.

The mathematics department also runs successful K–12 math education programs and has had a decades-long relationship with California public schools.

This fall, five new faculty members will join the department.

“We have hired distinguished faculty that any mathematics department would be happy to have,” said Thiele. “We are delighted they chose UCLA.”

# A Joint Mission to Explore Critical Climate

By Aaron Dalton

A new collaboration between UCLA and NASA's Jet Propulsion Laboratory is focusing on the complex issues that involve global climate change and its effect on regions and environments.

**T**he lifeblood of Southern California is snow.

This land of beaches, valleys and palm trees depends on the snow pack in the mountain ranges of California for almost all of its water. The snow that falls in the Sierra Nevada, the Sierra Madre, the San Gabriel Mountains and other peaks melts into the water that allows Southern California to thrive.

But how might shifts in climate—such as weather change associated with global warming—affect the seasonal snow pack in California's mountains? Estimates vary widely.

“The California Climate Change Center released a report in 2006 suggesting that snow pack levels could decrease, possibly dropping from 30 to 90 percent over the next 50 years, depending on the amount of warming,” said Randall Friedl, chief scientist in the Earth Science and Technology Directorate of the Jet Propulsion Laboratory (JPL).

JPL, the Pasadena-based NASA laboratory, is renowned for its work on the design of unmanned spacecraft that explore the Solar System. But JPL also looks inward to global studies, and has launched Earth-orbiting satellites like CloudSat and CALIPSO to record data on the behavior of clouds and airborne particles in the atmosphere.

The scientists and engineers at JPL are masters at data collection—which comes back to the question of snowfall in California. The report by the California Climate Change Center packs an ominous punch if its worst-case scenario is correct, but with the currently available data, or lack thereof, that's a big “if.”

“If we had a 90 percent decrease in snowfall in the state over the next 50 years, the implications would be pretty dramatic,” said Friedl. “A lot of that uncertainty is due to how much warming will take place. Even with a given amount of warming, there are questions around how much less snowfall we will get. That in turn depends on elements like cloud cover and soil moisture.”

JPL develops findings about cloud cover and data collection, but the experts on building models to understand the implications of the data are based at UCLA. The university had been working with JPL for several years on isolated projects, but both organizations agreed last year to formalize the working relationship into a

*The Southern California coast—a delicate interaction between urban and natural forces. What are the changing factors that affect weather and ecosystems? The Joint Institute for Regional Earth System Science and Engineering is starting new studies of these questions—especially how they affect California climate.*

# e Questions

new collaborative organization, naming it the Joint Institute for Regional Earth System Science and Engineering, or JIFRESSE ([www.jifresse.ucla.edu](http://www.jifresse.ucla.edu)).

The institute officially opened on the UCLA campus last October. Since then, work has begun in earnest on developing a regional climate model encompassing land, ocean and the atmosphere to analyze data pouring in from the JPL satellites. Thus far, seven UCLA faculty members and nine JPL scientists have committed themselves to JIFRESSE's work. As funding for the Joint Institute grows, K.N. Liou, the director of the institute, hopes to have 15 UCLA researchers working alongside 15 JPL scientists in the next year.

"Regional climate change is our focus," said Liou, who is also a professor of atmospheric sciences and former chair of the Department of Atmospheric and Oceanic Sciences. "This is a topic of interest to both California and the nation. Our findings here can be applied to other regions—even to the Tibetan plateau."

JIFRESSE is in the process of recruiting more post-doctoral scholars and recently named JPL research associate Brian Kahn, who studied at UCLA, as a visiting researcher.

"Brian is a bridge between the two institutions," said Liou. "We intend to recruit other post-docs; by July of next year, we will have several more post-docs than we have now."

## Complimentary Capabilities

When Friedl talks about JPL's motivation for working with UCLA to create JIFRESSE, he uses words like "momentum" and "vision." JPL and UCLA had worked together for years before forming the Joint Institute, but these earlier collaborations lacked the scale needed to obtain the best results.

"We thought about the way our two institutions' skills match," said Friedl. "JPL launches lots of satellites. We have ten Earth-looking satellites or instruments operating right now. Our main focus is on getting lots of data. UCLA, on

the other hand, looks at processes. The university has a lot of modeling capability."

JPL and Friedl recognized that the frontier in earth science involved connecting data from models in a way that could make progress on improving the credibility of the analysis.

Think of the weather forecast. Networks compete to attract viewers based on accurate predictions and showmanship. Each station has access to basically the same data—temperature, barometric pressure and so forth—so the difference can only be in the algorithms and models they use to analyze the data.

Whether the climate is rainy, snowing or clear depends on a mind-boggling range of variables that interact with each other in ways that scientists work to understand using computer models.

The only way to improve climate models is by using physically-based scientific methods: test, analyze and repeat.

"We are starting to create an environment in which we take data, format it correctly and inject it into models to test those models," said Liou. "The JIFRESSE researchers can run a model that tells us how the world should look, correct it using real data from satellites that know how the world does look, then use this new data to try to close the disparity between the model and reality."

## Think Globally, Analyze Locally

Climate change overall, and global warming in particular, are now part of the public agenda more than ever before. And while many scientists agree that global average temperatures have been creeping upward, much uncertainty exists over how these global changes will be distributed in regions and microclimates around the planet. Friedl says that so far it's been difficult for earth science models to predict with a reasonable degree of certainty how specific areas like

Southern California will fare if the Earth warms.

For Californians and specifically for Los Angeles residents, not to mention government officials, obtaining more accurate forecasts is of paramount importance in making policy and lifestyle decisions. A 30 percent drop in the Sierra's snowpack in 2057 might hurt only skiers and cause occasional concerns about drought. A 90 percent decrease would be much more damaging.

The California Climate Change Center publishes its report every two years; Liou and Friedl are hoping that JIFRESSE will have the first results from its models in time to help the commission speak with greater confidence on the potential affects of climate change on the Southern California landscape.

To accomplish this goal, the UCLA and JPL researchers will have to untangle a web of interlinked climatic causes and effects. For example, conventional wisdom holds that if

the Earth warms, plants will tend to grow more vigorously. This sounds positive, except consider the fact that plants emit hydrocarbons, one of the precursor gases to ozone formation. Combine those hydrocarbons with the nitrogen oxide pouring out of automotive tailpipes and ozone is formed. Ozone works its way up in the stratosphere to block dangerous UV rays, but breathing it

regularly corrodes lung tissue and can cause infections.

So should Americans start wearing gas masks or ventilators? Not just yet.

"Most predictions say that air quality will worsen in a warmer climate if all things are equal, but this outcome is highly uncertain," said Friedl.

The problem with the real world—unlike models—is that all things are never equal. Variables change all the time, either independently of each other or because adjust-

ments in one variable have a ripple effect into another variable down the line.

Seeking to give planners and decision makers clues on what steps can be taken to keep us all from breathing ozone soup, the JIFRESSE team is developing new instruments to take air quality measurements across the Los Angeles Basin. Placed in a small laboratory on the top of Mount Wilson, the researchers will assess whether the measurements they take can improve air quality forecasts.

One of these instruments is an ozone spectrometer that measures light absorption along certain wavelengths to detect the presence of ozone. Another tool is an aerosol radiometer that measures the size and types of aerosols in the atmosphere. The radiometer being deployed on Mount Wilson is a next-generation version of one currently flying in orbit around the Earth aboard the MAISer (MultiAngle Imaging Spectroradiometer) satellite. Friedl described these radiometers as "advanced concept" devices that can analyze the way an aerosol polarizes light in order to deduce the shape (and thus the identity) of the aerosol particle.

Liou said that the researchers are making good progress on complex work. The earliest results from JIFRESSE's measurements and models will be released in the second quarter of 2008—a vital step in understanding the complex and critical questions about climate change that affect us all. 

**“Regional climate change is our focus. This is a topic of interest to both California and the nation. Our findings here can be applied to other regions—even to the Tibetan plateau.”**



*K.N. Liou, professor of atmospheric sciences and director of the Joint Institute for Regional Earth System Science and Engineering.*

[www.jifresse.ucla.edu](http://www.jifresse.ucla.edu)

# Microscale

## Mass Production at the Microscale

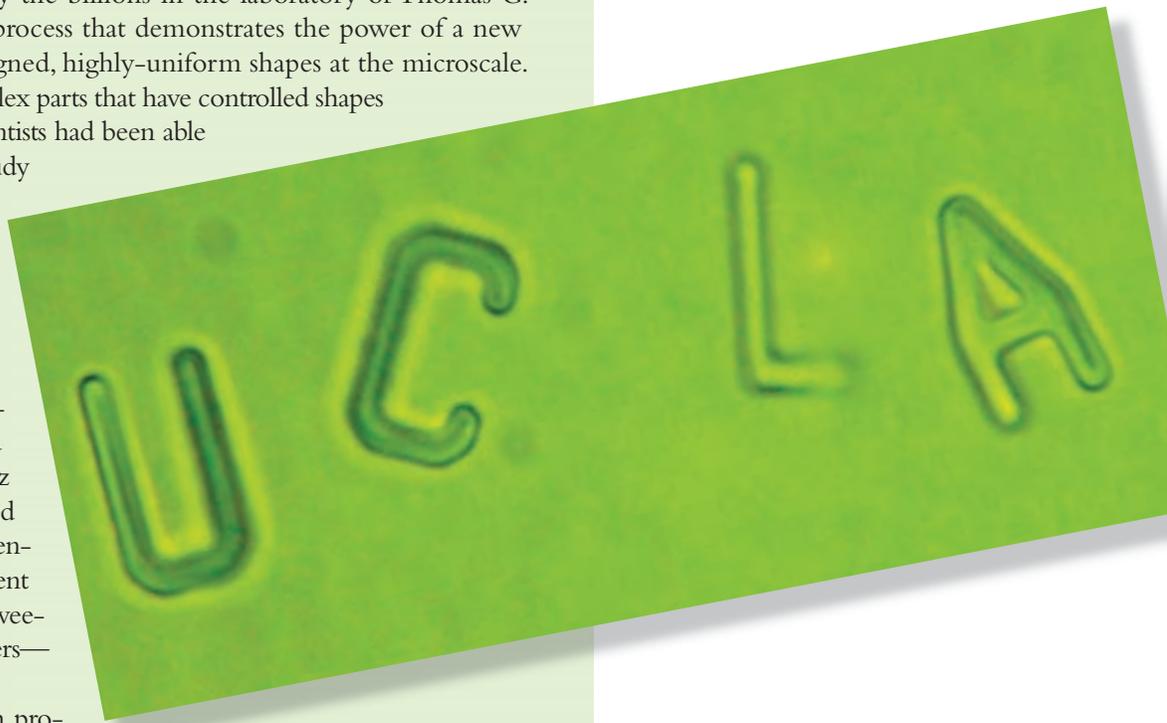
Each of the letters in the photo shown below are about four microns wide, or roughly one-tenth the width of a human hair. Shimmering with a fluorescent glow, the letters—actually particles in the shapes of the entire alphabet that were produced by the billions in the laboratory of Thomas G. Mason—were created using a process that demonstrates the power of a new method to make precisely-designed, highly-uniform shapes at the microscale.

