Winter 2007 Volume Seven



UCLA COLLEGE OF LETTERS AND SCIENCE

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

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### UCLA COLLEGE OF LETTERS AND SCIENCE

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Executive dean Patricia O'Brien (right) and (from left) comparative literature chair Ali Behdad, humanities dean Tim Stowell, and history department chair Ned Alpers meet to plan the initial steps for the \$2.5 million transformational grant from the Andrew W. Mellon Foundation.

Dear Friends,

Faculty in the College of Letters and Science continue to command national and international acclaim for their program-building and research endeavors. The last six months have been an especially rich period for recognition of achievement. The UCLA College Report allows us to showcase some of these recent accomplishments.

We are welcoming two new deans to the College. Both Tim Stowell (Humanities) and Joe Rudnick (Physical Sciences) are already members of the UCLA family, as you will read in this edition of the



The College of Letters and Science received the exciting news this fall that UCLA had been chosen by the Andrew W. Mellon Foundation for a special transformational grant in the humanities. The grant of \$2.5 million, to College Report. be distributed over five years, will make it possible to explore new perspectives and build new programs in many fields in the humanities. This grant will also allow us to address the real challenges of replacing and

renewing faculty in the humanities. The College as a whole faces the demographic challenge of a preponderantly senior faculty, fully a third of whom may retire in the next decade. The Mellon Foundation's support allows UCLA to experiment with new directions in research and teaching and to hire in advance of faculty separations. Our goal is to take the experience we gain in long-range planning for departments in the humanities and consider its applicability across

I am very grateful for the collaboration of three department chairs—Ali Behdad the College in the sciences and social sciences.

(Comparative Literature), Ned Alpers (History) and Tom Wortham (English) who worked together with my staff and me to craft the successful proposal. Our next step will be to assemble a group of faculty to advise on programmatic issues. We aim to achieve an enhanced climate of collaboration by promoting cross-disciplinary ventures that are rooted in departmental structures.

Sincerely,

and the second

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

# College News

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

#### New Leadership for Humanities and Physical Sciences

### The chairs of two of UCLA's top-ranked departments assume leadership roles in the College as deans.

In Fall 2006, two distinguished faculty were named deans in the College of Letters and Science.

Timothy Stowell, a 25-year veteran of the College's Department of Linguistics and a noted syntactician, was named dean of the university's Division of Humanities.

"Tim Stowell is a distinguished scholar who is internationally recognized in his field, and a superb administrator who had managed one of UCLA's finest departments," said Patricia O'Brien, the College's executive dean. "He is a welcome and valuable addition to the leadership of the College."

Stowell assumes leadership from Jonathan Post, who has been serving as UCLA interim dean of humanities for the past year. Post will return to the English department, where he has been on the faculty since 1979.

Stowell has risen through the ranks of the linguistics department, which he

joined in 1981 as an assistant professor. The department is considered by linguistics specialists to be at the very top of its field (for more on the department, see Volume 6 of UCLA College Report at www.college.ucla. edu/report).

As a scholar, Stowell has distinguished himself in the branch of linguistics that explores how meaning is related to grammatical representation. In his early work, he pioneered the research of deriving generalizations in word order for specific languages.

Stowell served twice as department chair: from 1994–98, and from 2004 until his appointment as dean.

In the Division of Physical Sciences, former

dean Tony Chan has temporarily departed the campus to join the National Science Foundation for a three-year appointment as its new assistant director for Mathematics and Physical Sciences. Until a new permanent dean is appointed,



Tim Stowell, new dean of humanities: "There still is no better way to produce well-rounded members of society than providing a strong background in the humanities."

Joseph Rudnick, chair of the Department of Physics and Astronomy, will serve as interim dean of physical sciences.

Rudnick has served on the UCLA faculty since 1984, when he joined the faculty in the Department of Physics. His research focuses on condensed-matter physics; his recent work has explored problems in biological physics.

Rudnick has served in several leadership positions within the College and in university-wide administration. He was chair of his department from 1986–89, and again from 2004 to the present. He has also been a member of several university-wide committees, including the Committee on Academic Personnel from 1994–97; he was vice chair of the committee in 1996 and 1997.

Joseph Rudnick, chair of the Department of Physics and Astronomy, will serve as interim dean of physical sciences.





### IN 2005–06, FUNDRAISING FOR THE COLLEGE OF LETTERS AND SCIENCE INCREASED TO ITS HIGHEST LEVEL EVER.

Gifts to support the people and programs in the College rose to \$55.4 million for 2005-06—growth of more than 35 percent over the previous fiscal year.

"The tremendous success of fundraising for the College is a testimony to the dedication of all of our supporters," said Patricia O'Brien, executive dean of the College. "We are so grateful for their confidence in our efforts the generosity of every donor, and their gifts large and small, will strengthen every phase of the College."

#### A Milestone for Recognizing Faculty Achievements

### In 2006, UCLA honored the 100th presenter of the campus' Faculty Research Lecture.

When in 1925, biology professor Loye H. Miller presented the fossil birds of California in the first Faculty Research Lecture at UCLA, it started a campus tradition that has continued for more than 80 years as the highest honor the Academic Senate can offer to one of its own.

The Faculty Research Lecture is a prestigious forum for celebrating the intellectual, artistic and scientific talents of UCLA's faculty. Open to the public, the Faculty Research Lectures are intended to showcase the work of the presenter for a general audience.

In the spring of 2006, the Lecturer reached a milestone when political scientist Karen Orren presented the 100th Faculty Research Lecture on "The Supreme Court and the Depletion of Constitutional Law."

"The lecture was established by the UCLA Academic Senate not only to honor its most distinguished scholars and scientists, but also to give the larger community a taste of the academic achievements at UCLA," said Joyce Appleby, professor emeritus of history.

Recent memorable lecturers and their

topics include: Jared Diamond, professor of geography and Pulitzer Prize-winning author, who spoke on the variety of human experiences on the world's continents; computer scientist Leonard Kleinrock, one of the fathers of the Internet, who described his predictions for a computer future; and Carole Pateman, a professor of political science who studies the worldwide movement for women's rights, who illustrated the role of a basic income as equivalent to "the right to land, life and liberty." The next Faculty Research Lecture will be presented by Stephen Yeazell, professor in the School of Law, on April 12, 2007. For more information on the Faculty Research Lectures, call (310) 794-8609.

#### A "Wealth of Experience" in Innovation for Underrepresented Students

#### A nationally-recognized administrator of innovative projects for admissions and retention has assumed leadership of UCLA's programs for underrepresented students.

Anyone who wants to understand how UCLA ought to move toward new directions in undergraduate admissions and retention of underrepresented students should consult with Charles J. Alexander, the new associate vice provost for student diversity and the director of UCLA's Academic Advancement Program.

Alexander, who joined UCLA September 1, has spent the past 20 years creating and running first-rate diversity programs, most recently at UC San Francisco (UCSF), where he was associate dean for student affairs at the School of Dentistry.

In his new role at UCLA, Alexander serves not only as a catalyst for the university's evolving approaches to admissions, but he also assumes leadership of the university's Academic Advancement Program, the nation's largest educational support unit for underrepresented students.

"Dr. Alexander comes to UCLA with a wealth of experience in running programs for students who have traditionally been underserved by higher education, including students from immigrant families and those from underrepresented populations," said Judith L. Smith, dean and vice provost for undergraduate education.

Alexander knows well how education can help alleviate the poverty and suffering in underrepresented communities. But he also understands something much deeper. For social change to be truly effective and lasting, he believes that getting a good education isn't enough—it's just as important to make the right career choices.

"For me, it became important to encourage young people to make choices about their careers *before* entering them," he explained. "Advantaged kids are often able to do that, but it isn't easy for the disadvantaged."

Promoting diversity wasn't easy for Alexander when he joined UCSF a little over 10 years ago. Proposition 209 had just kicked in, barring state universities from considering race in admissions. So Alexander helped develop and implement an admissions process aimed at lawfully enhancing diversity.

Before UCSF, Alexander created and operated student diversity programs at Marquette and Brandeis. He was honored with the Outstanding Leadership Award from the National Association of Medical Minority Educators, and received UCSF's Martin Luther King Jr. Award for his extraordinary leadership and inspiration in advancing the goals of social and economic justice.

As head of the Academic Advancement Program (AAP) at UCLA, Alexander will provide the executive and intellectual



Charles Alexander, the new associate vice provost for student diversity and director of UCLA's Academic Advancement Program.

leadership for a collection of innovative programs designed for more than 6,000 UCLA undergraduates from diverse populations. The Academic Advancement Program promotes academic achievement and excellence through academic advising, collaborative learning workshops, mentoring for graduate studies and professional school, summer bridge programs for entering freshman and transfer students, and scholarships for AAP students. www.college.ucla.edu/up/aap

#### Alumni Honors for College Graduates

### UCLA's highest honors for alumni go to three graduates of the College of Letters and Science.

Three graduates of the College have received the 2006 UCLA Awards for professional achievement and service to the community and the university.

Congressman Jerry Lewis, Class of 1956, received the 2006 UCLA Edward A. Dickson Alumnus of the Year Award—an honor bestowed on distinguished alumni who have rendered special and outstanding service to UCLA or have brought honor and distinction to the University. The UCLA Alumni Association also honored Linda Alvarez, the awardwinning journalist for KCBS and a 1963 graduate with a degree in English, with the 2006 UCLA Professional Achievement Award. Michael Soderberg, chief of detectives for the Los Angeles County Sheriff's Department and a 1969 graduate with a degree in political science, received the UCLA Public Service Award.

