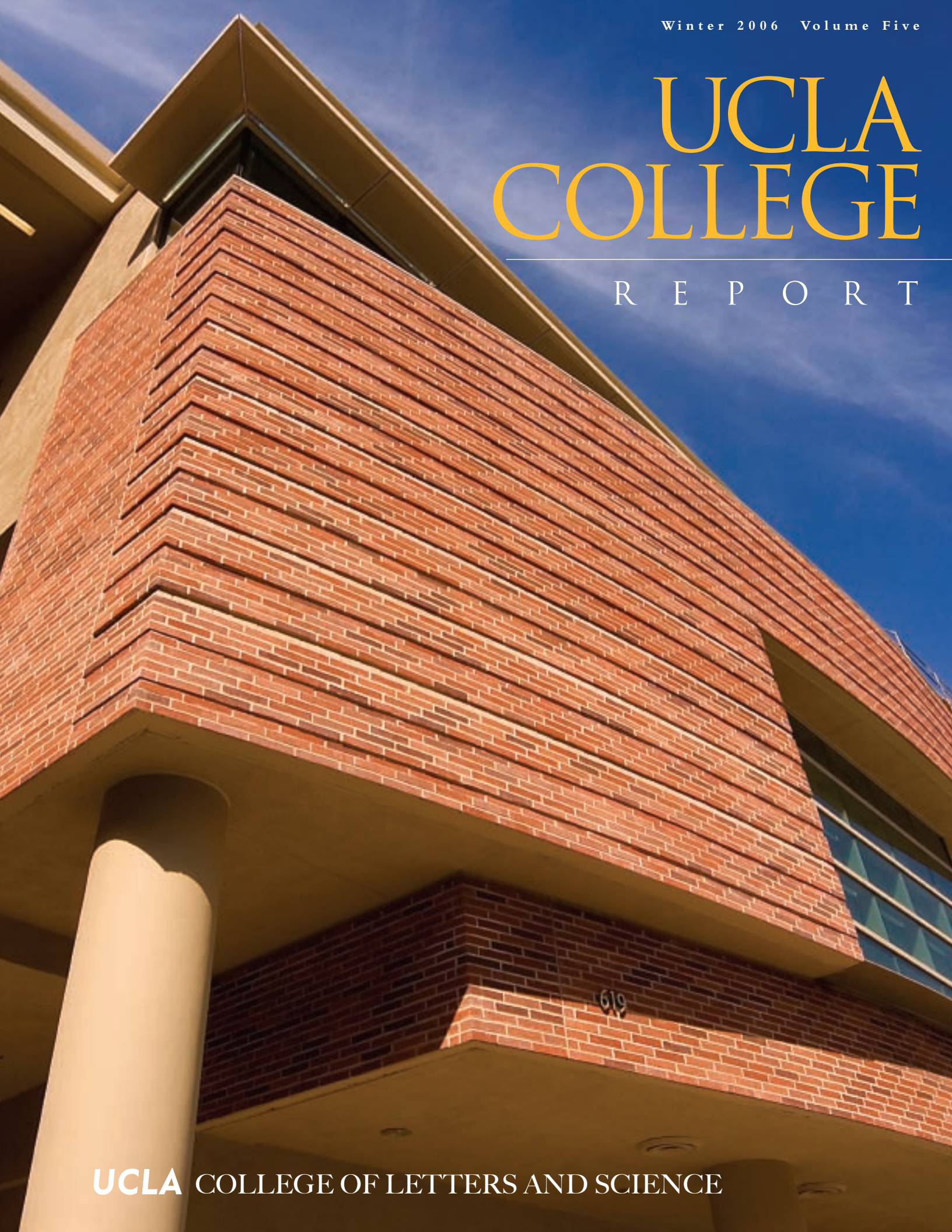
Winter 2006 Volume Five

UCLA COLLEGE REPORT



UCLA COLLEGE OF LETTERS AND SCIENCE

FROM THE EXECUTIVE DEAN

The 2005–2006 academic year got off to a rousing start in Pauley Pavilion on September 26 as UCLA's taiko drummers welcomed to the campus 7,000 new students—4,000 freshmen and 3,000 transfer students. At this New Student Welcome, our keynote speaker, Professor Ric Kaner of the Department of Chemistry and Biochemistry, encouraged our new students to get involved in primary research—a vital aspect of undergraduate education at UCLA.

Joining Professor Kaner at the New Student Welcome were Chancellor Albert Carnesale, Vice Chancellor of Student Affairs Janina Montero, Undergraduate Student Association President Jenny Wood, and me. Jenny Wood urged our students to get involved outside of the classroom in the rich life of our community.

The New Student Welcome is part of our commitment to nurturing a true academic community on campus, in which residential life for undergraduates is merged with a full range of courses and other UCLA services right in the campus housing complex. UCLA is no longer the commuter school it was 30 years ago; now, more than 90 percent of our incoming freshmen live on campus, and we believe that strong ties for students to an academic community—literally right where they live—are an important element in the undergraduate experience.