“We can mass-produce complex parts that have controlled shapes at a scale much smaller than scientists had been able to produce,” said Mason, the study co-author and an associate professor of chemistry who holds the UCLA John McTague Career Development Chair.

Carlos J. Hernandez, lead author of the study and a UCLA chemistry graduate student, designed a customized font and produced the letters. Hernandez and Mason have also produced triangles, crosses and three-dimensional shapes. Graduate student James N. Wilking used laser tweezers to grab and move the letters—spelling “UCLA.”

The research process, which produces particles shaped like letters that are suspended in solution, is funded in part by the National Science Foundation. The particles can be downsized even further into shapes that are 100 times to 1000 times smaller than the width of a human hair. In this process is potential for functional devices at the nanoscale (one-billionth of a meter), such as chemical markers, tiny pumps, motors or containers that could have applications in medicine or industry. “We have a high degree of control over the parts that we make and are on the verge of making functional devices,” said Mason, also a member of the UCLA California NanoSystems Institute.

The success of the process creates a whole new list of research questions. “How can we control and direct the assembly of tiny components to make a machine that works?” Mason asked. “Can we cause the components to fit together in a controlled way that may be useful to us? Can we create useful complex structures out of fundamental parts, in solution, where we can mass-produce a small-scale engine, for example? We will pursue these research questions.” 



A new process demonstrates the power of a method to produce precisely-designed, highly-uniform shapes at the microscale—and smaller.

[www.chem.ucla.edu/dept/Faculty/Mason](http://www.chem.ucla.edu/dept/Faculty/Mason)

[www.college.ucla.edu/report/vol6\\_thomas-mason.pdf](http://www.college.ucla.edu/report/vol6_thomas-mason.pdf)

# A Unique Lens to Explore an Emerging Field

By Meg Sullivan

**F**or Professor of English Helen Deutsch, the study of disabilities “is a way of rethinking history and culture, and their relationship to the individual.”

Deutsch and more than 30 other UCLA faculty are building the core of a new interdisciplinary field in disability studies, exploring the subject through the spectrum of history, literature, the arts, health sciences, social issues and public policy, to name a few perspectives. Beginning this fall, 23 classes taught by faculty from 20 academic units will focus on little-known aspects of disability and society, and will count toward an academic minor in the burgeoning field.

Disability studies uses a unique lens to reveal previously overlooked aspects of society and culture, as well as practices and lapses within a range of contemporary professions. At UCLA, courses in anthropology, community health, education, English, gerontology, history, nursing, psychology, social welfare, sociology and Spanish will count toward the minor. In all, 32 faculty members have thrown their support behind the program, including a world arts and cultures professor who choreographs dances with disabled performers.

“This minor comes out of a growing body of work going on all over campus,” said Deutsch, an authority on disability in 18th-century literature.

The field grew out of the disability rights movement launched by Vietnam War veterans. In making their case for equal access and rights, activists in the 1980s started pressing for disability studies programs in American universities as a means of meeting the need for research into disability and the disabled.

At UCLA, faculty in the humanities—especially English professors—formed the first significant core of scholars who are active in disability studies, after being inspired by a wealth of Modern Language Association panels on the subject. As a result, most of the nation’s disability studies programs center around the humanities.

In contrast, the distinguishing feature of UCLA’s minor will be its breadth.

“Most other places have not fulfilled that original objective of disability studies because of their limited scope,” said Paul K. Longmore, a history professor at San Francisco State University and a pioneering disability studies scholar who advised UCLA on the development of the minor. “If you look down the list of faculty affiliated with this new minor, they’re from all over the campus. UCLA really has the potential to make a significant impact in a range of fields.”

Faculty expect the minor to be of special interest for disabled undergraduates.

“To know that there was someone like you in the past is crucial, and that’s

UCLA has created a new program that explores the range of issues that focus on disabilities, including a new undergraduate minor.

**“To know that there was someone like you in the past is crucial, and that’s largely absent for disabled people. To supply that past to people provides them with an identity, which is invaluable.”**

largely absent for disabled people,” said Christopher Baswell, a UCLA English professor who is disabled. “To supply that past to people provides them with an identity, which is invaluable.”

But faculty also expect that a field of such broad interest will be of interest to able-bodied and disabled scholars alike.

“I hope everybody will take these courses, because almost everybody is either disabled, will become disabled, or has someone close who will become disabled,” said Emily Abel, a public health professor who will lecture in the minor’s introductory course. “At one point or another, it’s a future that most of us will confront.”

Since 1995, UCLA has developed over 70 minors, most of which have been offered through specific departments. In cases where the intellectual breadth of the minor spans multiple disciplines, the minors have been established as freestanding programs under the purview of an academic dean rather than a single department chair.

The academic dean responsible for the disability studies minor is Judith L. Smith, UCLA’s vice provost for undergraduate education. The disability studies program is the second minor under Smith’s oversight. In 2006, UCLA also adopted a freestanding minor in civic engagement, which is housed within UCLA’s Center for Community Learning. The civic engagement minor served as the model for the disability studies minor.

“The structure provides a mechanism for coordinating the intellectual contributions of multiple faculty members, both in and outside of the College,” Smith said. “Undergraduates get the benefit from exposure not just to the College’s premiere faculty but also to faculty in the university’s influential professional programs.”

To receive a minor in disability studies, undergraduates will complete the equivalent of seven upper division courses. They start with “Perspectives on Disability Studies,” an introductory course that will be taught by Deutsch in the first two years, with faculty across a range of disciplines serving as guest lecturers. Students then must select two courses from a long list of electives, including “Psychology of Aging” through gerontology and psychology, “Culture and Mental Health” through psychology, “Culture, Illness and Healing” through anthropology and nursing and “History of Medicine: Historic Roots of Healing Arts” through history.

On top of this coursework, students must either fulfill a two-quarter internship with a community organization that serves the disabled or works on disability policy or complete a two-quarter research apprenticeship with a scholar conducting research related to disability issues. The minor culminates in a senior capstone project, for which students will be encouraged to create publishable-quality work.

“We’re very proud that the minor requires students to complete a rigorous capstone project,” Smith said.

While disability activism at UCLA can be traced to the Vietnam War era, the roots of disability studies go back at least 15 years, when disabled UCLA students started asking

for an academic unit that would address their own histories and concerns. But without broad support at the time, the quest withered.

The late UCLA history lecturer Jayne Spencer, who was quadriplegic, is credited with laying the groundwork for the minor in the late 1990s. The chair of the precursor to today’s University Committee on Disability, Spencer personally identified more than 100 UCLA courses that related to disability studies and recruited many of the faculty now behind the minor. The momentum slowed after Spencer unexpectedly died in 2003. But Deutsch and Lucy Blackmar, assistant vice provost for undergraduate education initiatives in the Division of Undergraduate Education, soon stepped into the breach, writing a proposal for the minor and shepherding it through the requisite Academic Senate committees.

“When this went through, a lot of people said, ‘Oh, I wish Jayne were here—she would’ve been ecstatic,’” Blackmar said.

Few express surprise that UCLA made the step into disability studies. In 1969, the federal government chose UCLA for one of its first centers for excellence

*Christopher Baswell, professor of English*



# Surveying the Disabled in History

Research and teaching about disability topics focus not only on present-day issues. The explorations of disability extend into the study of major figures from history and literature—here are a few examples:

**King John of Bohemia** (1296–1346) was blind. In spite of being sightless, John fought in battle and died fighting with his French allies at the Battle of Crecy.



Pope

The 18th-century English poet **Alexander Pope** used his status as a hunchback as both his trademark and as an inspiration for his signature literary form—the heroic couplet.

**Samuel Johnson**, perhaps the most celebrated author of the 18th century and best known for his *Dictionary of the English Language*, was partially blind and deaf, scarred by scrofula, and is now thought to have had Tourette's Syndrome, which manifested itself in a variety of nervous tics and mental obsessions and compulsions.



Johnson

A monk named **Hermann of Carinthia**, also known as Hermann the Cripple (Hermannus Contractus), had profound motor disability, and he could not move about at all without assistance. In spite of his extreme physical limitations, he was a scholar, composer and one of the most learned men of the eleventh century.