The UCLA Awards were established by the UCLA Alumni Association in 1946 to honor the best of UCLA and those who have demonstrated a commitment to excellence through their contributions to society. For more information about the UCLA Awards, visit www.uclalumni.net.

#### ARE YOU UP TO DATE?

Does the UCLA Alumni Association have current information about you? You can make everything current by going to the Alumni section of the home page for the College of Letters and Science, www.college.ucla.edu.

# A Journey through Space and Time

By Stuart Wolpert

UCLA geophysicist Christopher Russell is leading the science team for the Dawn spacecraft—the first NASA mission that will orbit two celestial bodies on a single voyage. hen Christopher T. Russell came to UCLA as a physics graduate student in 1964, taking the lead role in an ambitious scientific expedition to distant regions of the solar system was not in his vision of a career path.

"Back then, I wouldn't have believed someone who told me I would be a principal investigator on a space mission," said Russell, now a professor in the College's Department of Earth and Space Sciences.

"My high school guidance counselor told me I should go into engineering, but I wanted to explore as well as build," said Russell." I wanted to go into science."

Russell is the principal investigator on NASA's Dawn mission to the asteroid belt between Mars and Jupiter. The Dawn mission, scheduled to launch from Cape Canaveral in June 2007, will be a milestone for NASA: the first time a spacecraft will orbit two planetary bodies on the same mission.

Dawn will conduct detailed studies of two of the oldest bodies in our solar system: the "dwarf planet" Ceres and the massive asteroid Vesta—each with distinctive characteristics that have much to reveal about the origins of the solar system.

Dawn will seek to determine the shape, size, composition and structure of Vesta and Ceres, as well as revealing the conditions in which these objects formed. Comparing the different evolutionary paths of Ceres and Vesta will provide evidence about the role of size and water in planetary evolution.

Dawn will fly past Mars in March 2009 and, after more than four years and two billion miles of travel, the spacecraft will rendezvous with Vesta in 2011. Dawn will orbit Vesta for approximately nine months.

In 2012, Dawn will resume its journey for a threeyear, one-billion-mile cruise to Ceres. Dawn will rendezvous with Ceres and begin orbit in 2015, conducting studies and observations for at least five months. "I think of Dawn as two journeys," said Russell, who proposed the mission to NASA. "One is a journey into space. This is analogous to what ancient explorers did, who knew there was unexplored territory and wanted to discover what was there. We're going to explore a region for the first time, to find out what the conditions are today.

"Dawn is also a journey back in time," said Russell."Ceres and Vesta have been altered much less than other bodies. The Earth is changing all the time; the Earth hides its history, but we believe that Ceres and Vesta, formed more than 4.6 billion years ago, have preserved their early record—they're revealing information that was frozen into their ancient surfaces.

"By looking at the surfaces and how they were modified by the bombardment of meteoroids, we will get an idea of what the early conditions of Ceres and Vesta were, and how they changed. So Dawn is a history trip too. We're going back in time to the early solar system."

And, the Dawn mission will help determine if Ceres could harbor life. The spacecraft's instruments include a gamma ray and neutron spectrometer that can detect the hydrogen from water.

"Evidence indicates that Ceres has substantial water or ice beneath its rocky crust," said Russell."The evidence if water still exists on Ceres could come from frost or vapor on the surface, and possibly liquid water under the surface.Our instruments on board will be able to determine whether there is indeed water there."

Water kept Ceres cool throughout its evolution.In contrast, Vesta was hot, melted internally, and became volcanic early in its development. Ceres remains closer to its primordial state, while Vesta evolved further over the first few million years of its existence.

Ceres, named after the Roman goddess of agriculture, has an average diameter of about 600 miles. A roughly round object, Ceres is located in the asteroid belt between Mars and Jupiter, approximately 258 million miles from Earth. It revolves around the sun in 4.6 terrestrial years.

Vesta, the brightest asteroid, is named for the ancient Roman goddess of the hearth.Approximately 220 million miles from Earth, Vesta appears to be

> The Dawn spacecraft, which launches in June 2007, will venture into the asteroid belt between Mars and Jupiter to explore Ceres and Vesta, two planetary bodies that hold clues to the beginnings of our solar system.

essentially solid rock; its oval, pumpkin-like shape has an average diameter of about 320 miles, and it orbits the sun in 3.6 terrestrial years.Vesta's basaltic dust layer reflects its crustal composition, and its dry surface includes a huge crater near its southern pole.

Ceres is much bigger than Vesta—more than two times further across, with a volume eight or nine times that of Vesta.But Vesta is much denser than Ceres.

Studies of meteorites believed to be from Vesta that were found on Earth suggest that this body formed from galactic dust during the first 3-10 million years of the evolution of the solar system. "Although no meteorites from Ceres have been found, we believe that this body also formed during the first 10 million years of the solar system's existence," Russell said.

Dawn will capture high-resolution images of previously unseen worlds, including, Russell hopes, mountains, canyons, craters and ancient lava flows. In addition to the images, Dawn will generate spectra that will help scientists identify geologic minerals, and measurements of gamma rays and neutrons. The gamma ray measurements will reveal the elements contained in the minerals.

Dawn, which will orbit as close as 125 miles from Ceres and Vesta, is the first purely scientific mission designed to be powered by an advanced NASA technology known as ion propulsion. The fuel used by an ion engine is xenon, a gas also used in photo flashes. Unlike chemical rocket engines, ion engines accelerate their fuel nearly continuously, giving each xenon ion a tremendous burst of speed.

The xenon ions shoot out the back of the engine at a speed of 78,000 miles per hour, powering the spacecraft.

UCLA is in charge of the science and public outreach for Dawn. Russell leads the science team, brings together the mission's

partners, manages the budget, and participates in all major decisions. Russell and colleagues will make science decisions and develop the operations plans from a science center at UCLA's Institute of Geophysics and Planetary Physics. Russell's science team also has the lead role for analyzing and interpreting the data from Dawn. UCLA graduate students and



Christopher Russell, with Britney Schmidt, a graduate student in the Department of Earth and Space Sciences who is assigned to the Dawn project. "I'm putting my entire being into this mission," said Russell, director of the science team and outreach for the mission. "It's all-consuming, but fun."

postdoctoral scholars will work on the mission, including helping to analyze the data from Dawn.

Team members include scientists from the Jet Propulsion Laboratory, NASA Goddard Space Flight Center, the Department of Energy's Los Alamos National Laboratory, Massachusetts Institute of Technology and other institutions. Orbital Sciences Corp. built the spacecraft, and JPL provided the ion engines.

Dawn is part of NASA's Discovery Program, in which scientists find innovative ways to unlock the mysteries of our solar system by answering some of humanity's oldest questions. The Discovery Program is managed by NASA's Jet Propulsion Laboratory, for the Office of Space Science.

"Why do we explore the solar system?" asked Russell. "Why did Lewis and Clark go across the U.S. at the start of the 19th century? We're not going to expand the human race off this planet for a long time, but discovering our origins and how the solar system evolved is valuable in itself. Mankind has always expanded horizons. Exploration is a human imperative."

"I'm putting my entire being into doing this mission," said Russell of the 80-hour weeks he works on the Dawn mission."It's all-consuming, but fun."

history trip too. We're going back in time to the early solar system."

### Four Honors for "The Mozart of Math"

UCLA mathematician Terence Tao received unprecedented public recognition in 2006 for his achievements.

he last half of 2006 has been a season of international accolades for UCLA mathematician Terence Tao.

Tao, a professor of mathematics in the College, received the Fields Medal, the top award in his field, followed within weeks by receiving a MacArthur Foundation "genius grant," and by being named to *Popular Science* magazine's "Brilliant 10" scientists for 2006.

The Fields Medal that Tao received in August is an international honor often described as the "Nobel Prize in mathematics." Tao received the honor from King Juan Carlos of Spain during the opening ceremony of the International Congress of Mathematicians in Madrid.

Not long after, Tao was named a MacArthur Fellow for 2006. Because the award is presented to high-achieving individuals at the top of a range of creative and scientific fields, it has been dubbed the "genius grant" by the media.

"Terence Tao is a mathematician who has developed profound insights into a host of difficult areas, including partial differential equations, harmonic analysis, combinatorics and number theory," the citation from the MacArthur Foundation said. "Terence Tao's work is characterized by breadth and depth, technical brilliance and profound insight, placing him as one of the outstanding mathematicians of his time."

Then in September, Tao was named one of the "Brilliant 10" scientists for 2006 by *Popular Science* magazine—an honor bestowed on a select group of America's top young scholars. Tao was named to the Brilliant 10 along with UCLA chemist Omar Yaghi; UCLA was the only university to have more than one scientist named to the list for 2006. The scientists were featured in the magazine's October issue *(for more about Yaghi's work, see www.college.ucla.edu/news/06/2006brilliant10.html)*.

"Terence Tao's work," said the MacArthur Foundation, "is characterized by breadth and depth, technical brilliance and profound insight, placing him as one of the outstanding mathematicians of his time."



Terence Tao, professor of mathematics in the College, receives the 2006 Fields Medal from King Juan Carlos of Spain.

*Popular Science* called Tao "math's great uniter" and said that "to Terence Tao, the traditional boundaries between different mathematical fields don't seem to exist."

In October, Tao was named the first recipient of the Carol and James Collins Chair in the College of Letters and Science.

Said John Garnett, professor and former chair of mathematics at UCLA, "Terry is like Mozart; mathematics just flows out of him. Mathematicians with Terry's talent appear only once in a generation. He's an incredible talent, and probably the best mathematician in the world right now. Terry can unravel an enormously complicated mathematical problem and reduce it to something very simple."