In 2005, we've seen several construction milestones for the College, including the completion of the campus's first "green" building: La Kretz Hall, on the south campus (on the cover). In the photo at left, Professor Jared Diamond (right), shown here with alumnus Morton La Kretz and me, delivered the inaugural lecture for the new building in June.

In this academic year, the College will see the beginnings of construction for a new Life Sciences building on a site now occupied by a wing of Hershey Hall. The new Life Sciences Building, a 100,000-square-foot project, will house 49 laboratories and other technical facilities—projects that are much needed to support work in the biosciences.

Our UCLA family also includes the parents of our students, many of whom serve as volunteers and loyal supporters of our programs. In October, the College deans met with about 700 families in a "Dialogue with the Deans" at the UCLA Parents' Weekend, held this year from October 28–30. Shown here are S.L. and Betty Huang of San Juan Capistrano, whose daughter Tiffany is a freshman in the College. Events such as these are constant reminders of the strong generational ties among our students, our alumni, and their families that make UCLA a great university.

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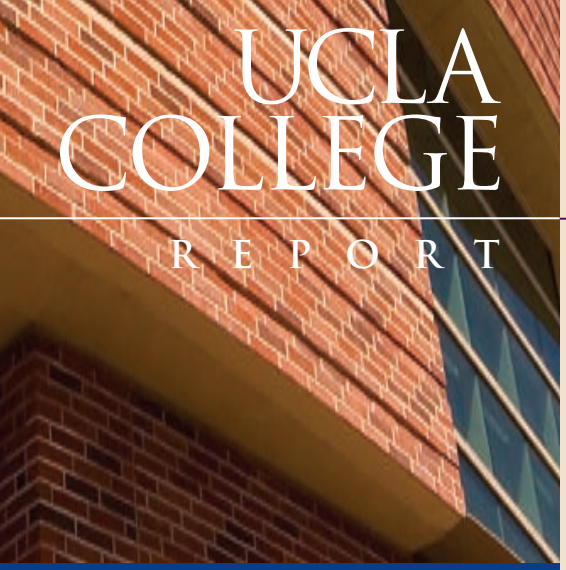


UCLA COLLEGE REPORT

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

Volume Five Winter 2006

For comments about *UCLA College Report*, write to the editor, Harlan Lebo, at hlebo@support.ucla.edu.

FEATURES

DISCOVERY

SNAPSHOTS

On the cover: La Kretz Hall, UCLA's first building to be certified under national "green" building guidelines. La Kretz Hall houses classrooms for undergraduate instruction and the UCLA Institute of the Environment.

Unless otherwise indicated, all photos by Reed Hutchinson, UCLA Photographic Services.

College News

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

New Leadership for College Divisions

Two UCLA faculty with long experience in university management will assume senior positions in the College.

Two UCLA faculty are assuming interim leadership roles for the UCLA College of Letters and Science while national searches are underway.

Ronald Rogowski, interim vice provost, UCLA International Institute

Ronald Rogowski
UCLA International Institute

Ronald Rogowski has been named interim vice provost for international studies and dean of the UCLA International Institute.

Rogowski assumes leadership of the institute from Geoff Garrett, who became president of the Pacific Council last summer.

Rogowski, a specialist in comparative politics and political economy, chaired the political science department from 1987–92 and from 1996–2000.

Rogowski's recent research explores how the design of electoral systems affects a nation's economic policies. He has also investigated globalization, capital mobility and the sources of price differentials across national boundaries. His teaching areas include a "capstone" course in comparative politics, an upper-division course on international political economy, and a graduate course on the external sources of domestic politics.

Rogowski has served as a vice president and program co-chair of the American Political Science Association and was elected in 1994 as a Fellow of the American Academy of Arts and Science.

Jonathan Post
Humanities

Professor of English Jonathan Post, a scholar with extensive experience in senior university management, is serving as interim dean of humanities.

Post, who served previously as interim dean in 1992–93, is a renowned scholar of poetry from William Shakespeare to the present, as well as the painting and music of the Renaissance. Post has specific scholarly interests in 17th-century poetry, the works of John Milton and Thomas Browne, and modern lyric poetry, especially the poetry of Elizabeth Bishop.

Post teaches undergraduate courses on 17th-century literature, as well as undergraduate seminars on poetry. He is the founder and administrator of UCLA's Shakespeare Stratford Program, which is held for undergraduates in England each summer. Now in its 13th year, the program is affiliated with the Royal Shakespeare Company and the International Globe Theatre, and reinforces Post's emphasis on linking Shakespeare's text with performance.

Post joined the UCLA faculty in 1979. He served as chair of the Department of English from 1990–93. Among his honors, he has been a Fellow of the National Endowment for the Humanities, The John Simon Guggenheim Memorial Foundation, and the Bogliasco Foundation.

Jonathan Post, interim dean of humanities

2006 College Awards Dinner set for March 6

On its way to you soon will be your invitation to the 2006 College Awards Dinner, which will be held on March 6 at the Beverly Hills Hotel.

The annual event celebrates the achievements of outstanding students in the College of Letters and Science, and honors special friends of the College for their extraordinary involvement.