In the mid-1400's, a deaf Spanish nun, **Teresa de Cartagena**, wrote a sophisticated religious treatise, *The Grove of the Infirm*, in good part about spiritual benefits of illness.

**Blind Harry**, a Scottish poet and prose writer in the 15th century, wrote works about William Wallace and his ultimate defeat—an account that became the background story for the movie *Braveheart*.

Byron



**Lord Byron**, the Romantic era's biggest sex symbol, had a club foot. Lord Byron wrote an unfinished play, "The Deformed Transformed," in which a deformed hero opts to trade his body for that of Achilles, with tragic consequences.

**John Milton**, author of *Paradise Lost*, linked his blindness to that of the original epic poet Homer, and to divine inspiration.

**William Cowper**, one of the greatest poets of the late 18th century and author of the mock-heroic epic *The Task*, suffered from intense bouts of melancholia, heard voices and attempted suicide as a young man before retiring to the country. Nature and rural life became the subject of some of his best poetry.

**The study of disabilities “is a way of rethinking history, culture and their relationship to the individual.”**

in developmental disabilities. UCLA's Tarjan Center for Developmental Disabilities is now part of a network that extends to every state in the union. In 1986, UCLA became the first campus in the nation to appoint a Section 504 compliance officer to ensure accessibility under the Americans with Disabilities Act. As a result, the campus is now considered a showpiece of integrated accessible design.

“UCLA has a strong and early history of addressing disability issues on campus,” said Joan Earle Hahn, chair of UCLA's Committee on Disability and an associate adjunct professor of nursing. “So it's natural that we'd be the ones to take this next step.”



Helen Deutsch, professor of English

# Where Virtual Reality Meets Ancient History



Beginning in June, the San Diego Museum of Natural History will host the largest and most comprehensive exhibit ever mounted on the Dead Sea Scrolls, including a virtual model developed by UCLA scholars that reveals the community that produced some of the most important historical treasures of the Middle East.



*Images created by the Qumran Visualization Project in UCLA's Department of Near Eastern Languages and Cultures.*

Prepare for a stroll through an ancient world. A highlight of the mammoth exhibit on the Dead Sea Scrolls at the San Diego Natural History Museum is a virtual recreation designed by UCLA scholars of Qumran, the community believed to be the origin of the scrolls about 2,000 years ago.

In “Ancient Qumran: A Virtual Reality Tour,” visitors will be able to explore the archeological site as it originally appeared. In an immersive virtual experience in the Museum’s giant-screen theater, visitors can view the city from outside its walls, on the grounds and “walking” through fully-furnished rooms.

“This project gives visitors the opportunity to see and touch an ancient city,” said William Schniedewind, professor of near eastern studies and director of the Qumran Visualization Project, and holder of the Kershaw Chair of Ancient Eastern Mediterranean Studies. “To be able to go into a building digitally and explore it as it actually existed helps everyone appreciate the ancient world and understand what that world was like.”

Most scholars believe the scrolls were prepared by a group that broke away from mainstream Judaism to live a communal

life at Qumran. When the Romans invaded Qumran around 68 CE, the community hid their manuscripts in the nearby caves on the northwestern shore of the Dead Sea in what is now Israel.

The scrolls were discovered between 1947 and 1956. Among them are some 230 biblical manuscripts dating from 250 BCE to 68 CE that represent nearly every book in the Hebrew Bible. Thousands of fragments were discovered and pieced together into more than 900 separate documents—thus becoming some of the greatest archaeological treasures of the Middle East.

Bringing new life to such formidable historical milestones “creates fascinating experiences for visitors, as well as major benefits for archaeologists,” said Robert Cargill, chief architect and designer of the Qumran Visualization Project, and a Ph.D. student at UCLA. “By seeing an archaeological site recreated in 3-D, we can develop a whole host of questions about ancient civilizations that were never asked before.”

*On display at the San Diego Natural History Museum from June 29 through December 31, the Dead Sea Scrolls Exhibition includes the virtual tour of Qumran, 12,000 square feet of displays, and 27 of the scrolls—10 of which are being exhibited for the first time.*

# PORTRAITS *of*

The six student winners of the Charles E. and Sue K. Young Awards for 2007 are recognized for their



## **William Thomas Clarke**

Senior, Molecular, Cellular, and Developmental Biology

**Seeking answers and treatments for inherited diseases**

While many undergraduates dream of one day becoming medical researchers who can cure or tame disease, Tom Clarke is already well on his way toward realizing that ambition. A Howard Hughes Undergraduate Research Scholar and recipient of a prestigious Marshall Scholarship, Clarke is working in the laboratory of Assistant Physiology Professor Rachelle Crosbie. There, Clarke has helped with research on the genetic disorder of ciliary dyskinesia, which causes respiratory illnesses and infertility; and on Duchenne muscular dystrophy, which usually results in death by the late teens.

“My research work has been the most exciting experience of my collegiate career, and has reinforced my decision to use the science of medicine as a physician to develop novel therapeutic tools for treating inherited human diseases,” said Clarke.

## **Stephan J. Pennington**

Graduate student, Musicology

**Incorporating marginalized musical voices**

A disadvantaged childhood, eight years in the Army, and being both a person of color and a transsexual give Pennington an unconventional perspective on education and life.

“I always make sure to include a variety of voices and viewpoints every time I teach,” said Pennington, who won the Distinguished Teaching Assistant Award for 2005–06. “That way, I can incorporate the histories of marginalized people that I myself never learned while I was in school.”

Pennington’s dissertation is on the Comedian Harmonists, a diverse German vocal group that included Jews and flourished until Hitler came to power. Pennington, who plays the banjo, sings and composes, learned about the group while he was in Germany as an Army intelligence analyst.



# Excellence

Photographs by Collin Erie Class of 2007

extraordinary talent, commitment and achievement.



## Jennifer Pfeifer

Graduate student, Psychology

### Mapping the neural basis of identity

Pfeifer is among just a few people in the country who are conducting research in the emerging field of developmental social neuroscience, according to Matthew Lieberman, one of her half-dozen academic advisors. Working in the Ahmanson-Lovelace Brain Mapping Center, Pfeifer uses magnetic resonance imaging and other tools to examine the social cognitive development of children and teens.

“My goal is to understand how the neural systems that support self and social perception develop and affect adjustment, achievement, attitudes and developmental disorders,” said Pfeifer, who received a master’s degree in developmental psychology from UCLA in 2003. “Identities are not solely about our unique qualities, but also about what connects us with others. Because identities bloom in the transition from childhood to adolescence, it’s the perfect time to examine their neural foundations as well as their effect on developmental outcomes.”

## Hrayr Khanjian

Senior, Linguistics

### Using mathematics to analyze language structure

Coming from a bi-cultural family and a high school that taught Armenian language and culture, and learning some French and Turkish, all have helped Hrayr Khanjian appreciate language and linguistics. At UCLA, he has combined that background with his research interests. A former mathematics major who works part time as a math tutor, Khanjian is applying mathematical techniques used by Linguistics Professors Edward Keenan and Edward Stabler to the study of grammatical structures in Central West Greenlandic, a dialect of Greenlandic Eskimo.

“I like how languages have multiple levels of structure that are not immediately evident,” said Khanjian. “There are tiers of structure in intonation, sound, word, phrase, sentence and meaning that are similar across languages, and that are very rule-governed.”



## Darcy Wanger

Senior, Chemistry/Materials Science

### Making solar power affordable

“Organic solar panels should be visible in everyday life in the next 10 years,” said Darcy Wanger, who is doing her best to make that happen by working in the laboratories of Physical Chemistry Professors Benjamin Schwartz and Yves Rubin. Wanger is undertaking the lab research while also pursuing both a bachelor’s degree in chemistry/materials science and a master’s degree in physical chemistry.

“Solar work is both interesting science and ethical,” Wanger said. “It’s something real that could have a positive impact on the world.”

Wanger’s master’s thesis is on creating new organic compounds that absorb light and transport energy from the sun, and can be made inexpensively.



## Ronald Lok-Ming Liu

Graduate student, Mathematics

### Using math to understand and combat brain disease

Mathematics, especially geometry, has been Liu’s passion since he was in middle school. At UCLA, he has found a way to direct his passion and skill for the advancement of medical research. Liu uses innovative applied mathematics to identify brain structures in MRI scans, which helps to establish markers of brain disease. Ultimately, his work could help scientists quantify the progression of disease and understand the brain’s complex structure and function.

“I love mathematics and I also like teaching a lot,” said Liu, who received a master’s degree in applied mathematics from UCLA in 2005, and has already published eight academic papers, including four as a first author. “I would like to encourage students’ interest in mathematics and continue my research. Using mathematics for more effective, efficient and precise analysis of human brain disease will hopefully lead to cures.”

#### About the photographer:

Photographing the College’s award-winning students is a talented photographer who is himself a UCLA undergraduate. Collin Erie is a contributing photographer to US Presswire. His images have been published in USA Today, Sports Illustrated, the Los Angeles Times, ESPN.com, SI.com, and NBCsports.com. A communications studies major, Erie is a 2007 graduate of UCLA.

# Where the Issues of Science and Society Meet

The Center for Society and Genetics  
brings together the biological  
and social questions that are emerging in  
an age of expanding genetic discoveries.

By Robin Heffler

**M**edical researcher Eric Vilain works with children whose anatomy is not fully determined as either male or female, making their gender uncertain. Vilain, an associate professor of human genetics, pediatrics and urology, sees children with this condition, known as intersexuality, in a clinic where he helps anxious parents understand what has caused the condition and to determine a gender for their offspring.

In these cases, should the children be altered so they conform to society's definition of what's normal? Or can society be educated to try to be more accepting of these children as they are?