"I don't have any magical ability," Tao said. "I look at a problem, and it looks something like one I've done before; I think maybe the idea that worked before will work here. Nothing's working out; then you think of a small trick that makes it a little better but still is not quite right. I play with the problem, and after a while, I figure out what's going on." General Wesley Clark, new senior fellow of the Ronald W. Burkle Center for International Relations: "The Burkle Center is offering a vital voice to the international conversation on security and peace."

### **General** Wesley Clark:

A New Campus Voice for Exploring Global Security

e served as supreme allied commander of NATO during the 1999 Kosovo conflict and ran for U.S. president in 2004. Now General Wesley K. Clark—retired four-star general, scholar, commentator, teacher and best-selling author—has joined UCLA as a senior fellow at the Ronald W. Burkle Center for International Relations in UCLA's International Institute.

"General Clark's involvement with UCLA will add a unique and valuable dimension to the Burkle Center's exploration of the contemporary world and the role of the United States in global security and military, political, social and economic affairs," said Patricia O'Brien, executive dean of the College of Letters and Science. "I am especially pleased that our students will benefit from General Clark's extraordinary experience, as well as his dynamic leadership and teaching."

Clark comes to UCLA after 40 years of military command, teaching, research and executive leadership in federal government. Clark retired from the army as one of the nation's most highly decorated military officers; for his service in Kosovo, which he led without a single allied casualty, he received the Presidential Medal of Freedom.

Clark will teach on campus and host an annual conference of government, corporate and opinion leaders from around the world. He will work with UCLA faculty to analyze current events and foreign policy for students and the broader community. The first annual conference, to be held in March, will explore the emerging challenges of nuclear weapons in the 21st century.

Speaking with faculty and students for the first time on October 2, Clark said that observing the Geneva Conventions is crucial to America's interests and its ability to mobilize other countries. Clark told participants that if America turns away from the spirit of the Geneva Conventions, it is an example of "shooting ourselves in the gut." The nation's most distinguished military leader joins the Ronald W. Burkle Center for International Relations as its senior fellow to teach and conduct research.

"We thought we were in this uniform because we stood for something," Clark said."We stood for what was right, what was fair, what was just; we didn't torture people. I certainly wouldn't have stayed in the armed forces or worked with a government that I thought was doing the same skulduggery that the Soviets and the rest of them were doing. That's what we were against. How can it be that we think we can condone that now?

"We've got to have allies to help us win this war on terror," said Clark. "The only way those countries work with us is through our moral legitimacy. We shaped the post-Cold War environment. It was America that led the effort to create the Geneva Convention-and now we're walking away from it? What happened to that shining beacon that was America when we can walk away from the very values that we've espoused?"

Clark is a regular commentator in national media on U.S. defense policy, the occupation of Iraq, the war on terrorism and American foreign policy. He is the author of the best-selling book, Waging Modern War, which recounts his experience leading NATO forces to victory in Kosovo, and Winning Modern Wars, a critique of U.S. geo-strategy and a narrative of events in the world's most modern theater of war. He has also written numerous articles for national publications and comprehensive reports for Congressional committees.

Clark graduated first in his class at West Point, and earned his master's degree in philosophy, politics and economics at Oxford, where he studied as a Rhodes Scholar. He later taught economics and political philosophy at West Point.

"General Clark is a first-class intellect with tremendous expertise in national security issues," said Amy Zegart, a professor in the School of Public Affairs who specializes in U.S. intelligence and national security affairs. "He will be a wonderful addition to the UCLA community."

The Burkle Center's work includes research, teaching and public outreach on the contemporary world. The International Institute is committed to the education of global citizens through its degree programs, the people-to-people linkages it fosters among students, scholars and citizens around the globe, and its commitment to helping people everywhere become lifelong learners about their world.

Ronald W. Burkle, managing partner of the Yucaipa Companies, whose endowment provides core support for the Burkle Center, said, "General Clark's wide-ranging international experience will enhance the center's mission of providing thoughtful analyses of some of the world's most pressing issues. Clark's

"General Clark's involvement with UCLA will add a unique and valuable dimension to the Burkle Center's exploration of the contemporary world and the role of the United States in global security. **Our students will benefit from General** Clark's extraordinary experience, as well as his dynamic leadership and teaching."

presence will illuminate the center's research and teaching about the contemporary role of the United States in the international community."

Clark joins a group of internationally-renowned policymakers and analysts who have been involved with the Burkle Center. They include Presidents Bill Clinton and Jimmy Carter, Secretaries of State Warren Christopher and George Shultz, Mexican Minister of Foreign Affairs Jorge Castaneda and Finance Minister Francisco Gil-Diaz, Nobel Peace Prize Laureate Shirin Ebadi, leading public commentators Alan Dershowitz and Edward Said, as well as ambassadors from a dozen countries.

"I am hopeful and enthusiastic about the progress to be gained through frank and friendly discussion about the challenges we face to secure peace throughout the world," Clark said. "The Burkle Center is offering a vital voice to the international conversation on security and peace."

www.international.ucla.edu/bcir



Clark with faculty Amy Zegart from the UCLA School of Public Affairs and Kal Raustiala in the School of Law. "General Clark is a first-class intellect with tremendous expertise in national security issues," said Zegart. "He will be a wonderful addition to the UCLA community."

#### By Meg Sullivan

ne day in mid-August in 1961, building crews under the direction of the East German government began erecting a wall that split Berlin. Virtually overnight, neighbors were separated from each other. To cross the divide was to risk imprisonment—or even one's life.

Then one autumn day 28 years later, this potent symbol of Eastern Bloc tyranny came tumbling down. Just as suddenly as the Berlin Wall had gone up, it was history.

Now the 65.8 mile-cement wall with 260 watch towers—as well as dozens of famous Berlin landmarks—can rise and fall with the click of a computer mouse, thanks to a new Web-based academic project in the College that is attracting attention in scholarly



circles. The brainchild of Todd Presner, assistant professor of Germanic languages, the digital mapping project "Hypermedia Berlin" allows users to visit Berlin not just in 1961 and 1989, but at 25 different periods in time. From the first human settlement in 1237 along the Spree River to today's world capital, Presner has sought to capture Berlin's turbulent and indelible history.

"Berlin has a very multilayered history," said Presner, who is also affiliated with the UCLA Center for Jewish Studies. "The problem is making sense of this kind of complexity. We decided to create a kind of digital archaeology so that people can travel through time and space to really get a sense of how Berlin has transformed over its 800-year history."

The strategy appears to be a winning one. Presner was one of four UCLA faculty selected this year to

# Loving Berlin to Bits

Germanic languages scholar Todd Presner leads a team of faculty who are building a digital view of one of the world's most dynamic cities—with applications that can be expanded to create new understanding of the evolution of regions around the globe. receive the Brian P. Copenhaver Award for Innovation in Teaching with Technology. The Web site itself is the "textbook" for his undergraduate general education course, "Hypermedia Berlin." Presner also was one of five scholars nationwide to receive a Digital Innovation Fellowship from the American Council of Learned Societies—the first of its kind ever awarded in the new field of digital humanities.

The project has already won praise in scholarly journals.

"Hypermedia Berlin represents an extraordinary achievement in accessible urban representation," Philip Ethington, a USC professor of geography, said in *Vectors*, the journal of culture and technology. "Great cities are densely layered and almost inconThe project begins with a medieval map, probably drawn by a monk. As a user proceeds in time, the maps become more sophisticated. The final maps were derived from satellite imagery. One feature, in fact, allows users to overlay aerial photography showing the actual buildings that occupied Berlin at that point. Another overlay allows users to see how Berlin would look if Hitler's grand vision for the city had been realized. (In fact, only one structure still stands today from the plan: a giant cement cylinder used by Hitler's architect to test the stability of the ground.)

Zoom into one of the maps from the 50 time periods ultimately planned for Hypermedia Berlin. Roll a cursor over a "hotspot" and names like Brandenburg Gate, Alexanderplatz or Reichstag come



ceivably complex. Attempts to represent that historically-layered complexity have for generations foundered on the rock of the printed page."

The project schedule calls for an ultimate unveiling in July, but a demo model now exists online (for a virtual tour, visit www.berlin.ucla.edu and click on "tutorial").

First designed for a UCLA course on Berlin's cultural history, the program traces Berlin's evolution from a backwater mercantile town built on sand to the capital of a unified Germany under Bismarck and the site of Hitler's dream for a world-dominated Germania. Hypermedia Berlin shows how the city was devastated by the Thirty Years War, occupied by Napoleon in 1805, rebuilt numerous times throughout the 18th and 19th centuries, destroyed in World War II, divided by the Berlin Wall for a generation, and put back together again in 1990.



into focus. Click again, and a concise history comes into view.

Or instead of choosing a hotspot, roll the cursor to the screen's right side, and select a specific person. Ever wonder about the original jobs of such famous former Berliners as famed architect Mies van der Rohe (mason) or film director Billy Wilder (newspaper reporter)? This is the place to find out.

Beginning with 1650, users have the option of studying another kind of map. Available roughly in 50 year intervals, these urban development maps, show different land uses and population density over time.

In-depth essays are planned for critical time periods. At this point, the project is mostly in English, but Presner envisions translating all features into at least German if not other languages as well.

"In Berlin, one can truly experience the many

Three views of Berlin—the city's origins in the 13th century, split by the Wall in the 1960s, and by satellite in 1984—all part of the interactive exploration of the city that is possible through Hypermedia Berlin.



Todd Presner, assistant professor of Germanic languages: "New media make it possible for us to experience and represent city spaces in ways that were not previously possible."

layers of the past, the city's 800 years of history seeping up into the present—the good and the bad, the glorious and the catastrophic," said Presner, who lived in the city on several occasions before coming to UCLA. "It is an extraordinarily rich, complex and inspiring place."