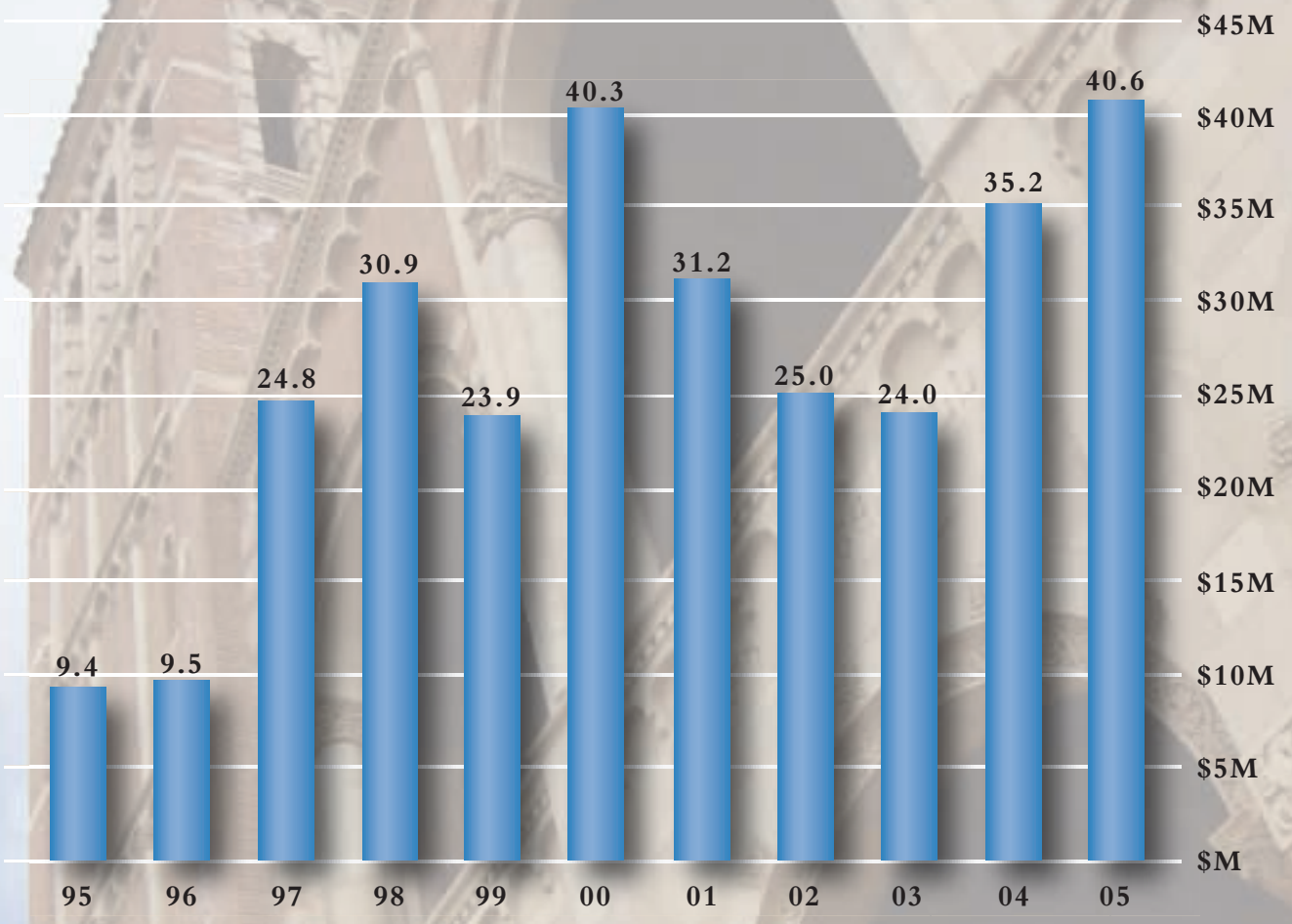
Funds raised through the College Awards Dinner provide critical support for undergraduate and graduate students, and faculty recruitment and retention efforts.

For 2006, the College will honor Shari and Garen Staglin, both longtime donors and volunteers. Six students will be honored with the Charles E. and Sue K. Young Undergraduate Awards and the Young Graduate Student Awards, which were established through the generosity of Louis and Evelyne Blau in honor of UCLA's former chancellor and his late first wife.

For more information about the 2006 College Awards Dinner, call (310) 206-1953.

UCLA COLLEGE GIFT HISTORY

Campaign UCLA FY 1995 – FY 2005



The UCLA College of Letters and Science recorded its best fundraising year ever, with $40.6 million in gifts for support across the disciplines in 2004–05.

"We are particularly gratified to see an increasingly high level of support from our alumni and friends," said Patricia O'Brien, executive dean of the College. "Philanthropy is having a major impact on our priority initiatives in the College, including faculty recruiting and retention, graduate fellowships and undergraduate scholarships."

Gifts to the College are recorded as part of Campaign UCLA, which concludes December 31, 2005.

Reprinted from UCLA College Report, the publication of the UCLA College of Letters and Science.

UCLA Awarded $6 Million for Research on Biodefense and Infectious Diseases

The campus will participate in a consortium of research institutions that will use basic scientific research for defense against diseases and potential bioterrorism agents.