Such complex questions occupy Vilain and other researchers who are working together across disciplines in the UCLA Center for Society and Genetics. Launched in 2001, the center seeks to go beyond simply examining difficult social and medical issues. A multidisciplinary center in the College, the center's bold aim is to give direction to the many—and increasingly complex—ethical questions involved in genetic research, and to bring clarity to the “co-evolution” of science and humanity. In so doing, the center confronts the most basic questions about who we are.

## Coevolution of Society and Genetics

“Some people think of genetic discoveries in terms of reducing ourselves to our genes, but there is a deep, intimate relationship between our genetic being and our social being,” said M. Norton Wise, a professor of history who co-directs the center along with Edward R.B. McCabe, executive chair of the pediatrics department and physician-in-chief of the Mattel Children's Hospital at UCLA.

“From our food and medicine to our sexuality and emotions, the flood of new findings in genetics is requiring all of us to rethink our views about what it means to be human, to form social bonds, and to live in society,” Wise said. “The Center for Society and Genetics focuses attention on both the opportunities and the challenges that these issues bring to our world. The questions we face cannot be separated into biological and social components; they move together, or coevolve—society and genetics shaping each other in a dynamic relationship.”

One example of the coevolution of genetics and society that Wise cites is lactose tolerance.

“Lactose tolerance is often said to be caused by a simple genetic mutation,” Wise said, “which makes it seem purely a matter of biology. But the mutation would be meaningless if it did not arise in a society that was domesticating cattle for milk consumption; otherwise, it would disappear.”

In this sense, the cause of lactose tolerance in a population might equally be said to be their dairying practices. Indeed, researchers have found that



*M. Norton Wise, professor of history*

this story has been repeated at least three times, with lactose tolerance arising in different populations at different times in association with different DNA changes. A full understanding of lactose tolerance, then, must simultaneously stem from the biological, social and historical dimensions of its emergence and persistence.

“Many other issues in science, medicine and human development can only be explored adequately by linking the findings of genetic researchers with those of scholars in social and cultural fields,” Wise said. “And findings about social and cultural developments must be reappraised once researchers are aware of the role that genetics plays in what they are examining.”

A case in point, Wise said, is the recent discovery that the several British peoples all have a common genetic heritage dating to Spain 12,000 years ago, compelling historians who study British heritage to rethink previous conclusions about the origins, and arguably the identities, of the Scots, Welsh, Irish and English.

## **New Faculty, New Research in New Fields**

At the center, faculty and students come together from 26 departments, nine schools and three divisions of the College for research, teaching and public events exploring the dynamic intersection of genetics and society.

“The breadth of disciplines represented in the center is phenomenal,” said McCabe, “and is testimony to the fact that the problems of the 21st century occur at the intersection of many disciplines, not within the strictly defined academic fields that developed at universities 200 years ago.”

The center attracts faculty members from around campus who want to cross these intellectual boundaries in their work. Christina Palmer, an associate professor-in-residence in psychiatry and biobehavioral sciences at the Neuropsychiatric Institute, is examining genetic testing for deafness, while also exploring the perspectives of those in the deaf community who don’t see the condition as a disability and therefore question the necessity of testing and

treatment. And, Professors of Law Russell Korobkin and Stephen Munzer study and write extensively about legal and philosophical issues raised by stem cell research. Their work for example, explores potential problems with creating markets for human eggs and creating human-non-human chimeras—issues that require us once more to examine fundamental questions about our humanity.

Basic questions and choices about human health and well-being arise in other areas as well, again typically at the intersection of traditional academic disciplines. McCabe and his wife, Linda, an adjunct associate professor in genetics, have personal experience with crossing disciplines—their lifelong work to develop newborn genetic screenings for more than 50 diseases involves them not only in exertions at the lab bench but also in debates about ethics and public policy.

“There are many policy issues that focus on when babies should be tested,” said McCabe, who chaired an advisory committee on genetic testing for Presidents Clinton and Bush. “For example, early discharge from the hospital interferes with some testing and each state tests for a different number of diseases. We’ve been active in trying to get a national standard policy.”

Working with Sean McGhee, a UCLA pediatric allergist and immunologist, the McCabes are currently trying to develop new screenings for severe combined immunodeficiency (SCID), popularly known as the “boy-in-the-bubble” disease. “Early diagnosis is critical,” said Ed McCabe, “because we know that with early bone marrow transplantation, we can cure SCID in greater than 90 percent of cases. Without it, these children will die by age two.”

A segment of the population that they are especially eager to test for SCID is Native Americans, who are 25 times more likely to have the disease than the general population. However, some Native American tribes are reluctant to undergo testing because of their claims that genetic material

*Soroya de Chadarevian, professor of history*



previously gathered by other researchers was used without their consent, and because genetic information about their origins may run counter to their oral history and beliefs.

“Genetic research has to be culturally sensitive,” said McCabe, since it can challenge the self-understandings and practices of individuals and groups. “Laura Foster, a UCLA women’s studies graduate student who is also a graduate student fellow at the center and a lawyer, brings to the center a familiarity with indigenous peoples around the world and a concern for how to involve them as participants in the research. She hopes to ensure that university investigators show proper respect for indigenous people, and she hopes to broker relationships between indigenous people and the researchers.”

The notion that science simultaneously shapes and is shaped by society is an insight that informs the Center’s approach to ethics education in general, since it underscores how ethical problems and possibilities are integral parts of the science itself.

“We want to promote a way of thinking about the ethical dimensions of an issue so scientists see ethics not as an unfortunate obstacle, but as a dimension of their work that has value and significance to them,” said Sally Gibbons, associate director of the center and an adjunct assistant professor of philosophy.

### Historical Context of Genetic Developments

Hired in 2006, Professor of History Soraya de Chadarevian holds the distinction of being the first faculty member to have a joint appointment in the center and her department. Her research focuses on the historical context of modern scientific developments, including the development



*Edward R. B. McCabe, executive chair of pediatrics*

As part of this effort, researchers developed new techniques to visualize human chromosomes and study mutations on the chromosomal level. This research, she said, led to the understanding that humans have 46 instead of 48 chromosomes, as previously believed, and to the discovery of unusual chromosome forms or numbers, as in the case of Down syndrome. These findings, in turn, led to the development of new diagnostic techniques.

### Giving Undergraduates and the Public Food for Thought

With Gibbons, de Chadarevian has taught one of the center’s upper division core courses, which explores historical and philosophical perspectives regarding genetics. She is also teaching a graduate seminar on the history of

**“The biological and social developments of the last 50 years have been overwhelming in terms of how we think about ourselves. The Center for Society and Genetics wants to explore this territory—which is nothing less than what it means to be human.”**

of molecular biology and, more recently, genetics.

“Studying this history is useful because it sharpens our understanding of the present,” de Chadarevian said. “It helps us understand why genetics became so important in the late 20th century, why certain questions are asked, why certain practices and institutions are in place, what alternatives existed, and why they weren’t chosen.”

She has traced the development of genetics in the context of research on radiation biology in the 1940s–60s.

“After World War II and the development of atomic energy for military and peaceful uses, there were concerns about the effects of radiation on workers in the field and, later, the general population,” de Chadarevian said. “The biggest worries were cancer and long-term genetic effects, so a lot of money went into investigating the biological effects of radiation.”

science and commercialization. This year, Vilain and three other faculty members in the biological and social sciences launched a year-long general education cluster course for freshmen. Titled “Sex: From Biology to Gendered Society,” the popular course encouraged students to think and write critically about the interaction of the biological, psychological and social factors that influence our behavior and experiences as human beings.

In addition to the cluster, the center is also planning to offer undergraduates a minor in society and genetics, as well as a major in biology and society. And the center reaches out to the community by presenting a public symposium each year.

“The biological and social developments of the last 50 years have been overwhelming in terms of how we think about ourselves,” said Wise. “The Center for Society and Genetics wants to explore this territory—which is nothing less than what it means to be human.” 

The Academic Advancement Program, the nation's most successful university student retention program, celebrates 35 years of service to UCLA students.

Briana Padilla's immigrant parents didn't know what "GPA" stood for until Padilla, the first in her family to attend college, arrived at UCLA.

No one has to tell the Padillas what the letters mean now—Briana is graduating from UCLA in June with a degree in history and a GPA of 3.9.

Three years ago, Padilla, who grew up in an impoverished part of Los Angeles, had felt overwhelmed on her arrival at UCLA as a community college transfer student. At that point, she had considered dropping out; today, she is pondering her options for graduate school.

Padilla says that her remarkable turnaround could not have occurred without the support and guidance she received from the UCLA Academic Advancement Program (AAP).

AAP, which was created at UCLA 35 years ago, is the nation's largest and most successful university student retention program. While many universities launched similar initiatives to support affirmative action efforts in the 1970s, AAP has thrived with a redefined and expanded mis-

sion; today there is nothing comparable to UCLA's campus-wide investment in promoting academic excellence among diverse student populations.

"AAP's longevity attests to the program's excellence, as well as to the commitment of the university to supporting these efforts," said Charles Alexander, who came to

UCLA in 2006 as associate vice provost for student diversity and director of AAP.

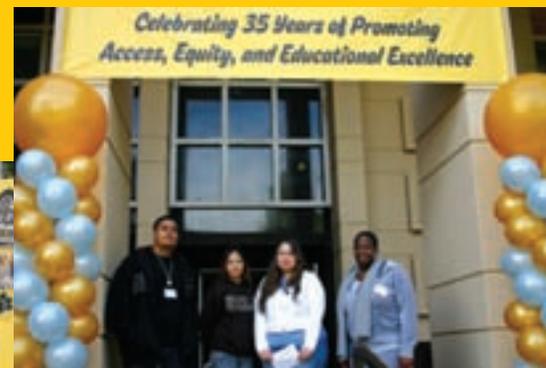
There is much to be said for growing up in peer groups in which attending college is expected, and for having adult and older-sibling role models who have experienced university life and can provide a sense of what lies ahead. Four of every five UCLA students who are not in AAP have at least one parent with a college degree; among AAP students, that figure is one in four.