With time, Presner hopes to add more features. For instance, he would like to trace the history of Berlin's Jewish residents. In the 1920s, when Berlin reigned as the cultural capital of Jewish Europe, they numbered 200,000 strong. Today, only about oneeighth as many Jews call Berlin home, mostly recent immigrants from the former Soviet Union.

"In the 1930s and early 1940s, most of Berlin's Jews were forced out or murdered," he said. "We'd like to give people a chance to experience the richness of Jewish Berlin. The feature would provide a way for people to look back at aspects of Jewish Berlin and see the way in which people interacted, where they used to live and how institutions functioned."

His team is currently building a feature that will allow the four million or so residents of today's Berlin to annotate personal histories and specific parts of their hometown.

"Imagine a big oral history—not just the stories of famous people who happened to live in Berlin but also the family histories of common residents," Presner said. "People would be able to add annotations in any language they want—German, English, Polish, Turkish, whatever." Presner, who has Ph.D.s in both comparative literature and art history, sees an application for the technology beyond the academic setting. Ultimately, he envisions the information being downloaded or podcast to users on cell phones or PDAs.

"In the humanities, we really need to rethink our work because we focus too much on traditional avenues of scholarship," he said. "Why would you want to limit your audience to 200 specialists in your field? We need to reach out to all levels of expertise."

Presner is eyeing other cities as well and hopes to unveil a series of "Hypercities" over the next few years. And it's not just foreign sites that stir Presner's imagination. He is exploring funding options for adapting his digital mapping program to the rich history of New Orleans, a sizable portion of which was either destroyed or seriously compromised last year by Hurricane Katrina.

In fact, Presner's digital approach to history and culture probably will prove the most useful for chronicling places that have been dramatically altered by either nature or human intervention, such as the Aceh region of Indonesia, Baghdad, Hiroshima, Dresden and such fully obliterated ancient cities as Carthage.

"New media make it possible for us to experience and represent city spaces," Presner said, "in ways that were not previously possible."

"What we decided to do is a kind of 'digital archaeology' so that people can really get a sense of how Berlin has transformed over its 800-year history."

www.berlin.ucla.edu

### Is Satan Misunderstood?

A new book by a renowned UCLA scholar disputes the conventional view of the devil as the all-powerful evil.



Two conflicting images of Satan, both from the Book of Hours: The conventional view of Satan as the evil presence (left), and a gentler vision. (The fall of Lucifer is shown here upside down, at Henry Kelly's request, to better illustrate what he looked like before the fall.)

e's not the enemy of God, his name really isn't Lucifer and he isn't even evil. And as far as leading Adam and Eve astray, that was a bad rap stemming from a case of mistaken identity.

"There's little or no evidence in the Bible for most of the characteristics and deeds commonly attributed to Satan," says a UCLA professor with four decades in what he describes as "the devil business."

In Satan: A Biography (Cambridge Press), Henry Ansgar Kelly puts forth the most comprehensive case ever made for sympathy for the devil, arguing that the Bible actually provides a kinder, gentler version of the infamous antagonist than typically thought.

"A strict reading of the Bible shows Satan to be less like DarthVader and more and more like an overzealous prosecutor," said Kelly, a UCLA professor emeritus of English and the former director of the university's Center for Medieval and Renaissance Studies. "Satan's basic intention is to uncover wrongdoing and treachery, however overzealous and unscrupulous the means. But he's still part of God's administration."

The view runs in opposition to the beliefs held by many Christians and others about key religious concepts like original sin and the nature of good and evil.

"If Satan isn't really in opposition to God and he isn't really evil, then that means the fight between

good and evil isn't an authentic part of Christianity," said Kelly, who started his academic career at a Jesuit seminary and was ordained in four of the seven holy orders on the way to the priesthood. "What I'm saying will be scandalous to some people."

Perhaps most surprising is not Satan's presence in the Bible, but rather his notable absences in the Old Testament.

When it comes to the Old Testament, Kelly says that Satan's profile is considerably lower than commonly thought and significantly less menacing. By Kelly's count, Satan only appears three times in the 45 books that make up the pre-Christian scriptures, the best known being in the Book of Job.

"His job is to test people's virtue and to report their failures," Kelly said.

Meanwhile, in passages in Luke, Matthew, Corinthians and elsewhere in the New Testament, Satan continues to act as a tester, enforcer and prosecutor but not as God's enemy, Kelly points out.

This is not to say, however, that Kelly contends that Satan is likeable.

"Jesus doesn't like him, and Paul doesn't like him," Kelly explained. "He represents the old guard in the heavenly bureaucracy, and everyone longs for him to be disbarred as the chief accuser of humankind."

www.english.ucla.edu/faculty/kelly

Can anyone define what religion is? How is al-Qaeda religious?"

With the rapid-fire delivery of a former New Yorker, historian James Gelvin, who specializes in the social and cultural history of the modern Middle East, recently posed these questions to a class of 20 freshmen. Using friendly teasing and prodding, Gelvin, a professor of history, encouraged them to interpret the works they had read for a session of his seminar on al-Qaeda and Jihadi Islam.

The course is one of more than 200 seminars offered each year through *Fiat Lux*, an innovative UCLA program that gives freshmen an opportunity for extensive one-on-one interaction in their earliest days at UCLA with senior faculty members.

A wide array of disciplines are represented in the seminars, from anthropology ("Food, Culture, and Identity") to materials science ("High Tech: Its Role in Shaping Society and the Future") to the arts

("Music We Love") and many more offered by faculty in the College and the UCLA professional schools.

### Born from the Ashes of 9/11

Now entering its fifth year, *Fiat Lux* has enrolled more than 10,000 students. The program grew out of a desire by the College's leaderUCLA took the lead among the UC campuses in creating a broad seminar series offered for a primarilyfreshmen enrollment.

#### An Engaging Way to Learn from Distinguished Faculty and Other Students

"Freshmen need opportunities to meet informally to learn from each other and faculty members," said Smith, who noted that the new campus arrivals are given priority for *Fiat Lux* enrollment, but other undergraduates can take the one-unit seminars if there are openings. "The seminars provide an environment where grades don't pose a threat because it's a pass/no pass system, and students can participate in a small academic community with no more than 20 students and the most distinguished faculty from all university units."

Beserat Hagos, program manager for *Fiat Lux*, said the idea behind the seminars is "to engage students in active conversations with faculty and peers in small



One of the key programs in UCLA's commitment to innovation in undergraduate instruction begins as soon as freshmen arrive: a choice of more than 200 seminars offered each year in the *Fiat Lux* program.

ship to provide a forum for dialogue after the September 11 terrorist attacks. With that tragic day coming just two weeks before the start of Fall Quarter 2001, Judith L. Smith, vice provost for undergraduate education, quickly organized 57 seminars covering a broad range of issues related to the events of 9/11. Another 28 were presented the following Winter Quarter.

"It was a way to help freshmen—who were making the transition from the comfort of their home environments to a place where they would discuss difficult world issues—to understand 9/11," said Smith.

When faculty and students enthusiastically took part in the first set of seminars, an expanded program was planned to begin in 2002. It was named *Fiat Lux*, Latin for "let there be light," after the motto of the University of California, and reflected the goal of enlightening students on a wide variety of subjects. learning environments that are not common in the first years of a student's experience at a large research university."

Bhavika Rakholia is a sophomore psychology major and pre-med student who knows firsthand the value of the program to her professional goals. Last year she took a *Fiat Lux* seminar on pediatric cardiology with Daniel Levi, assistant professor of pediatrics in the David Geffen School of Medicine. Rakholia and her freshman classmates had the unusual opportu-

"The idea behind the seminars is to engage students in active conversations with faculty and peers in small learning environments that are not common in the first years of a student's experience at a large research university." nity to examine cadaver hearts, talk to children with heart problems, and practice making diagnoses, as well as participate in class discussions.

"It was great because we got to see the doctor's point of view and understand what patients go through—living with defects and receiving hospital treatment," said Rakholia, who is now working part-time in Levi's laboratory, which researches the use of catheters to replace faulty heart valves. "It was one of the best classes I've taken at UCLA so far."

#### **Invigorating Faculty**

For Levi, the seminars offer rewards for both faculty and students.

"For faculty, it's fun, and a good opportunity to teach about a subject that is partic-



The Fiat Lux seminar taught by Jack Judy from the Henry Samueli School of Engineering and Applied Science explores "Neuroengineering: The Technology that Could Enable 'the Matrix.'" Faculty from across UCLA teach in the Fiat Lux seminar program.



ularly relevant to us," he said. "For the students, it's a very good way to show to undergraduates potential areas of interest and potential careers. By exposing them to issues in medicine early, they can get a good sense of what it is all about and find out whether they really want to do it."

Frances Olsen, professor of law, likes the variety of teaching both law school students and the younger, less-experienced *Fiat Lux* students. "*Fiat Lux* gives us the opportunity to experiment with new courses and subjects, which makes it interesting," she said. "It's also a way of illustrating how much teachers like teaching, and the commitment and dedication teachers have."

Elizabeth Dwyer, a sophomore majoring in art history, last year enrolled in the seminar taught by Olsen on "Visionaries, Revolutionaries and Reformers." She found Gandhi "inspiring" and Olsen's perspective "enlightening." Dwyer also took a *Fiat Lux* course on the European Union and another on Renaissance art in Los Angeles museums.

"I loved the opportunity to read about the art-

works, go to the museums where the actual pieces are, make a presentation standing in front of them, and then get Professor Joanna Woods-Marsden's feedback right there," Dwyer said. "It really made it come alive."