The threat of bioterrorism—the poisoning of water, air or food systems by terrorists—has loomed large over the nation, especially since 9/11. Partly in the hope of warding off or blunting possible attacks, UCLA was recently awarded $6 million by the National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health.

Conducting basic research will be an important part of the center's work, said Jeffery F. Miller, professor and chair of the Department of Microbiology, Immunology and Molecular Genetics (MIMG) and holder of the M. Philip Davis Chair in Microbiology and Immunology. Miller also serves as the center's associate director for basic research.

> "We will study the fundamental mechanisms of how bacterial pathogens work and cause disease. Our hope is to increase fundamental knowledge of bacterial and viral pathogens and help mitigate the bioterrorism threat."

While the center's goals include scientific applications to detect, prevent and treat diseases and bio-agents—including developing vaccines—Miller emphasized the importance of basic scientific research in providing the foundation of defense against diseases and potential bioterrorism agents.

"Basic research is essential," said Miller, a member of both UCLA's David Geffen School of Medicine and the UCLA College. "We will study the fundamental mechanisms of how bacterial pathogens work and cause disease. Our hope is to increase knowledge of bacterial and viral pathogens and help mitigate the bioterrorism threat." Infectious diseases remain the second leading cause of morbidity and mortality in the world, said Miller. By working on an organism that causes pneumonia and septicemia and also is a potential source of bioterrorism, Miller said his team hopes to develop a precise understanding of mechanisms of pathogenesis.

The center's mission will be to strengthen research into potential sources of bioterrorism, such as anthrax and botulism, and naturally occurring infectious diseases like dengue and West Nile virus, which are rising worldwide. The center will also provide scientific know-how and facilities in the event of a national emergency such as a terrorist attack or an epidemic of infectious disease.

All of this will call for wide-ranging safety and security precautions, as required under federal regulations.

UCLA is part of a consortium of more than a dozen universities and research institutes that will receive a total of $40 million over four years to establish the Pacific-Southwest Center for Biodefense and Emerging Infectious Diseases Research, based at UC Irvine.

The importance of studying pathogens has been a long-standing concern of scientists. "Much of what we learn will be applicable to many different diseases," said Miller. "In a general sense, the events that transpired in the fall of 2001 are another reminder of the incredible importance of infectious diseases, whether anthrax, AIDS, tuberculosis or malaria."

www2.niaid.nih.gov/Biodefense/Research/rce.htm.

Lecture Series to Feature Highlights of Work by Top Scholars

The College's lecture series that highlights the work of some of the university's finest scientists begins in January with programs by five scholars who will explore key issues in their research.

The fourth annual UCLA Science Faculty Research Colloquium Series is for an audience of scholars and interested non-scientists, with an additional goal of fostering interdisciplinary collaborations.

The series was created with a gift from S.L. and Betty Huang, donors and volunteers for the university.

The lectures will be held in the College's new Physics-Astronomy Building, from 5–7 p.m. The lectures are free and open to the public.

For more information about the series, visit www.college.ucla.edu/colloq.htm

Science Faculty Research Colloquium Series, 2006

January 12	**Andrea Bertozzi**	Mathematics
February 2	**Chih-Ming Ho**	Engineering
March 23	**David Eisenberg**	Chemistry and Biochemistry, Howard Hughes Medical Institute *(For more on Eisenberg's research, see page 6 of this issue.)*
April 27	**Sherie Morrison**	Microbiology, Immunology and Molecular Genetics
May 4	**Fraser Stoddart**	Chemistry and Biochemistry; California NanoSystems Institute

Photos: Karen Frey

A team led by UCLA geographers has found that lakes in the wilderness of Siberia are shrinking or vanishing—findings that contradict past research on climate change.

The Disappearing Lakes of the Arctic

Global warming appears to be causing lakes to drain and disappear in Arctic regions, a UCLA-headed team of researchers has found.

If the pattern persists, it may imperil migratory birds and disrupt the region's weather, cautioned Laurence Smith, the study's lead author and an associate professor of geography at UCLA.

Along with geography department chair Glen MacDonald and researchers from the State University of New York in Syracuse and the University of Alaska, Smith tracked changes in more than 10,000 large lakes by examining satellite imagery taken between 1973 and 1998 across the Siberian wilderness.

In the study funded by the National Science Foundation, the team found that the total number of lakes larger than 100 acres decreased from 10,882 to 9,712, a decline of 11 percent. Most lakes did not disappear altogether, but instead shrank to sizes less than 100 acres. However, 125 lakes vanished completely and became covered with vegetation.

The findings run counter to past climate change research, which has tended to show that Arctic warming results in the increase of bodies of water as the icy permafrost layer melts like an ice cube, forming ponds.

"We were totally surprised by our findings," Smith said. "We were expecting the lake area to have grown with climate change."

Arctic weather patterns have become a closely watched field in recent years because the region's climate is changing at a much faster pace than that of the rest of the globe.

Lakes in Western Siberia are draining, sometimes disappearing entirely, but often leaving behind much smaller ponds that look like the wilderness wetlands shown above.