"When a lot of students are growing up, the question isn't whether they were going to go to college, but what college they are going to attend," said Padilla. "For my parents, seeing me graduate from high school represented a huge achievement. None of the friends I went to school with ended up going to a university. Growing up in an environment like that, your world seems very limited and it's hard to hold the belief that going to a university is a possibility."

Padilla enrolled in community college and excelled. But when she got to UCLA, her first sense was that she was in over her head.

# Creating Possibilities for Achievement

By Dan Gordon



“It seemed like such a foreign place, and I just didn’t feel I would be able to make it,” she said.

Padilla walked into the AAP office with the intention of dropping out, but was convinced to stay.

“They believed in me,” Padilla said. “They pointed me to the right resources on campus and provided mentors who helped me with the transition, both academically and socially.”

AAP promotes academic excellence and achievement through activities and services open to 6,600 UCLA undergraduates from populations that have been historically underserved by higher education. The program has a three-fold mission:

- Ensure the academic success, retention and graduation of AAP students;
- Increase the number of these students entering graduate and professional schools; and
- Develop the academic, political, scientific, economic and community leadership necessary to transform society in the 21st century.

The definition of diversity has broadened since AAP was established. Students are now considered eligible if their academic profiles and personal backgrounds place them at a disadvantage when it comes to their university experience. This encompasses students who come from low-income families, those who come from high schools with limited or no advanced placement courses, and those who are the first in their families to attend college. AAP also considers students who can document life challenges that don’t fit the established groups but nonetheless warrant admission.

Students whose initial applications to UCLA indicate that they qualify for AAP are welcomed into the program before they have enrolled in their first course. Annual Scholar Days bring recently accepted students and their families to campus for an information session on UCLA and AAP that features faculty, staff and current AAP students. Summer residential programs for incoming freshmen and transfers help to ease the transition and prepare students for their UCLA careers. Open houses in the first two weeks of the fall introduce AAP to students who couldn’t attend the Scholar Days or summer programs.

Once they settle into campus life, AAP students involve themselves in wide range of opportunities, includ-

ing academic and career advising, collaborative learning workshops and scholarships. Graduate mentors offer guidance on postsecondary education and careers. The Program Leading to Undergraduate Success (PLUS) provides a more intense nurturing environment for 200 entering freshmen aimed at helping them to become outstanding students. The McNair Research Scholars Program prepares junior and senior AAP students who are interested in pursuing Ph.D.’s through workshops, symposia and involvement with faculty researchers.

Originally housed in UCLA’s Student Affairs Office, AAP moved into the Division of Undergraduate Education in the mid-1980s as the program took on more of an academic focus. Today the goal is not simply to keep AAP members in school, but to help them flourish by offering proactive programs, encouraging students to set high standards, and ensuring that they take advantage of the full range of campus resources.

“AAP started as a very important retention program, focused on making sure students graduated,” said Judith L. Smith, vice provost for undergraduate education. “In the 1980s, the emphasis shifted from retention to promoting academic excellence, and since the 1990s we have been concentrating on ways to help students take the next big step. It is now a critical program that helps us to diversify graduate and professional schools.”

AAP alumni can be found in high positions throughout government, business and academics, Alexander notes.

“We are looking to produce leaders—academic, political, scientific and economic—from among groups that have historically not had full participation in higher education. Many of these individuals will ultimately return to their communities to make an impact.”

Alexander sees the sense of belonging fostered by AAP as a key element in the program’s success.

“To feel part of a community with other students from similar backgrounds instills a great deal of confidence,” he said. “We want to use that to challenge and inspire these students to take advantage of the wealth of resources here at UCLA, to become involved in university life, and to set high goals that they can achieve.”<sup>CR</sup>

[www.ugeducation.ucla.edu/aap](http://www.ugeducation.ucla.edu/aap)

“We are looking to produce leaders—academic, political, scientific and economic—from among groups that have historically not had full participation in higher education. Many of these individuals will ultimately return to their communities to make an impact.”



Photos courtesy AAP



# Addressing the U

A spring conference hosted by the Ronald W. Burkle Center for International Relations

By Ajay Singh

Think about the unthinkable: a nuclear device explodes somewhere in the United States. Whether launched by missile from a foreign nation or smuggled into the country by a terrorist group, an unprovoked nuclear strike is an all-too-plausible scenario—and a key question in the evolving discussion of nuclear weapons in the 21st century.

Nuclear terrorism threatens to wreck 61 years of nuclear peace, Nobel laureate Tom Schelling, noted at “Nuclear Weapons in a New Century: Facing the Emerging Challenges,” a conference held March 6–7 on campus that was organized by the Ronald W. Burkle Center for International Relations and co-hosted by Gen. Wesley K. Clark (Ret.), a fellow at the center, and Kal Raustiala, its director.

“The most spectacular event of the past half century is the one that did not occur,” Schelling wrote when he accepted the Nobel Prize for economics in 2005.

Nuclear terrorism is closely connected with nuclear proliferation, one of the conference’s major themes that was dominated by discussions about the efforts of Iran and North Korea to become nuclear powers.

“A nuclear-armed Iran is intolerable,” said Under Secretary of State for Arms Control and International Security Robert G. Joseph in a keynote address. “Iran supports terrorism, undercuts prospects for peace between Lebanon and Israel, and wants to wipe Israel off the map.”

Joseph added that both Iran and North Korea were bent on developing nuclear weapons at a time when a growing number of countries want these weapons.

“If we fail in Iran, it provides the stage for further proliferation,” Joseph said. However, recent signs suggest that Washington’s threat of force toward Iran, coupled with multilateral diplomatic efforts to persuade the Iranian regime to reign in its rhetoric and adventurism, is causing Tehran to rethink its nuclear ambitions.

“The latest change is that there is no talk of enriching

uranium but of the *right* to enrich uranium,” said Abbas Milani, an ethnic Iranian who is director of Iranian Studies at Stanford University. “That’s setting the stage for precisely the kind of negotiations that should happen—and the only setback to this process would be an attack on Iran. It will do for the regime what it wants from the nuclear program: its self-preservation.”

*Kal Raustiala, director of the Ronald W. Burkle Center for International Relations: “We convened this conference at UCLA to examine the urgent nuclear challenges the world faces in the 21st century, and to explore solutions, or at least the approaches, to these challenges.”*



Photo: Todd Cheney

# Ultimate Challenge

relations took aim at the emerging challenges of nuclear weapons in a new century.

The Bush administration is working with several Persian Gulf states to include them in a U.S.-led security relationship, Joseph said. Similarly, after North Korea's provocative nuclear test last October, the United States reaffirmed its nuclear protection to Japan, which was "very reassuring to the Japanese," he added. That, in turn, "reassured China because China is concerned about Japan going nuclear."

No silver bullet can combat nuclear proliferation, Joseph said, but "each one plays an important role." For example, he explained, at the second meeting of the Global Initiative to Combat Nuclear Terrorism in Ankara last February, representatives discussed ways to provide nuclear fuel for power purposes to nations that give up their option to enrich uranium, which can be used to make nuclear weapons.

One area of grave concern is the black market selling of fissile material that can be used to make radioactive dispersal devices, or "dirty bombs." In 2005, the International Atomic Energy Agency uncovered 103 incidents—an average of one every three weeks—of fissile material trafficking on the black market, *Washington Post* reporter Joby Warrick told conference participants.

Some U.S.-led multilateral sting operations to catch both buyers and sellers in this murky underworld are already underway, said Brian Jenkins, a UCLA alumnus who is senior advisor to the president of the RAND Corporation and a leading authority on terrorism.

But the nightmare for U.S. planners is that Al Qaeda will someday acquire nuclear weapons.

"Al Qaeda has said it wants to kill four million Americans because the U.S. has killed four million Muslims—and they can't do that with 9/11-type strikes," said Michael Intriligator, professor of economics and political science, who moderated a panel discussion on proliferation threats.

"Al Qaeda has a demand for nuclear weapons and there is a supply—they're going to get them."

For security officials, it's no longer a question of *if* terrorists get nuclear weapons but *when*. And the clock's ticking.

"Radiation detection systems at U.S. borders are essentially a tactical response that need to be buttressed by a deterrence policy based on the ability to track nuclear materials back to their source with the help of the emerging field of nuclear forensics,"

Daniel Chivers, a Ph.D. candidate in the Nuclear Engineering Department at UC Berkeley, said. "The detection of nuclear weapons materials is extremely hard and the proposed techniques will have major problems scaling up to protect all ports of entry."

Nuclear terrorism will be a major test for whoever succeeds President Bush as president next year. "For the first time since 1952, neither of the U.S. presidential candidates will be a sitting vice president or president," observed Joseph Cirincione, vice president for national security at the Center for American Progress, a Washington D.C. think tank. Several other nations, including Russia and Iran, are also scheduled to elect new leaders in the near future, and "will be able to take on new ideas," he added.

Controlling the market for fissile material, said Cirincione, is "the ultimate preventable nuclear catastrophe," quoting Harvard nuclear expert Graham Allison. The United States spends \$1 billion a year tracking fissile material—"we spend that every three days in Iraq," Cirincione said, adding: "We have the prevention programs in place, the people who know how to implement them—all we lack is the resources and the presidential will." 



[www.international.ucla.edu/bcir/challenges](http://www.international.ucla.edu/bcir/challenges)

# INVESTIGATING THE IMPACT OF LIFE

Scholars in social psychology are developing new insights for our understanding of how humans are affected by the issues and conditions we face every day.