The Fiat Lux experience

produces the added benefit of helping freshmen more easily adapt to the academic challenges of university life. In a two-year survey of students who have participated in the seminars, 90 percent said they felt comfortable in class discussions and two-thirds said it helped them to feel more comfortable in discussions in other classes.

In addition, 87 percent said they were exposed to new ideas by other students. Some of those surveyed remarked on having their eyes opened about serious issues for the first time, being motivated to share their newly acquired knowledge about pressing social matters, and learning how to think critically.

"The students get a skill set out of the seminars," said Gelvin, who also has taught seminars on "Clash of Civilizations" and "American Foreign Policy in the Middle East." "Students learn to write a critique of an article in a few sentences, and think about ideas like terrorism in a more serious, nuanced way. They also learn how to give back, to speak up in a small setting. Overall, it's a most enlightening experience."

## **Exposing a National Disgrace**

When nine undergraduates in the College began to understand the plight of sweatshop workers in Southern California, they collaborated to write a book to illuminate the subject.



**U** ROWING UP AMONG THE CHILDREN OF GARMENT INDUSTRY WORKERS IN EL MONTE, PAULINE PHAN ROUTINELY WAS HANDED PIECEWORK WHEN SHE VISITED THE HOMES OF FRIENDS AND NEIGHBORS.

"We'd cut threads off garments or fit newly-sewn Halloween costumes into boxes," recalls Phan, a biology major in the College. "We didn't think anything of the work. To us it was just a normal thing to do."

In fact, the daughter of hardworking Vietnamese refugees insists she had no idea that some parents work only an eight-hour day—or that child labor is illegal—until she enrolled at UCLA.

"I have a lot of friends whose parents work from the moment they get up to the moment they go to bed, and their children would help them in any way they could," she said. "I knew that they had to do what they had to do—but I didn't realize that anything could be done about the problem."

"Work, Labor and Social Justice," one of the College's yearlong Freshman Cluster courses, opened Phan's eyes. The experience was so inspiring for Phan and eight other UCLA freshmen that they decided to write a book on the subject.

Four years later, *Sweatshop Slaves: Asian Americans in the Garment Industry* rolled off the presses just as several of the students were preparing for the College's 2006 Commencement ceremony.

"Having this book finished before graduation makes this time extra special," said Jacqueline Ng, a biology major and contributor. "I feel like I've surpassed my own expectations for myself."

*Sweatshop Slaves* is the first book to focus on the Asian American garment workers of Los Angeles.

Compiled from press accounts, in-depth interviews, unpublished labor research and labor newsletters, the 104page book is designed to be a primer both for students of labor studies and for garment workers eager to learn more

about their rights. It also serves as a kind of referendum on progress for the local Asian American garment workers, whose plight became the subject of international attention with the alarming discovery in 1995 of 72 Thai immigrants held captive and forced to work 18-hour days in an El Monte sweatshop.

"The students knew nothing about these conditions before the class," said Kent Wong, director of UCLA's Center for Labor Research and Education and instructor in the Freshman Cluster on Work, Labor and Social Justice. "The book they wrote is a fulfillment of their interest in getting the word out that sweatshops aren't something that only happened 100 years ago, but they're here and now."

With government enforcement plummeting as the industry mush-

rooms, *Sweatshop Slaves* takes a hard look at the effectiveness of legislation passed in the wake of the El Monte raid.

"The greatest challenge facing the California Legislature is no longer enacting laws to improve working conditions, grievance procedures, or manufacturing practices in the garment industry; we have plenty of laws," writes student author Justin Miyamoto, a biochemistry major. "But without financial support for government organizations to implement them, these laws are useless."

A more encouraging picture emerges from grass-roots protests.

Sweatshop Slaves presents the most comprehensive account to date of four successful labor campaigns, including boycotts and other interventions from labor organizers, against clothing retailers and manufacturers.

The book also assembles for the first time profiles of six key labor groups, including a nonprofit organization started by a UCLA graduate.

The undergraduate authors of Sweatshop Slaves: Front: Sarin Prakobwanakit, Laura Tang, Jerry Loo. Middle: Pauline Phan, Cherish Hirano, Suzi Feng, Jacqueline Ng. Top: Advisor Kent Wong, Justin Miyamoto, Elizabeth Noh.



UCLA alumna Chanchanit "Chancee" Martorell credits her undergraduate work in political science and her graduate work in Asian American Studies with preparing her for the 1994 launch of the Thai Community Development Center. Dedicated to advancing the social and economic well-being of

low- and moderate-income Thai immigrants, the center responded immediately to the needs of the El Monte sweatshop laborers, who after being discovered were taken into custody by the Immigration and Naturalization Service.

In addition to portraits of labor groups, the book includes profiles of individual "sweatshop warriors," or activists who have been particularly effective in the battle against abusive labor practices in the garment industry.

The most amazing example is a former pediatrician from

China, who came to the San Gabriel Valley. Daunted by the prospects of learning English well enough to find employment in the medical field, Helen Chien eventually found work in garment factories plagued by unfair labor conditions, including abysmal pay, filthy restrooms, abusive employers and harsh chemicals without protection.

"I had no idea how cruel some employers could be," Chien, now a leading labor organizer, writes.

"It was so wonderful to have these bilingual students because we were able to get access to people who hadn't been interviewed before," added Wong, who has been teaching at UCLA for 20 years.

While the book traces the history of sweatshops in the United States, it focuses on the Greater Los Angeles area, which has surpassed the New York area as the center of the North American garment industry. Home to more than 1,000 manufacturers who employ an estimated 90,000 workers, most of them immigrants, the garment and related industries account for as much as 10 percent of the economy of Los Angeles. Nearly one in five local employees today work in the garment industry, making it a leading manufacturing sector in the region.

Order forms for *Sweatshop Slaves: Asian Americans in the Garment Industry* are available at www. labor.ucla.edu. The book can be purchased for \$10 by mailing a check to the UCLA Labor Center, PO Box 951478, Los Angeles CA 90095-1478.

"The students knew nothing about these conditions before the class. The book they wrote is a fulfillment of their interest in getting the word out that sweatshops aren't something that only happened 100 years ago, but they're here and now."

# An "Energy Force" in Understanding Stem Cells

Stem cells used in research by new faculty member Kathrin Plath to develop models for the study of cancer development.

> In Friday afternoons, the five young faculty members recently recruited to the UCLA Institute for Stem Cell Biology and Medicine can often be found sitting together, taking a break from their investigative work to cement personal bonds and reflect on their good fortunes.

"We call these our 'Assistant Professor Sessions," quipped Hanna Mikkola, M.D., Ph.D., a former Harvard stem cell scientist who was first among the five faculty members hired by the new institute since it was established last year. "We sit around feeling sorry for our colleagues who went to other places—our lives and careers are good here." The five new faculty who are the first recruits to the UCLA Institute for Stem Cell Biology and Medicine bring a wealth of background, talent and a commitment to collaborate.

The combination of a prestigious university making a major investment of resources and top leadership in stem cell research, and a state where significant funding is being committed to the effort, has proved to be a powerful attraction for some of the best young minds in the field.

"I am extremely pleased with our ability to recruit these faculty to UCLA," said Owen Witte, M.D., professor of microbiology, immunology and molecular genetics in the UCLA College and director of the UCLA Institute for Stem Cell Biology and Medicine. "They are five top people from great training environments. We competed with virtually every major institution for one or another of them, and it's gratifying that we were able to encourage them all to come here. Individually they are truly spectacular, and you can really feel the energy force of them together, and in association with other faculty."

The UCLA Institute for Stem Cell Biology and Medicine marshals the expertise of scholars across the medical sciences, philosophy and public policy in a joint effort to unravel the mysteries of the growth and development of adult and embryonic stem cells. Their goal is to translate fundamental observations about stem cells into new and more effective ways to treat and prevent a host of formidable medical issues, including HIV, cancer and neurological disorders such as stroke, spinal cord injury, brain tumors, multiple sclerosis and genetic diseases.



UCLA is investing \$20 million over five years to launch the institute. The university is positioning teams of researchers to compete for state grants created by the 2004 passage in the state of Proposition 71. Voter approval created the California Institute of Regenerative Medicine to regulate human embryonic stem cell research and provide funding at institutions throughout the state for studies in a field that is generating tremendous excitement within the scientific community.

The institute, a collaboration of the College of Letters and Science,

the David Geffen School of Medicine, the Jonsson Cancer Center, and the Henry Samueli School of Engineering and Applied Science, created a dozen new faculty positions; of the first five hires, four are based in the College.

At a time when science in many quarters remains mostly the province of men, it's also worth noting that four of the five new stem cell faculty are women.



Amander Clark: "When you're surrounded by all of these great scientists it invigorates the way you think about your own science."



Hanna Mikkola: "There's such an energy to the stem cell community at UCLA. As soon as I got here I became part of it and have already established great collaborations."

"We set out to hire the best people for the positions we had advertised, and we were delighted to be able to find such strong scientists who also happen to be women," said Witte. "These scientists are terrific role models for female students interested in science."

#### The new stem cell faculty include:

**Amander Clark** (Molecular, Cell and Developmental Biology). Clark's lab uses human and mouse embryonic stem cells to examine fundamental mechanisms involved in the formation and function of the human egg and sperm, and in the molecules essential for early embryo development. The research has important implications for the approximately 10 percent of the population of reproductive age who are affected by infertility, since normal development of the egg and sperm is essential to prevent infertility.

William Lowry (Molecular, Cell and Developmental Biology). Lowry investigates whether stem cells found in different tissues use similar mechanisms for selfrenewal and change. Adult stem cells can be found in most major organ systems, and among their defining characteristics is the ability to replicate and differentiate. A better understanding of the process stem cells use to renew themselves could prove invaluable in the battle against certain cancers, which appear to be caused by stem cells gone awry.