What causes the disappearing lakes? The team points to the thawing of the permafrost layer. But unlike the theories formed during earlier research, the current findings focus on thawing of the water-tight permafrost layer along lake bottoms.

"Most of these lakes are laying on top of permanently frozen ground, a surface that prevents lake water from draining into the ground, " Smith said. "We think that climate warming is thawing the permafrost. When that occurs, it's like pulling the plug out of a bathtub—there's nothing to prevent lake water from percolating through the soil to aquifers below.

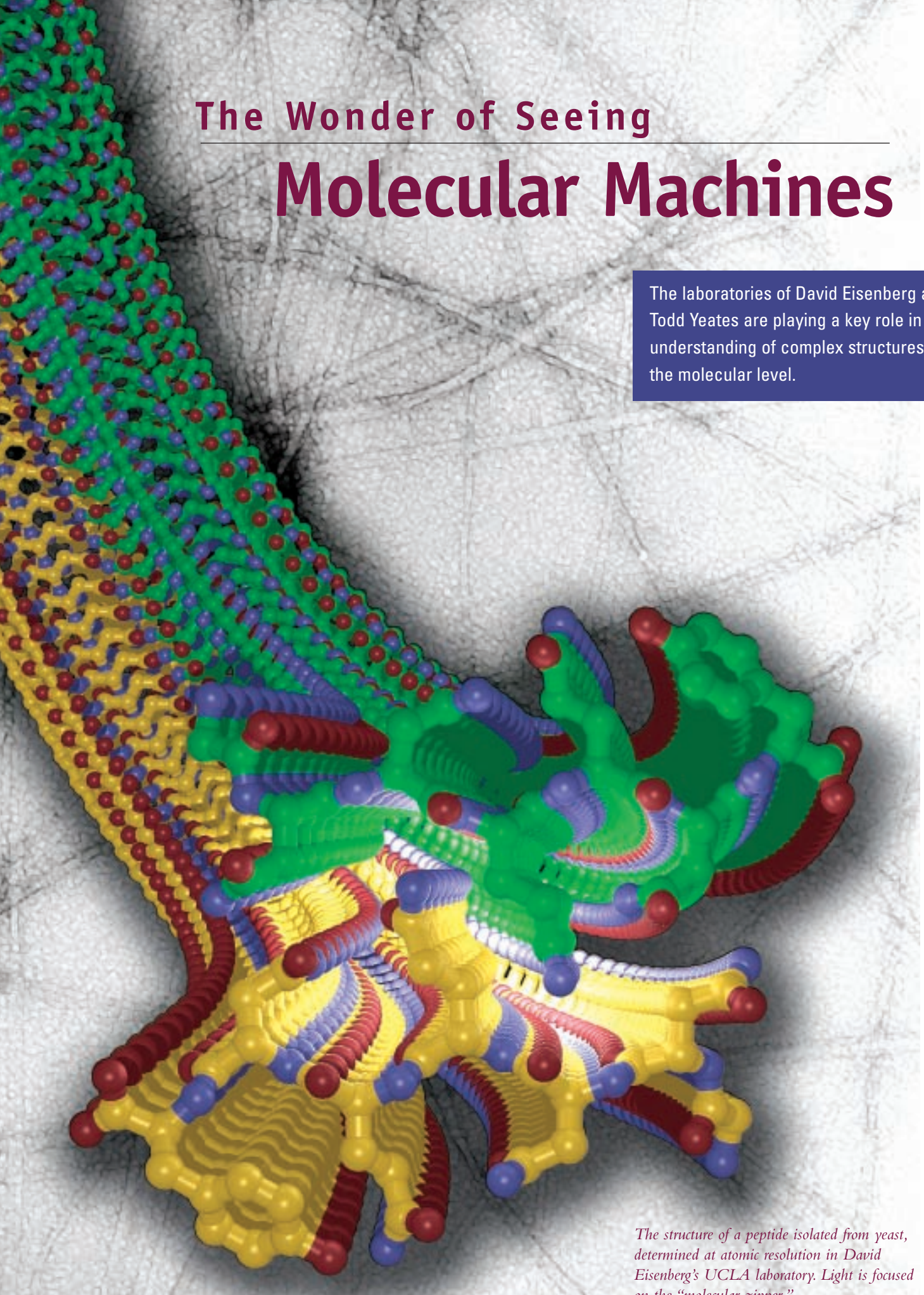
"The process appears to be abrupt and irregular," Smith said. "From what we can tell from space, a lake is either just fine or it's gone." CR

www.geog.ucla.edu

The Wonder of Seeing

Molecular Machines

The laboratories of David Eisenberg and Todd Yeates are playing a key role in our understanding of complex structures at the molecular level.



The structure of a peptide isolated from yeast, determined at atomic resolution in David Eisenberg's UCLA laboratory. Light is focused on the "molecular zipper."

Reprinted from UCLA College Report, the publication of the UCLA College of Letters and Science.

By Stuart Wolpert

When Tony Chan, dean of physical sciences, talks about chemists David Eisenberg and Todd Yeates, he describes them as "molecular ophthalmologists"—scientists who enable us to see significant molecular machines for the first time.