By Stuart Wolpert

In the broad realm of psychology, scholars investigate what is perhaps the most remarkable development of nature: the physical structure and workings of the human mind.

Within the more specific field of social psychology, researchers create new understanding of how the conditions of life affect the mind.

“All psychologists explore the human mind; social psychologists also focus on investigating the human condition—the factors outside the mind that affect it,” said Robert A. Bjork, professor and chair of the UCLA Department of Psychology.

“Whether studying the effects of stress, pain management, social networking, reproductive health, personal relationships, group behavior, or the impact of conflict on well-being,” said Bjork, “social psychologists are looking at the issues of daily life that could affect any of us, and probably affect most of us.”

An interdisciplinary field, social psychology proves to be a thriving collaborative setting to link researchers interested in the physical functioning of the brain to scholars who focus on the impact of behavior. At UCLA, 10 faculty—three are highlighted here—along with their graduate students and post-doctoral researchers form a core group that is renowned for creating new insights about the mind and the spectrum of factors—both negative and positive—that affect it.

## Measuring the Impact of Stress on Health

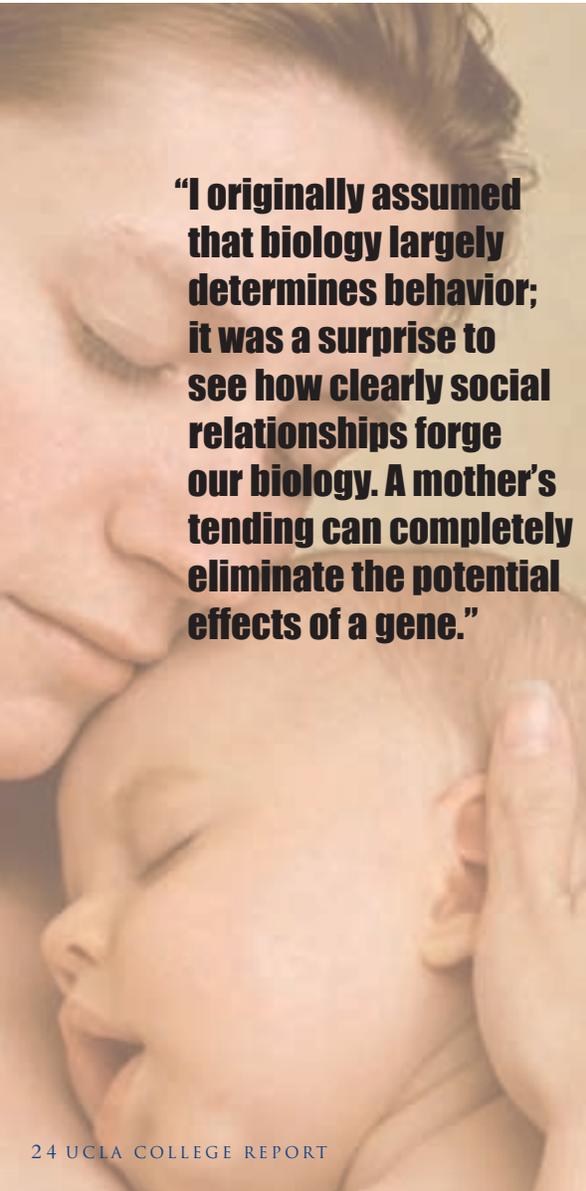
Bringing together elements of genetics, psychology, neuroscience and related fields, Professor of Psychology Shelley E. Taylor studies social relationships and how they protect against stress.

An important theme in Taylor’s work is the impact of intensely stressful negative events on people’s behavior and health, and how we cope with these events. She is the founder of this area of research, and a founder of health psychology in general.

Among the cornerstones of Taylor’s work is a theory she developed that explores the usefulness of “positive illusions” in our everyday lives—research that attests to the powerful ability of the human mind to interpret threatening events in ways that protect health. Taylor’s research showed that positive self-illusions can defend people against emotional threats or traumas, protecting not only their psychological well-being but also their physical health. Optimism and social support have biological and psychological benefits, especially in times of stress.

“Shelley’s insightful and provocative thinking about positive illusions contrasted with prevailing views of how perceptions affect individuals,” said Bjork. “She suggested that mentally healthy perceptions incorporate optimistic errors and biases, which facilitate mental health. This concept has had a profound impact on psychology; her research on this subject has produced a fundamental shift within the psychology profession.”

As part of the ongoing development of this line of research, Taylor is the



**“I originally assumed that biology largely determines behavior; it was a surprise to see how clearly social relationships forge our biology. A mother’s tending can completely eliminate the potential effects of a gene.”**

author of the book, *The Tending Instinct: How Nurturing Is Essential to Who We Are and How We Live*, for which she analyzed more than 1,000 mental health studies. Among her many conclusions is the idea that tending to others is part of the basic biology of humans—as natural, Taylor said, as searching for food or sleeping.

“I originally assumed that biology largely determines behavior,” Taylor said, “and so it was a tantalizing surprise to see how clearly social relationships affect our underlying biology—even at the level of genes.

“Chief among these social forces are the ways in which people take care of one another and tend to one another’s needs,” Taylor said. “An early warm and nurturing relationship is as vital to development as calcium is to bones.”

In her book, Taylor addressed the role that genetic makeup and tending plays in determining our behavior.

“The genome is like an architect’s first plan for a house—a rough projection of how a person may turn out,” Taylor said. “The plan is revised during the course of the building process. This is what happens when genes meet the environment in which they find expression, and tending is a large part of this environment.

“From life in the womb to the surprisingly resilient brain of old age, the social environment molds and shapes the expression of our genetic heritage until the genetic contribution is sometimes barely evident. A mother’s tending can completely eliminate the potential effects of a gene; a risk for a disease can fail to materialize with nurturing, and a genetic propensity may lead to one outcome for one person and the opposite for another, based on the tending they received.”

Taylor also studies the benefits of social support, as well as gender and cultural differences in the use of social support for managing many kinds of stress. She explores the skills that people use for anticipating stressful events and for minimizing their effects and when they occur. She is especially interested in how people proactively head off stressful events through planning, goal setting, and mental stimulation.

Taylor’s research on stress and coping has shown that men and women use very different methods for coping with

*Matthew D. Lieberman*



stress, with women drawing more heavily than men on their social relationships. She and her colleagues also published the first study that analyzed more than a decade of research that shows how a family’s social environment influences physical and mental health.

The research team found strong evidence that children who grow up in “risky families” often suffer life-long physical health problems, including some of society’s most common serious ailments, such as cancer, heart disease, hypertension, diabetes, obesity, depression and anxiety disorders, as well as early death.

Taylor and colleagues, including Matthew D. Lieberman, UCLA associate professor of psychology, found that a harsh early childhood environment may adversely affect how threatening information is processed in the human brain—the first evidence that functioning in the regions in the brain involved in the detection of threatening information and regulation of emotional responses to these threats works differently in people from “risky families,” (homes marked by conflict, anger and aggression, that are emotionally cold, unsupportive and where children’s needs are neglected).

### Exploring the Power of “Social Information Processing”

Lieberman, whose research is supported by the National Science Foundation and the National Institute of Mental Health, is one of the founders of social cognitive neuroscience. He uses innovative techniques for brain imaging that combine neuroscience with social psychology research. Using Functional Magnetic Resonance Imaging (fMRI) at UCLA’s Ahmanson-Lovelace Brain Mapping Center to examine brain activity and neuropsychology, Lieberman’s approach focuses on how the human brain carries out social information processing, and how the brain supports social experience.

Lieberman studies how, when we interpret our social and emotional world, we use both automatic responses, which occur spontaneously; and high-level, controlled, deliberative responses—and which regions of the brain are involved in each kind.

Lieberman and his colleagues examine how conscious thought can disrupt emotional processing that is automatic and non-conscious. They have shown that the amygdala—an almond-shaped structure in the brain that serves as an alarm to activate a cascade of other biological systems to protect the body in times of danger—becomes less sensitive when the prefrontal cortex, critical for language and logical reasoning, is activated.

These studies complement Lieberman’s research that extends into observations of social intuition. Lieberman



*Shelley E. Taylor*



Janet Tomiyama (left) and Traci Mann

believes that the basal ganglia—which are associated with motor control, emotions and learning—are also critical for interpreting social subtleties, such as making sense of facial expressions and tones of voice, even though we are not aware we are doing so.

Lieberman's work has revealed intriguing findings about the brain's capacity for dealing with pain. For example, one of his studies showed that patients with chronic abdominal pain who received placebos instead of real painkillers experienced not only improvement in their symptoms, but also showed physical changes in their brain structures as well.

"We wanted to see how belief in the placebo leads to the change in pain symptoms," said Lieberman. "This study helped answer that question, and also identifies a pathway from a region of the brain associated with placebos, and with thinking about emotional experience, to a region closely linked to the outcome of diminished pain."

"We actually see physical changes in the brain that correspond closely to changes in symptoms that the patients report," said Lieberman, who won the American Psychological Association's Distinguished Scientific Award for Early Career Contributions to Psychology.

In another innovative study, Lieberman and Naomi I. Eisenberger, an assistant professor of psychology at UCLA, showed that two key areas of the brain appear to respond to the pain of rejection in the same way as physical pain, and that physical and social pain may be more similar than we realized. Eisenberger and Lieberman used fMRI to monitor brain activity in UCLA undergraduates while the students played a computer ball-tossing game designed to provoke feelings of social exclusion.

### Regulating Personal Behavior: Success or Failure?

Traci Mann, UCLA associate professor of psychology, focuses her research on how people regulate their own behavior that affects their health. Mann studies basic mental processes that predict when people will succeed or fail at controlling health-related behaviors: eating, smoking, lying

and aggressive behavior.