Hanna Mikkola (Molecular, Cell and Developmental Biology). Mikkola studies how the embryo makes hematopoietic (blood-forming) stem cells—one approach to determining what gives these cells the ability to self-renew. Hematopoietic stem cells have a unique ability to self-renew, and can sustain blood cell production throughout an individual's lifetime—but they can replicate only in response to instructive signals



William Lowry: "There is a lot to learn from people working in different kinds of stem cells and different model systems in general. Rather than getting wrapped up in your own world, you can apply ideas from other fields to your work and make real progress."

from their micro-environment. As a result, it has not been possible to expand these cells in culture while maintaining their self-renewal ability, which limits the availability of these cells for bone marrow transplants. Mikkola is seeking to understand how these cells develop and how their self-renewal ability is established and regulated during embryogenesis.

**Kathrin Plath** (Biological Chemistry, David Geffen School of Medicine at UCLA). Plath's lab focuses on understanding how changes in the structure of chromatin are established, maintained and modified to control gene expression, cell fate and cellular identity in mammals. The chromatin processes studied by Plath are deregulated in cancer, and are likely to contrib-

The combination of a prestigious university making a major investment of resources and top leadership in stem cell research, and a state where significant funding is being committed to the effort, has proved to be a powerful attraction for some of the best young minds in the field. ute to the abnormal gene expression patterns observed in cancer cells. Plath's group is establishing and characterizing new models to assess the role of chromatin in cancer development.

April Pyle (Microbiology, Immunology and Molecular Genetics). During her post-doctoral fellowship, Pyle discovered key survival characteristics important for the growth of human embryonic stem cells. How these cells "make decisions" to survive, self-renew, or differentiate is not well understood. Pyle's lab is now focused on understanding the molecular mechanisms associated with cell-fate decisions. Understanding how to improve the survival of these cells could help to facilitate genetic manipulation of cells for therapeutic benefit. Pyle's lab is also using human embryonic stem cells as a model system to pursue a better understanding of cancer progression and human development.

Pyle said she was drawn to UCLA by the leadership and vision shown by Witte and Judith Gasson, Ph.D., director of the Jonsson Comprehensive Cancer Center and co-director of the Institute for Stem Cell Biology and Medicine. (Clark, Mikkola and Plath are members of the Jonsson Center.) Equally attractive, Pyle said, was the accomplished nature of the stem cell researchers already working at UCLA—including the other new faculty.

"I knew Owen was recruiting these individuals, and that together we would make a dynamic group," Pyle said.

Mikkola, who, along with Plath, were the first two stem cell faculty members to come aboard, said she arrived with high expectations and has not been disappointed. "There's such an energy to the stem cell



**Kathrin Plath:** Her lab focuses on understanding the regulators of chromatin—the genetic material composed of DNA and proteins that forms chromosomes—and how they are involved in cancer development.



**April Pyle:** "These cells are really difficult to grow, and we're just now beginning to understand what genes might be important in promoting their growth and survival. Just being able to discuss with experienced colleagues the day-to-day issues that come up is really important."

community at UCLA," Mikkola said. "As soon as I got here I became part of it and have already established great collaborations."

While collaboration is seen as important in virtually every area of science, it is especially so in stem cell research for several reasons. Moving discoveries in stem cell research from the lab to the clinic where it can help patients is likely to require the expertise of multiple scientists. In addition, the field is relatively new and untapped, particularly in the area of human embryonic stem cells. Clark and Pyle bring experience working with human embryonic stem cells, and they are expected to work in that arena with the other new faculty, as well as with established faculty.

"These cells are really difficult to grow, and we're just now beginning to understand what genes might be important in promoting their growth and survival," explained Pyle, who has already begun collaborating with Clark and Mikkola, as well as with engineering faculty. "Just being able to discuss with experienced colleagues the day-to-day issues that come up is really important." In addition to the informal Friday afternoon gatherings, there are weekly stem cell working-group meetings, exchanges at the institute's core facilities, and a twice-a-month meeting of all students, postdoctoral fellows and faculty from the stem cell laboratories, where research progress reports are given and attendees help presenters to trouble-shoot.

The interaction has been particularly great among the new faculty.

"We talk all the time about what each of us is doing," says Lowry. "There is a lot to learn from people working in different kinds of stem cells and different model systems in general. Rather than getting wrapped up in your own world, you can apply ideas from other fields to your work and make real progress."

With several more new faculty slots to fill in the next two years, there is a sense that the positive energy surrounding the new stem cell faculty is only the start. Just as the presence of Mikkola and Plath made it easier to recruit Clark, Pyle and Lowry, the excitement generated by the five new recruits is expected to help bring equally talented new members to fill the other slots.

"When you're surrounded by all of these great scientists it invigorates the way you think about your own science," said Clark. "There is a lot of excitement here and a lot of hope that we will be able to move toward new cell-based therapies and a better understanding of the basic biology of human embryo development."



A colony of human embryonic stem cells, stained for observation in the lab of April Pyle

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## The PUZZIE of

UCLA population scholars are using technology to answer life-anddeath questions.

#### By Aaron Dalton

When a natural disaster strikes, the immediate human needs for survival are well-recognized by emergency planners: first and foremost—shelter, food, and sanitation. But how can governments or agencies have the greatest impact on shifting a population from a survival mode and onto the road to recovery and reconstruction? And what determines the ability of an individual, a family, a town, or a national population to withstand the onslaughts of destiny?

Those are some of the questions that UCLA faculty Elizabeth Frankenberg and Duncan Thomas set out to answer in Indonesia following the devastating tsunami that obliterated large parts of the Aceh province in December 2004.

"We wanted to determine the sort of assistance packages that can speed the recovery of households and communities, and the public policy initiatives that can smooth the way for recovery," said Frankenberg, an associate professor in the Department of Sociology. "We also wanted to understand human resilience in "People don't know where disasters are going to occur, so there is very rarely an opportunity to understand the impact of a disaster using data collected before the event as a benchmark."

the face of disaster: what mechanisms do people use to get their lives back on track?"

The wife-and-husband team of Frankenberg and Thomas (a professor in the Department of Economics) were ideally placed to conduct this investigation. Together, they had spent decades working on Indonesia, exploring questions involving access to healthcare and the resulting health outcomes. They had built a network of local colleagues with whom they could work on time-critical data collection efforts and later analysis.

One of the difficulties in assessing the consequences of a major disaster is designing a sample that represents the population before the disaster occurred. In Indonesia, the government had completed a representative survey of nearly 40,000 people in some 600 communities in Aceh and North Sumatra province in February 2004, less than a year before the tsunami hit.

This survey gave the researchers a baseline, a starting point in their quest to understand the effects of the tsunami and to chart the recovery of the population. Frankenberg explained that the existence of such baseline data, particularly with the breadth of the Indonesian study, is extremely unusual:

"People don't know where disasters are going to occur," she said, "so there is very rarely an opportunity to understand the impact of a disaster using data collected before the event as a benchmark."

In fact, Frankenberg said that a recent survey of the scientific literature on mental health consequences of disasters showed that few of them had pre-disaster information about respondents and most of those involved relatively small samples of around 150 people or so—not the 39,000-plus Indonesians who had been surveyed before the tsunami.

So Frankenberg, Thomas and their Indonesian partners embarked on an ambitious quest. In May 2005, they began the gargantuan task of trying to find all of the initial survey participants. They combined traditional social-science survey methods (such as door-to-door interviews) with newer high-tech methods.

For example, where earlier studies might have relied solely on reports of interviewees about the extent of a disaster, the researchers worked with UCLA geography professor Thomas Gillespie to acquire and process satellite data that allowed them to precisely measure the extent of the devastation. Where previously researchers might have asked subjects about their health status, they now have an increasing ability to learn about actual health states by collecting blood spots on filter paper in the field and then analyzing the blood back in the lab.

In the Indonesian study, Teresa Seeman, professor in the David Geffen School of Medicine at UCLA, has been working with Frankenberg, Thomas and others on biomedical analyses of data collected from population samples. Seeman explained that the blood samples contain information that reveals the key measure of individuals' health status. For example, by measuring C-reactive protein in the blood spots, they are able to determine whether a person suffers from inflammation, which has been linked to an elevated risk of cardiovascular disease.

"We are adding a layer of more objective health measures than in most population surveys that social scientists have conducted," said Seeman. "Previously, interviewers have had to reply on asking people questions about their health: 'How would you rate your health? Has your doctor told you that you suffer from certain conditions?""



Sociologist Elizabeth Frankenberg (left) and economist Duncan Thomas (below) explore how governments can create recovery in the wake of disasters, such as the devastating tsunami that struck Indonesia in December 2004.

Far left: the city of Banda Aceh on Sumatra, one month after the tsunami.

The problem with such an approach, explained Seeman, is that some populations, particularly those in developing

nations or the lower socio-economic tiers of even rich countries, may not have access to medical care and may thus be unaware of existing health problems. Even patients who do have health insurances and/or access to medical care may simply forget about a problem that a doctor did mention.

The use of "biomarkers"—biological evidence of a certain disease state or health condition—means that researchers have removed their data from the realm of fallible memory and placed it within the scientific sphere of objective fact. In this study, the biomarker is in the form of C-reactive protein contained in the blood samples from survey participants.

Look for these biomarkers to become a frequent component of population studies. The most recent grant renewal for UCLA's California Center for Population Research *(see the related story on page 26)* included funding for further collaboration between health specialists like Seeman and social scientists like Frankenberg and Thomas, all of whom are affiliates of the center. Seeman and her colleagues in the Geffen School of Medicine at UCLA are work-

ing to set up an infrastructure that will help researchers on any population study incorporate biomarkers if they so choose.