"You cannot understand the workings of a machine until you know what the parts are and how they fit together," Chan said. "When you can finally see that, then you have a hope of repairing or redesigning a machine that does not work properly. David Eisenberg and Todd Yeates are shining a light on how complex biological machines work by discovering how proteins fit together and revealing their three-dimensional structures."

For Eisenberg, director of the UCLA-Department of Energy Institute of Genomics and Proteomics and a Howard Hughes Medical Institute investigator, "Seeing new structures and finding the unexpected—there's no thrill like it. We are witnessing a revolution in molecular biology and molecular medicine. The day-to-day research is wondrous."

Two aspects of research by Eisenberg and Yeates fit into this revolution: first, they are determining the three-dimensional structures of large, complex proteins using X-ray crystallography—the most powerful tool for discovering the precise arrangement of atoms in a protein. They have determined the structures of more than 100 proteins.

Second, they are learning the rules and patterns for how proteins fold and fit together. The folding patterns that proteins assume are critical to explaining many life processes; for instance, as we age, more of our proteins fold abnormally. Eisenberg and Yeates are learning the underlying principles that govern how molecules assemble into organized structures.

David Eisenberg: Investigating Fundamental Three-Dimensional Structures

Eisenberg and his international team of chemists and molecular biologists discovered a fundamental molecular mechanism that seems to play an important role in Alzheimer's disease, Parkinson's disease, mad cow disease and two dozen other degenerative and fatal diseases. The discovery was featured in the journal *Nature* in June 2005.

The Eisenberg team discovered the three-dimensional structure—the precise positions of all the atoms—of a miniscule, yet powerful region of a protein that forms dangerous deposits in the brain. The protein is called an amyloid fibril, a rope-like structure

(Left to right) Graduate student Rebecca Nelson, professor David Eisenberg and postdoctoral scholar Melinda Balbirnie.

"Seeing new structures and finding the unexpected—there's no thrill like it. We are witnessing a revolution in molecular biology and molecular medicine."

created by linked protein molecules that is the common feature of many lethal diseases—and may well hold important clues to treating or preventing them. Determining the molecular structure of a fibril is a feat that eluded researchers for decades.

This particular region of fibril-forming proteins forms sheets that zip together like a surprising "molecular zipper." Eisenberg described this region as "pathologically dry."

"Proteins live in water, but here all the water is squeezed out as the fibril is sealed and zipped up," said Eisenberg. "Our hypothesis is that this dry steric zipper forms in all of these diseases, and is universal in the fibrils. Once this steric zipper has formed, it is very difficult to reverse because it's so tight. We have seen the teeth of the zipper in two related peptides."

Knowing the structure, said Melinda Balbirnie, a UCLA postdoctoral scholar who works in Eisenberg's lab, "may provide a basis for developing drugs to fight these diseases."

Balbirnie made the discovery that a small fragment of a protein—a mere one percent of the protein

—can behave similarly to the entire protein, and is able to form fibrils.

"Like a detective, Melinda traced this fibril-forming property down to a little peptide," Eisenberg said.

Can scientists prevent the steric zipper from forming in the first place, or pry it open once it has formed?

Balbirnie is able to produce fibrils from the small piece of the protein. She is conducting experiments with a wide variety of chemical compounds to see whether any will break up the amyloid fibrils.

"Our *Nature* paper presents the first atomic-level look at any of these structures," said Rebecca Nelson, a UCLA graduate student in biochemistry and molecular biology.

"We wanted to learn which atomic-level interactions were giving the peptide the property to form the type of fibrils which the body cannot break down," Nelson said. "We thought if we could better understand the structure of the molecules inside the fibrils, we would learn more about why they have the properties they do, how they form, why they might be involved in disease and conceivably how to get rid of them or even prevent their formation."

The researchers discovered that a common feature in these amyloid diseases is that the fibrils can all be characterized by a "cross-beta diffraction pattern" that provides a unique visual signature, said Michael Sawaya, a research scientist with UCLA and the Howard Hughes Medical Institute.

"The fibrils diffract in a way that tells us there are many extended protein chains stacked like a spine or the rungs of a ladder," Sawaya said.

Eisenberg's laboratory has already solved the next piece of the puzzle involving amyloid fibrils. In a November issue of *Nature*, his UCLA team, which includes graduate student Shilpa Sambashivan and Sawaya, revealed further insights into how amyloids form, and new clues about how to disrupt them. Sambashivan's study also shows that proteins in the amyloid state display common properties.

Todd Yeates: Exploring "Molecular Microcompartments"

Between the publication of Eisenberg's two studies in *Nature*, Yeates and his team of UCLA biochemists published a major study as well. While Eisenberg's group has been studying proteins that assemble into linear filaments, Yeates' group looks at how some other proteins assemble to form giant, elaborate shells. They discovered the first structural details of a family of mysterious objects called microcompartments that seem to be present in a variety of bacteria—research published in the journal *Science* in August.

"This is the first look at how microcompartments are built, and what the pieces look like," said Yeates, UCLA professor of chemistry and biochemistry, and a member of the UCLA-DOE Institute of Genomics and Proteomics. "These microcompartments appear to be highly evolved machines. From these first structures, we can see the particular amino acids and atoms."