Mann also looks at how individual factors, such as optimism, and social factors, such as peer influence, can predict changes in health behavior. With her graduate students, Mann studies factors that affect body image, ways to prevent women from feeling threatened by unattainable media images, and the factors that affect how people feel about their bodies.

In a study published in the *American Psychologist* earlier this year, Mann, graduate student Janet Tomiyama and former UCLA graduate students reported that for most people, dieting alone is not an effective way to lose weight and keep it off.

Mann and her co-authors conducted the most comprehensive and rigorous analysis of long-term diet studies; they analyzed 31 long-term studies on dieting.

"What happens to people on diets in the long run?" Mann asked. "Would they have been better off to not go on a diet at all? We decided to dig up and analyze every study that followed people on diets for two to five years.

"We concluded most of them would have been better off not going on the diet at all. Their weight would be pretty much the same, and their bodies would not suffer the wear and tear from losing weight and gaining it all back."

People on diets typically lose substantial weight in the first six months of most diets, the researchers found. However, up to two-thirds of people on diets regain more weight than they lost within five years, and the true number may well be significantly higher.

"You can initially lose five to ten percent of your weight on any number of diets, but then the weight comes back," Mann said. "We found that the majority of people regained all the weight, plus more. Sustained weight loss was found only in a small minority of participants, while complete weight regain was found in the majority. Diets do not lead to sustained weight loss or health benefits for the majority of people."

Said Tomiyama, "Several studies indicate that dieting is actually a consistent predictor of future weight gain."

If dieting doesn't work, what does?

"Eating in moderation is a good idea for everybody, and so is regular exercise," Mann said. "Exercise may well be the key factor leading to sustained weight loss. Studies consistently find that people who reported the most exercise also had the most weight loss." 

**"You can initially lose five to ten percent of your weight on any number of diets, but then the weight comes back. We found that the majority of people regained all the weight, plus more."**

# When Lap Dogs Become Attack Dogs

The relationship between an American president and the reporters who cover the White House is often an uncertain one. Still, the president-media relationship has predictable patterns, according to a UCLA-led team of researchers that has closely examined 48 years of press conferences—the first systematic look at a wide range of conditions that influence White House media relations.

In an attempt to explore long-held stereotypes about the media, UCLA sociologists Steven E. Clayman and John Heritage led a 16-member team that combed through transcripts of four randomly selected White House news conferences for every year from the beginning of Dwight Eisenhower's administration through Bill Clinton's presidency.

"As a society, we need to know how our watchdogs are discharging their responsibilities," Clayman said.

Using sophisticated linguistic techniques, the researchers examined reporters' questions for discernable variations across five dimensions of aggressiveness; they then scrutinized the context of the questions: At what point in the president's term was the press conference being held? What were his ratings in polls? How was the economy fairing? What about broader historical trends?

The researchers found that the biggest fissures in the relationship occur in a faltering economy. While neither changes in the Dow Jones index nor inflation affect the tone of press conferences, rising unemployment and interest rates packed a big wallop, with unemployment having the stronger effect.

"Nothing makes the watchdogs bark more readily than a downturn in economic conditions," said Clayman, professor of sociology and the lead author of the study.

A downturn in the business cycle leads to more aggressive questioning not only on domestic affairs but also on foreign affairs and military matters.

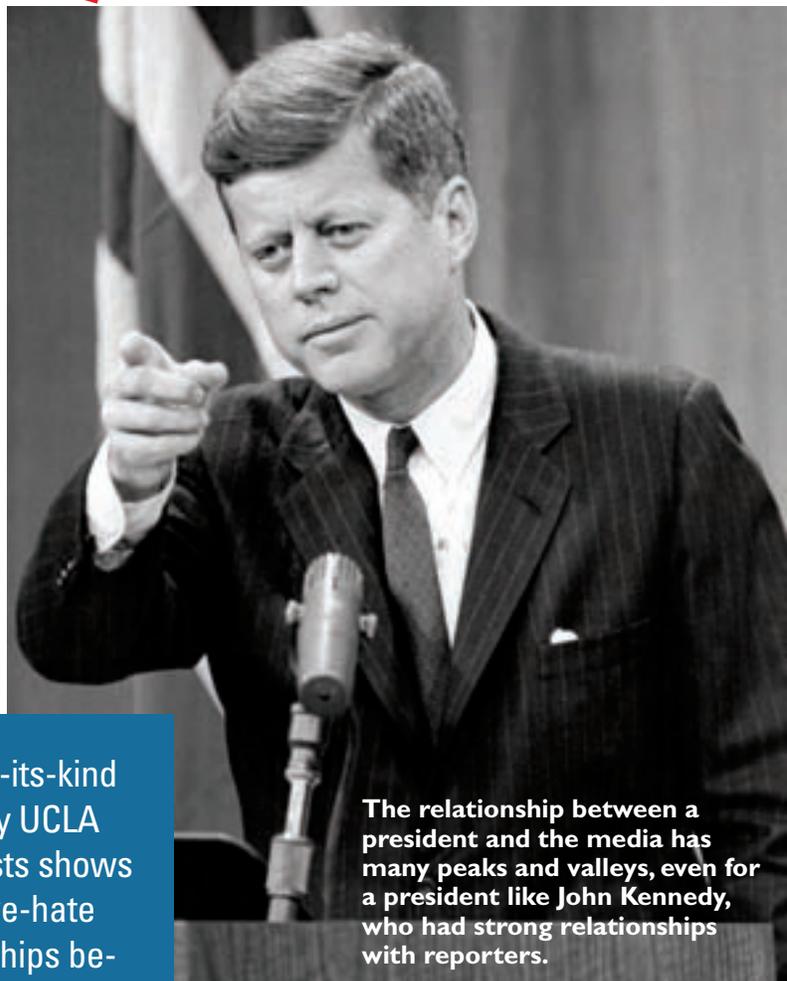
"Poor economic performance appears to contaminate a president's image in other areas," said Heritage, "leading journalists to become more aggressive."

Although the UCLA study disproved several myths, one common perception proved true: reporters proved to be half as likely to be aggressive on foreign issues as on domestic issues. Also true to stereotype, questioning became more heated during a president's second term. In fact, the press

corps was twice as likely to aggressively interrogate presidents during their second term as during the first one.

Even for all the signs of more aggressive questioning during second terms, the team, funded by the National Science Foundation, found no evidence of a period when the president could count on being spared—not even a "honeymoon period" in the early days of a new president's administration.

The study also found that although unpopular presidents are questioned somewhat



A first-of-its-kind study by UCLA sociologists shows that love-hate relationships between the president and the media can be analyzed and measured.

The relationship between a president and the media has many peaks and valleys, even for a president like John Kennedy, who had strong relationships with reporters.

more aggressively than popular presidents, "Journalists do not appear to be influenced by popular perceptions of presidential performance," Heritage said. "They are more attentive to the real state of the nation, growing more aggressive as economic conditions worsen."

Said Clayman, "We're trying to understand if journalists are aggressive at the appropriate moments. Now we can point to a systematic study that shows that, for the most part, they're getting aggressive at times when citizens would want them to be. At least in the domestic affairs arena, journalists are being reasonably good watchdogs." 

## A Dynamic Approach to Investing in the College

Through the UCLA Venture Capital Fund, alumni and friends in the Silicon Valley lend their expertise in support of the College of Letters and Science.

UCLA is a dynamic place where bold new scholarly and scientific research regularly occurs. Support for these groundbreaking ventures, through public funding or private gifts and grants, becomes an investment in the expertise and imagination of outstanding faculty and gifted students. Their pioneering work generates new cures for devastating diseases, greater understanding of human history, fresh economic theories, inventive art forms, and revolutionary scientific discoveries.

Now, in partnership with several forward-thinking alumni and friends, the university is engaging in another kind of bold new endeavor, the UCLA Venture Capital Fund. Josh Green, a UCLA alumnus (B.A. '77; J.D. '80), a Bruin parent, and a partner in MDV-Mohr Davidow Ventures, is chair of the Fund and has been involved since its beginning.

"There's a dual purpose to the UCLA Venture Capital Fund," he said. "One is to raise money for the College and to benefit the Athletics Department. The second purpose is to establish a community of UCLA alumni, parents and friends in the Silicon Valley. The Fund creates an ideal forum where people can get together regularly and reconnect with UCLA."

The UCLA Venture Capital Fund is based on the funding method used as one of the primary sources of capital for the creation of new technology companies.

Venture capitalism encourages new business and innovative ideas, bringing to the marketplace products and services that otherwise might not exist. Approximately one-third of the world's venture capital activities are based in northern California's Silicon Valley. Many technologies developed at UCLA have been brought into the commercial world through venture capital-backed start-up companies.

The premise of venture capital involves forming and investing in companies whose shares are not yet traded publicly. Many of these ventures are just individuals with a novel business plan or an exciting product that will address a widespread problem. These entrepreneurs often need funding, and that's where venture capital comes in.

Venture capital firms provide financial backing, but they also share their expertise, helping with hiring management teams, securing additional funding, and bringing the product or service to the market. In exchange, they receive shares in the new company—stock that initially possesses very little value. If the company fails, the investment is lost. If it succeeds, it will eventually hold a "liquidity event"—either an initial public offering of stock or a merger or acquisition deal with another, established company—and the value of its stock will soar, bringing tremendous profits to the entrepreneurs and investors.

These are the kinds of investments that the UCLA Venture Capital Fund seeks.

Patricia O'Brien, executive dean of the College, is enthusiastic about this innovative new way for alumni, parents and friends to get involved and support the College.