"We are really developing strong interest from both the social sciences and the medical school in broadening our collaborations," said Seeman.



### **UCLA California Center for Population Research:** A Merging of Methods to Understand Key Social Problems

he cross-pollination between disciplines—in the College of Letters and Science and other units at UCLA—is both a key strength and a major focus of the UCLA California Center for Population Research (CCPR). Funded by a grant from the National Institute of Child Health and Human Development (NICHD), the UCLA Population Center achieved better scores on its grant application than any other university population center had ever achieved, according to Don Treiman, a professor in the Department of Sociology and the new director of the center.

Treiman, who gives much credit for the organization's success to previous directors Rob Mare and Duncan Thomas, describes the Population Center as a consortium of more than 60 UCLA faculty and another 80 graduate students from across the social sciences (particularly sociology and economics) as well as the schools of public health, public affairs, and medicine. The Population Center also draws on the strengths of more than a dozen affiliated faculty at other universities.

According to Treiman, the Population Center is in the business of encouraging innovative population research while simultaneously training its graduate students to become the future leaders in the field of population research around the country.

"Demography over the last 20 years or so has shifted from a relatively technical and narrow focus on population change or composition—births, deaths, migration, aging—toward applying the methods of population studies to a wide variety of social and health issues," said Treiman.

Treiman, who himself studies social inequality and mobility, again highlights the sort of collaborations taking place between social scientists and medical scientists—a field he describes as "biodemography."

Treiman said that a large number of population researchers at UCLA have begun including the collection of biological specimens in their surveys to study the links between social status and health outcomes. The simple technology of taking pinprick blood samples and storing the blood as a dried spot on filter paper makes it possible to collect biological data in remote villages with no refrigeration or other analysis tools.

Treiman, who these days conducts much of his research in China, can collect samples in rural villages and send them to Beijing for analysis, conducting studies on a whole array of diseases and health conditions. Both sides benefit—social scientists like Treiman get access to better data on links between health and social status, while medical researchers learn more about the distribution of health deficits and inequalities within large population groups.

Besides biodemography, CCPR is also breaking ground in an emerging field called "spatial demography" that incorporates the work of geographers.

Population scientists use two methods to add a spatial dimension to their projects. One way is through satellite imagery, which sociologist Elizabeth Frankenberg has used in Indonesia not only to look at the impact of the tsunamis, but also to measure the effect of forest fires on the health of populations.



Residents of a camp for displaced residents in Indonesia, more than a year after the Research is bringing together faculty from a range of disciplines at UCLA to devel problems, such as the reconstruction of disaster-torn areas.

Forest fires are used for clearing agricultural land in Indonesia, but they can sometimes burn out of control. In 1997, particularly dry conditions led to raging fires in Indonesia. Frankenberg and Thomas were able to use satellite data on the extent of haze cover to locate those areas hardest hit by smoke from the fires and then conduct sample surveys that showed the smoke from the fires did in fact have a strong negative effect on health.

As a second tool, Treiman uses a different sort of technology in performing spatial demography within his own China research. In China, demographers face several challenges in conducting a sample survey. Some areas of the country are so



tsunami struck in December 2004. The California Center for Population op answers to the social, medical and economic consequences of key social

### "Demography over the last 20 years has shifted from a technical and narrow focus on population change or composition—births, deaths, migration, aging—toward applying the methods of population studies to a wide variety of social and health issues."

densely populated that demographers must choose very small areas (as small as 1,000 square feet in some cases) in order to conduct their surveys. High-resolution satellite data helps them to pick an area that contains a good representative sample of the larger area to which they wish to extrapolate their data.

Another common problem for demographers in China is that many locations lack actual addresses, making it hard to tell an interviewer to visit a particular household. As a solution, Global Positioning System (GPS) devices solve the problem by allowing survey organizers to direct interviewers to visit particular GPS coordinates and conduct interviews there. Demographers also use GPS in other ways, for example to precisely identify the distance between the homes of survey participants and their work.

Ask Don Treiman about the future of population research at UCLA and he will tell you that the level of interdisciplinary collaboration will only increase, particularly in the biodemography field. Treiman also wants the Population Center to expand its research into aging, train all its social sciences graduate students in basic biological research and form more substantial international connections of the type already forged in Indonesia, China, Mexico, Malawi and elsewhere. He hopes to involve the Center with research into HIV/AIDS in South Africa, particularly from a biodemography standpoint.

As Thomas, the previous director of the Population Center said, "The goal of the center is to conduct the most innovative work at the current frontiers of population sciences." Those frontiers are expanding and the UCLA California Center for Population Research will no doubt continue to be at the forefront of using all the tools at its disposal—from satellites to blood spots, from GPS to old-fashioned interviews—to map the connections between space, health, natural disasters, human reactions and all the myriad social consequences that follow.

### GREAT FUTURES FOR THE COLLEGE

# A Great Adventure Story

A new gift of \$10 million from Lloyd Cotsen will transform the study of archaeology at UCLA—and beyond.

hen Lloyd Cotsen and his late wife moved to Los Angeles from New Jersey years ago to be near her family, he took a few courses at UCLA "for intellectual curiosity." He joined field trips sponsored by the university's Friends of Archaeology and, in 1966, donated \$10 to the group. That first gift was the start of a vibrant and mutually-rewarding relationship with UCLA's archaeology program that now spans four decades.

Cotsen's enthusiasm and involvement have increased over time, and his generosity has grown exponentially. In 1999, the university's Institute of Archaeology was renamed the Cotsen Institute in recognition of his outstanding contributions, including a \$7 million gift in support of faculty, students, publications, laboratories, academic programs and public outreach. Through Cotsen's extraordinary philanthropy, an already distinguished program has become one of the best in the field.

"Lloyd Cotsen has ensured will likely transform not that archaeology at UCLA will thrive indefinitely, allowing us not only to study and preserve our global heritage, but to change people's lives positively through the practice of archaeology."

Now, in a move that only UCLA's programs but the discipline itself, Cotsen has added \$10 million more to the institute's endowment, making him the largest individual donor in the history of the College.

The new gift will

substantially augment the Cotsen Graduate Fellowship Program, create the Cotsen Undergraduate Scholars Program in support of undergraduate research, provide faculty recruitment resources for related academic departments, establish the Lloyd Cotsen Research



Lloyd Cotsen: "The real thrill is being out there seeing and touching and feeling what remains of a group or culture. It gives you a different view of the world."

Prize for junior and senior archaeology scholars and graduate students, initiate a field research program that encourages collaboration between non-archaeology and Institute faculty, support the successful publication program, and create the Cotsen Opportunity Endowment-a new discretionary fund that will enable the institute's director to respond immediately to innovative ideas and programs.

For Cotsen, archaeology has been a lifelong interest, a "great adventure story." A graduate of Princeton University, Cotsen earned an MBA at Harvard and eventually became president, CEO and finally chairman of the board of Neutrogena Corp. But he also spent 20 seasons as a field architect on archaeological excavations in Greece. Over the years, he has seen the discipline change considerably, including the introduction of computers and other new technology. For Cotsen, though, "the real thrill is being out there seeing and touching and feeling what remains of a group or culture. It gives you a different view of the world.

Your time is not the only time. Also, it's an adventure of the mind, trying to anticipate where these forces, these people, will break out, disappear, and why."

Cotsen is as excited about the future of archaeology as he is about the past he has studied: "I hope there will be new questions to ask. It's the questions that really make it exciting, not the answers."

And he believes the institute will play a vital role in that future.

"There's only one word I'd use: excellence. If you can't be the best, don't try. I think UCLA has the elements—vision and leadership—to take a strategic position in the field of archaeology. You need a visionary, some smart people, and some funds, in that order."

In Cotsen's view, UCLA's visionary is Professor Charles "Chip" Stanish, director of the institute. "Chip is a very dynamic person," Cotsen said. "He doesn't take 'no' for an answer. He knows what he wants, and he goes for it." As for the "smart people," Cotsen noted that the faculty and students of the institute are "very focused, they have leadership." Now, thanks to Cotsen's foresight and unwavering commitment, the institute has the final element: the resources that will lift it to greatness.

Stanish, who is delighted by the gift, said, "This gives the Cotsen Institute one of the largest endowments in the world for the study of archaeology. Through his generosity, Lloyd Cotsen has ensured that archaeology at UCLA will thrive indefinitely, allowing us not only to study and preserve our global heritage, but to change people's lives positively through the practice of archaeology."

### Reaching for the Stars: Inspiring Women in Science

Thanks to the visionary philanthropy of Lauren B. Leichtman and Arthur E. Levine, UCLA's Department of Physics and Astronomy will soon have a substantial new resource for recruitment and retention of eminent faculty members.

Through a generous gift of \$1 million, Leichtman and Levine are creating the Lauren B. Leichtman and Arthur E. Levine Astrophysics Endowed Chair, the first chair for the study of astronomy and astrophysics at UCLA.

The dynamic husband-and-wife partners in the private equity investment firm of Levine Leichtman Capital Partners, Inc., are long-time supporters of UCLA. Levine earned an undergraduate degree in philosophy in 1973 and an MBA in 1976 from the Anderson School; Leichtman, a graduate of the Southwestern School of Law, is an active and dedicated member of Women and Philanthropy at UCLA.