A key feature that distinguishes the cells of primitive organisms such as bacteria, known as prokaryotes, from the cells in higher organisms like humans is that complex cells—eukaryotic cells—have a much higher level of organization within the cell itself. Eukaryotic cells contain membrane-bound organelles—structures within the cell that perform specific functions. Among these are mitochondria, the tiny power generators in cells. In prokaryotes, cells have been viewed as very primitive, although some contain unusual enclosures known as microcompartments, which appear to serve as primitive organelles inside bacterial cells, carrying out special reactions in their interior.

"Students who take a biology class learn in the first three days that cells of prokaryotes are uniform and without organization, while cells of eukaryotes have a complex organization," Yeates said. "That contrast is becoming less stark; we are learning there is more of a continuum than a sharp divide. These microcompartments, which resemble viruses because they are built from thousands of protein subunits assembled into a shell-like architecture, are an important component of bacteria."

Yeates' *Science* paper reveals the first structures of the proteins that make up a particular shell called the carboxysome, and the first high-resolution insights into how the carboxysome functions.

"Bacterial microcompartments have remained shrouded in mystery, largely because of an absence of a detailed understanding of their architecture and what the structures look like," said Yeates, who is also a member of the California NanoSystems Institute

> "No one has known the details of these structures before, which we can now see. We are learning how these biological machines work."

and UCLA's Molecular Biology Institute.

The structure of the carboxysome shows a repeating pattern of six protein molecules packed closely together. The UCLA biochemists determined the structures from their analysis of small crystals, using X-ray crystallography.

The UCLA biochemists also report 199 related proteins that presumably do similar things in 50 other bacteria, said Yeates, who combines advanced mathematics, chemistry and molecular biology in his research.

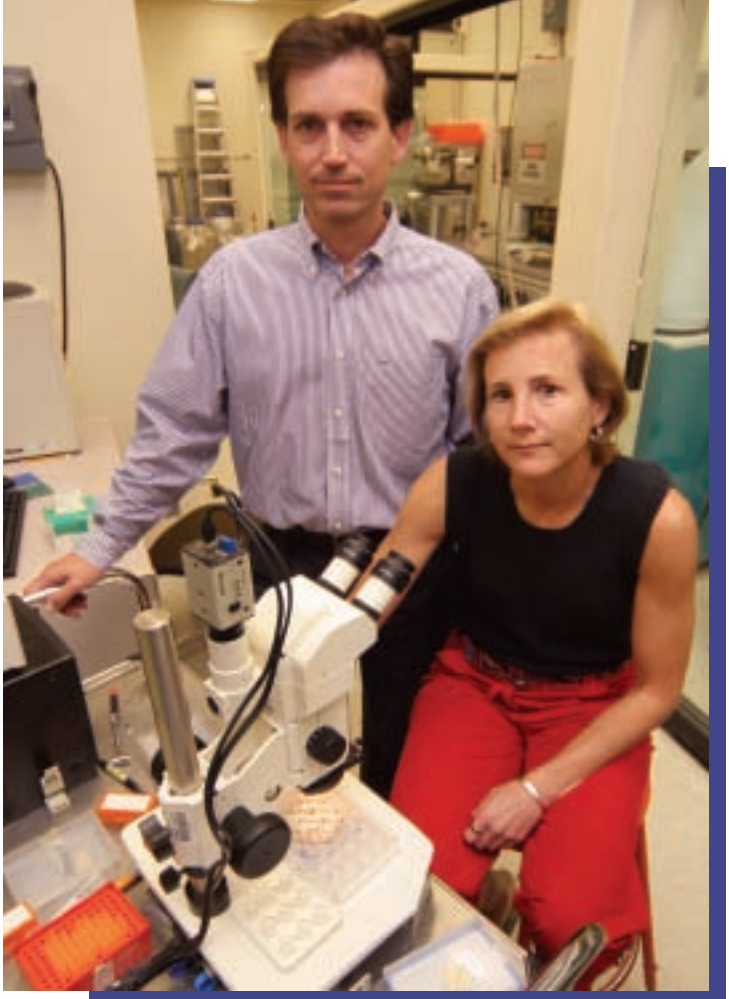
Yeates' research team includes lead author Cheryl Kerfeld, director of UCLA's Undergraduate Genomics Research Initiative, Sawaya, graduate student Shiho Tanaka, and UCLA chemistry and biochemistry graduate student Morgan Beeby.

The research could lead to applications in reducing greenhouse gases, Kerfeld said.