"When a dynamic group of northern California venture capitalists and entrepreneurs who also happen to be alumni and friends of UCLA get together to help this university,

**Josh Green:** *"Both my undergraduate and law school days at UCLA were important times when I built the foundation for my career in law and venture capital. The Venture Capital Fund is an opportunity for me to give back to the university in a unique, hands-on way."*





**Treb Ryan:** *“The new way the Venture Capital Fund is organized allows younger entrepreneurs like me, early in our careers when we don’t have a lot of cash available, to contribute to UCLA in a way that works for us.”*

and when that group has Josh Green as its chair, magic happens,” O’Brien said. “Josh and the executive committee of the UCLA Venture Capital Fund are bringing their expertise, creativity and proven track record to the table to enrich the academic mission of the College through their entrepreneurial vision.”

UCLA is one of only a handful of universities around the nation that have invested this way. The Fund was first established in 2000 as the College of Letters and Science Fund (CLAS). At that time, participants generally contributed both cash and advice about investment opportunities. When the NASDAQ stock market declined shortly after the fund’s formation and the dot.com industry collapsed, the CLAS went dormant. Recently, though, the region has recovered its vitality as the world’s leading entrepreneurial research and development center. Earlier this year, the CLAS, combined with a similar fund in the Athletics Department, was reborn as the UCLA Venture Capital Fund.

Today most of the participants, half of whom are venture capitalists and half entrepreneurs, make pledges of stock in start-up companies rather than cash. Green explained, “We’re really looking for people to contribute more than stock. We want their skills and knowledge, too. People who are involved in the venture capital-backed entrepreneurial community understand how this environment works; they know the nature of good deals versus bad.”

Currently the Fund is invested in more than 15 companies. When a start-up goes public, the plan is for everyone to benefit: the donor receives a substantial charitable tax deduction based on the new, higher value of the stock; and UCLA benefits from selling the shares at their greater value.

Entrepreneur Treb Ryan is the CEO of Opsource, Inc., a venture capital-funded company that helps software manufacturers deliver their services over the internet. Ryan attended UCLA in the 1980s and became an early contributor to the UCLA Venture Capital Fund.

“The new way the Venture Capital Fund is organized allows younger entrepreneurs like me, early in our careers

when we don’t have a lot of cash available, to contribute to UCLA in a way that works for us,” Ryan said.

What motivated people like Green and Ryan to get involved in the UCLA Venture Capital Fund?

“I’m a fan of public schools across the board,” said Ryan. “If I can help UCLA continue to provide high-quality education at an affordable price, I want to do that.”

Green feels a true fondness for UCLA and is pleased to be able to lend his expertise.

“Both my undergraduate and law school days at UCLA were important times when I built the foundation for my career in law and venture capital. The Venture Capital Fund is an opportunity for me to give back to the university in a unique, hands-on way.”

Green believes that the other participants in the Fund feel the same way.

“There’s a labor of love here,” he said. “We all want to contribute time as well as money and stock, but the ability to reconnect with UCLA is, in large part, the motivation for getting involved.”

To participate in the UCLA Venture Capital Fund or for more information, contact Tim Dolan, director of leadership gifts in the UCLA College of Letters and Science, at [tdolan@support.ucla.edu](mailto:tdolan@support.ucla.edu). 

*“Josh and the executive committee of the UCLA Venture Capital Fund are bringing their expertise, creativity and proven track record to the table to enrich the academic mission of the College through their entrepreneurial vision.”*

# Creating New Leaders in Scientific Research

A \$1 million grant from the Amgen Foundation will provide 25 students with a summer of immersion in scientific studies.

In recent years, UCLA has assumed a leadership role in providing scientific research opportunities for undergraduate students. Now, in a move that will secure the university's status in this area, the Amgen Foundation has chosen UCLA as one of a select group of academic institutions to receive a \$1 million grant in support of undergraduates involved in research in the biomedical sciences, chemistry, bioengineering, and chemical engineering.

The Amgen Scholars Program builds partnerships with ten of the nation's top universities to give undergraduate students hands-on research experience. The program will provide a total of \$25 million to the universities over an eight-year period.

"The Amgen grant provides generous support for outstanding students to participate in UCLA's Summer Program for Undergraduate Research (SPUR)," said Judith L. Smith, vice provost for undergraduate education. "For many this will be an important stepping stone to graduate studies and a career in scientific research."

Beginning in summer 2007, UCLA will host 25 Amgen Scholars, 12 from UCLA and 13 from other four-year colleges and universities around the nation. Professor Patricia Phelps of the Department of Physiological Science will direct the program as part of the Undergraduate Research Center for Science, Engineering and Math.

The Amgen Scholars, each of whom will be paired with a faculty mentor, will work for eight to ten weeks during the summer in science laboratories around the campus—side by side with graduate students, postdoctoral



Maggie Zhu, a junior studying molecular, cell and developmental biology: "The Amgen Scholars Program will provide me with precious opportunities to connect with other students doing research at UCLA and other universities."

scholars, and faculty members. In addition, weekly lunch meetings will provide opportunities for them to gather and discuss their work with faculty speakers, and career development workshops will help with such activities as applying to graduate school and making research presentations. The program also will offer GRE test preparation, as well as social events to allow for networking with other summer researchers.

In midsummer, a three-day biotechnology symposium held at Lake Tahoe and sponsored by the Amgen Corporation will give the students a chance to hear presentations by leading scientists in industry and academia and to discuss their own research. At the end of the summer, UCLA will host an undergraduate research conference where each student will give a poster presentation describing his or her research project.

Sophia Yang, a sophomore majoring in physical chemistry at UCLA, said, “The Amgen Scholar award will allow me to conduct research over the summer on improving early cancer detection. After refining our new techniques for MRI imaging, I will be testing the method on *in vitro* samples of glioblastoma multiforme, an advanced central nervous system tumor found in the brain.”

Other student awardees are equally enthusiastic. UCLA senior Ni Feng, a biology major, will be conducting research focused on the hormonal and neuromuscular aspects of the courtship display in the Golden-collared manakin, a bird found in the rainforests of Panama.

“The Amgen Scholars program will not only allow me to continue my project this summer,” said Feng, “but it will also help me prepare for graduate level research.”

Maggie Zhu, a junior in molecular, cell and developmental biology who is studying the molecular bases of mammalian sex differentiation, added, “The Amgen Scholars Program will provide me with precious opportunities to connect with other students doing research at UCLA and other universities.”

Financial support is a key component of the program. All Amgen Scholars, regardless of their financial status, will receive on-campus room and board and a stipend of \$3,500, as well as a travel allowance.

“Private giving from UCLA alumni and friends has made it possible for the university to support more than 200 undergraduate research fellows and scholars each year,” said Smith.

But, with each new freshman class numbering more than 4,000 students—about 40 percent of whom are science majors—more funds are needed.

“Support for undergraduate research is essential,” Smith said. “The Amgen Scholars Program will be a welcome addition to UCLA’s Summer Program for Undergraduate Research. We are grateful to the Amgen Foundation for this very generous grant.”

The Amgen Scholars, each of whom will be paired with a faculty mentor, will work for eight to ten weeks during the summer in science laboratories around the campus—side by side with graduate students, postdoctoral scholars, and faculty members.



Ni Feng, a senior majoring in biology: “The Amgen Scholars Program will not only allow me to continue my project this summer, but it will also help me prepare for graduate level research.”

For information about supporting the UCLA College of Letters and Science, call Tracie Christensen, assistant vice chancellor of development (310)206-0699.

# It's Clark

“Forty-seven years ago, the president of the University of California introduced an idealistic, untested and truly immodest plan to build the finest public higher education system in the nation.

“Happily, Dr. Kerr’s Master Plan succeeded, but there was an unforeseen consequence: It over-performed.

“Today, California’s public universities (including one that’s not even 100 years old and is in L.A., of all places) rank



*Sherry Lansing is a regent of the University of California, former CEO of Paramount Pictures and founder of The Sherry Lansing Foundation, dedicated to raising awareness and funds for cancer research.*

**I'm not sure I could  
get into UCLA.  
That's not the point.  
I can't play with the  
Philharmonic either.**

among the most highly regarded universities, public or private, in the nation or the world. Period.

“That freshman you just passed on Bruin Walk may be the next Bill Gates, the next Picasso, the next Jackie Joyner. That professor over there could create an unforgettable piece of music, a cure for a deadly

# Kerr's fault.

disease, 10,000 new high-tech jobs or a math program for failing schools that actually works.

“So, how can UCLA maintain that momentum, that excellence? How do we nourish this priceless community asset, this spectacular economic engine that enriches us all?

“Start with this reality check:

“California state government funding for the university system has gone from 42% a generation ago to less than 18% today. And that money's not coming back.

“Which brings us back to us, the citizen/owners. Not just alumni. Not just the university family. We need every business, large and small; every member of the leadership community; anyone who benefits from this university. That would very likely be every one of us.

“One last thought: The future has been around for a very long time. It will be there tomorrow. But now is now. The momentum, the excellence, the need is now.”

**Too many Californians think that the state government fully funds the UC budget.**

**Private money is a small fraction of the overall university budget.**

**But when you need to get from good to great, it can be the fast-forward button.**

**Sherry Lansing. UCLA, Unabashed.**



*Panelists at a conference titled “Nuclear Weapons in a New Century: Facing the Emerging Challenges,” explore the arms-related issues to come for the next presidential administration. Organized by the Ronald W. Burkle Center for International Relations at UCLA, the March conference brought together an international audience of scholars, government officials, journalists, and students.*

*Shown here (from left): Joby Warrick, Washington Post; Doyle McManus, Los Angeles Times; Wesley Clark, UCLA Senior Fellow at the Burkle Center and former NATO Commander; Joe Cirincione, Center for American Progress; and Ashton Carter, Harvard.*

*For more on the conference, see page 22.*

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