Leichtman and Levine were inspired to create the new endowed chair by UCLA astrophysicist Andrea Ghez, who is developing and using high-resolution imaging techniques to investigate star formation and the proposed massive black hole at the center of our galaxy. In fact, the Leichtman/Levine Chair is designed to support a faculty member who is committed to mentoring and advancing women in science. "It's

For information about supporting the UCLA College of Letters and Science, call Tracie Christensen, assistant vice chancellor of development (310)206-0699. important to support women in the same way as men," said Ghez, "because this influences how women students view their potential in this field."

Because foundation and government grant money is normally given only to research that has already proven successful, new ideas often must be set aside due to insufficient funding. Endowed chairs encourage innovation by providing faculty with unrestricted research support.

Leichtman and Levine have furnished supplementary support for Ghez as well, in the form of a currentexpenditure fund for her research and assistance for a first-year graduate student on her team. They also have provided resources to enable Ghez to bring a visiting scholar, Professor Claire Max of UC Santa Cruz, to UCLA for the fall quarter to work with Ghez on developing the science case for the next-generation adaptive optics system at the Keck Observatory in Hawaii.

"Establishment of the Leichtman/Levine Chair will have a tremendous impact on the Physics and Astronomy Department's efforts to recruit and retain top faculty," said Tony Chan, dean of physical sciences when the gift was announced. "We are grateful to Lauren and Arthur for their extraordinary generosity."

A gift from Lauren Leichtman and Arthur Levine '73 creates the first chair at UCLA for study of astronomy and astrophysics.

### Joan Palevsky: A Philanthropist Inspired by Passion and Devotion

Over more than 60 years of affiliation with UCLA, Joan Palevsky played several roles: student, faculty member, volunteer and philanthropist. When she died early in 2006, Palevsky left a profound legacy of support for UCLA and the community, and for her passions of language, literature, art, academic inquiry and political progressivism.

Palevsky's first gift to UCLA was \$35 for a UC Regents fund for Art and Architecture instruction in 1969. At her death, her giving to UCLA totaled nearly \$9 million, including a \$4.25 million bequest from her estate to the College of Letters and Science.

Palevsky's life began rather modestly. She was born Joan Yates in Omaha, Nebraska, and grew up in Los Angeles during the Depression, the daughter of a single mother and absent father. She had planned to leave Los Angeles to attend college, but as she recalled, "In wartime, going away to college was out of the question. So my mother said, 'You must go to UCLA.'

"I had a wonderful time at UCLA," Palevsky said, and soon didn't long to go anywhere else."

In the 1970s, Palevsky shared her passion for language and books as a frequent contributor of book reviews for the *Los Angeles Times*. A decade later, she paid tribute to her UCLA Latin teacher and friend, Helen Caldwell, by funding an undergraduate scholarship and naming it after her.

### "Joan was a true philanthropist. She didn't do it for the recognition, but because she believed in supporting quality programs."

"Joan came to graduation and was very supportive of classics students and the study of literature and languages, sharing that love with Caldwell," said Robert Gurval, associate professor of classics and acting chair of the department. "In general, though, Joan was very private, and didn't like making a fuss about things. She also had a great sense of humor."

Now, part of her multimillion-dollar bequest to the College will fund the Joan Palevsky Chair in Classics. It also will establish the Dr. E. Bradford Burns Chair in Latin American History, the Madeline L. More than six decades of involvement with UCLA led Joan Palevsky '47 to create a visionary range of support for the university.

Letessier Chair in French and Francophone Studies, the Joan Palevsky Graduate Fellowship and Scholarship Fund, the Joan Palevsky Endowed Honors and Undergraduate Research Scholarships, and the Humanities Dean's Discretionary Fund.

"Joan was a visionary in making three endowed chairs a part of her bequest, two of them for the first time, in classics and French, which are two of our strongest programs," said Patricia O'Brien, executive

dean of the College.

"Joan was a true philanthropist, both in terms of how much she gave and that all of her gifts were anonymous or in someone else's name before her death," said O'Brien. "She didn't do it for the recognition, but because she believed in supporting quality programs."

Ned Alpers, chair of the Department of History, recalled Palevsky as being "very independent-minded, plain spoken, delightful, and savvy." He said the new chair in Latin American history will geographically round out the department's complement of endowed chairs,



Joan Palevsky: "There are a few institutions that are dear to me," she said in 1992. "One of them is UCLA."

which currently includes two in United States history, two in European history, and one in Indian history. Palevsky had previously endowed one of the current chairs, the Eugen Weber Chair in Modern European History.

As a founding member of Women and Philanthropy at UCLA, Palevsky also helped to nurture the emergence of other female supporters of the campus that had earned her devotion. "I'm very grateful to the university," Palevsky once said. "I'm not terribly introspective, but I've lived in L.A. most of my life, and there are a few institutions that are dear to me. One of them is UCLA."

### Making a Difference

A new endowed chair created by Stanley and Myrna Zimmerman helps UCLA compete for top faculty in economics.

With a generous gift of \$1 million, UCLA alumni Stanley and Myrna Zimmerman have created the Stanley M. Zimmerman Endowed Chair in Economics and Finance.

The first Zimmerman Chair has been awarded to Andrew Atkeson, professor in the Department of Economics. Atkeson's innovative research focuses on macroeconomics and international economics. At the time the Zimmermans made their gift, Stanford University was strongly interested in Atkeson and was actively trying to recruit him.

"As a public institution, UCLA does not have the same kind of resources to support research as its better-endowed private cousins, and this can make it difficult for many faculty members to continue working here," Atkeson said. "The Zimmerman Chair is critical in allowing me to continue my research and teaching at UCLA. For me, the Zimmermans' generosity has made all the difference."

Funds generated by an endowed chair help support the chairholder's research, graduate and undergraduate student assistants, new teaching initiatives, equipment, professional travel and other related needs.

The Zimmerman Chair will have a significant impact on the Department of Economics' ability to compete for eminent scholars for decades to come.

"The Zimmerman Chair brings honor to the chairholder and provides considerable resources to an area of growing academic importance in the social sciences," said Scott Waugh, dean of the Division of Social Sciences. "This gift also demonstrates a welcome confidence in the quality of the Economics Department, the Division of Social Sciences, and UCLA generally, as we come to rely increasingly on the generosity of our alumni and friends."

The Zimmermans were students at UCLA in the 1950s, when the cost of an education was just \$45 per semester. Both chose to attend UCLA because it was near their homes and inexpensive. Myrna said, "I didn't even drive, I took a bus to school." Stanley added, "UCLA was all my parents could afford."

Fortunately, UCLA also provided an excellent education. Stanley, who majored in business administration, said, "I used what I learned in economics and finance to prosper. A lot of what I earned was a result



Myrna and Stanley Zimmerman: "We basically had a free education," said Stanley. "If you got a free education, you have an obligation to help other people get an education."

of the education and training that I got at UCLA." Currently he is "semi-retired" from his position as chairman and chief executive officer of Home Budget Loans and is devoting much of his time to expanding the remarkable classic car collection in his Automobile Driving Museum, established in 2002.

Myrna earned a B.A. in education in 1957 and taught second grade for several years in Los Angeles. "Then I raised four kids!" she said, smiling. Now she uses her education as a volunteer tutor for children with reading difficulties.

The Zimmermans support their alma mater enthusiastically. Myrna said, "I'm grateful that I had the opportunity to go to college, that UCLA was here." Stanley explained, "We basically had a free education, and we felt that we ought to pay for it somehow. If you got a free education, you have an obligation to help other people get an education."

# When invention becomes the mother of necessity.

"When you're in a competitive business—high-speed data connections, for instance—life is very daily. As soon as something important is discovered, everybody knows about it, and the game starts over at that new place. Research and development has gone from important to critical to life-or-death.

"Nowhere are the new stakes more obvious than at the world's leading research universities. That's where the biggest, fastest changes are taking place. That's where the lion's share of all research is migrating, bringing new roles and new rules.

"The only exception is new product development, the nearest

"Who knows what my company's going to be doing in 20 years? Probably something that was discovered at a university." of the near term. Private industry continues to control this, as it should. Companies may have very sophisticated, long-term strategies, but they need to concentrate their resources on their clearest possibilities. The horizon is usually two or three years. No more than that.

"At the other end of the parade, virtually

all basic research today is university-based, with a 10- to 20-year horizon. As that work finds its way into applied research, the engineering schools pick it up and drive it to real-world applications.

"But, the big middle, the vast majority of applied research, is in the 3- to 5- to 10-year time zone. These are high-priority, high-yield concepts that have been identified by industry or government. That's where the universities have taken command.

"Bioengineering's a great example. If you are looking to do a new artificial device—a heart, an ear, an eye—it's going to involve a lot of engineering, physics, chemistry to create those artificial organs.

No single human being has the knowledge to understand all aspects of what is required.

"UCLA has that breadth and depth: multiple departments and schools that are always in the top tier. Excellence across the board. That's something that very few universities can claim.

"Our company readily funds research proj-



Henry Samueli is Chairman and Chief Technology Officer, Broadcom Corporation. A noted scholar who received his B.S., M.S., and Ph.D. degrees from UCLA, he is also a distinguished faculty member and generous supporter of academic research at this university.

"Multidisciplinary centers like UCLA are replacing industry-sponsored research labs. That's the future."

ects at UCLA and other UC campuses. We've done it for years—without any intellectual property restrictions, as unrestricted gifts. It's a business strategy, pure and simple.

"Our payoff is for knowledge to be advanced and the very best students to be fully up to speed and ready to work at the leading edge. At a place like Broadcom, for example."

### Henry Samueli. UCLA, Unabashed.



The devastation in Sumatra caused by the tsunami in December 2004 raises critical questions about how governments and civic agencies can move communities onto the road to recovery following a major disaster—issues that are the focus of work by faculty in the UCLA California Center for Population Research. For more about the center's work, see page 24.



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