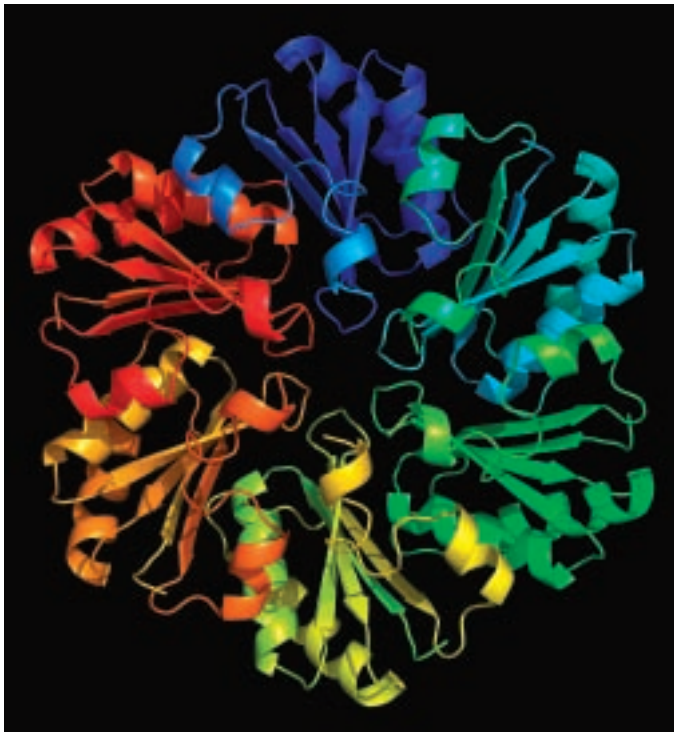
"The carboxysome is a specialized compartment found in bacteria that 'fix' carbon dioxide," she said. "These organisms can take carbon dioxide and transform it into a form that can be used as an energy source by other organisms.

"A large number of the bacteria in the ocean contains carboxysomes; a major portion of the carbon fixation on Earth is carried out by these naturally-occurring microscopic bioreactors," Kerfeld added. "It's becoming increasingly important to understand how this fundamental process takes place.

"For example, these organisms are known to adapt to a wide range of carbon dioxide concentrations," Kerfeld said. "Studies based on our work could help to reveal how this is accomplished at the molecular level. The carboxysome is truly an elegant design of nature."



Todd Yeates and Cheryl Kerfeld, who discovered the first structural details of mysterious objects called microcompartments (see center illustration) that are present in many bacteria.



Yeates' laboratory will continue to study the structures of microcompartments from other organisms. He also studies the complex relationships among proteins in cells. In addition, he has developed a new strategy for designing novel proteins that self-assemble into a variety of structures or material, including cages, filaments, layers and crystals.

Eisenberg and Yeates are strong advocates of basic research.

"The whole history of science," Eisenberg said, "shows that the solutions to practical problems come from the most unexpected places. We hope our research will show the avenues leading to cures for amyloid diseases, but only time will tell."

www.chem.ucla.edu

Stuart Wolpert is a senior media relations representative for the UCLA College of Letters and Science.

Demystifying and Humanizing an American Experience

By Meg Sullivan

Chicano studies scholar Abel Valenzuela turned an interest in immigration issues into nationally-renowned explorations of day labor in America—scholarship that is paving the way for increasing public awareness of the issue and expanding research in the field.

Growing up in East L.A., Abel Valenzuela learned to read the signs: even more mail than usual from Mexico, a flurry of long distance telephone calls, hushed conversations between his immigrant parents.

He was going to have to move over or move out.

"My parents would say, 'Look, your uncle or cousin is going to be staying with us for a few months," recalls Valenzuela, now an associate professor of Chicano studies and urban planning at UCLA.

In all, Valenzuela calculates at least 12 different newly-immigrated relatives used his bedroom as their launching pad to the American dream. Still, he insists that he didn't mind. "It was a burden to the family, but I was too small to notice," he recalls with a chuckle.

Indeed, Valenzuela remembers being much more curious about the newcomers than put out by those who shared his bedroom or temporarily moved him into the living room.

"They would talk about their trials and tribulations—what they were doing at work and how difficult it was to make it in this country," recalls the scholar who also directs UCLA's Center for the Study of Urban Poverty. "That process was really interesting—of people coming to a new country and trying to figure things out."

Valenzuela believes the experience inspired him to take an interest in immigration and labor. That interest in turn led him to day laborers, or the workers—typically male Latino immigrants—who daily solicit temporary blue collar work from street corners near home improvement stores or busy intersections.

Today, the social scientist is considered the world's premiere authority on the subject, having conducted the first academic study on day labor in the late 1990s and consistently blazing new trails ever since. In 1999, he grabbed attention with the first findings ever on day labor in Los Angeles. Three years later, he led a team of researchers that released the first comprehensive survey of day labor in the metropolitan New York area.

A similar Valenzuela-led survey of the situation in Washington D.C. appeared earlier this year. He has also studied the phenomenon in Japan and recently returned from South Africa where he and several colleagues are planning to co-author a research paper on the subject.

Now Valenzuela is leading a team that is poised to release the first nationwide study of day labor. Valenzuela and partners at the University of Illinois at Chicago, and the New School University directed a fleet of interviewers as they fanned out last year across 250 different hiring sites in 143 cities and 22 different states.

A lot of hope is riding on the findings, which are scheduled to be released later this year thanks to funding from the Rockefeller Foundation, the Ford Foundation and The Community Foundation for the National Capital Region.

"We've been saying day laborers are not criminals or child molesters or a

Reprinted from UCLA College Report, the publication of the UCLA College of Letters and Science.

Photo: Edward Carreon, www.carreonphotography.com

Abel Valenzuela. "We've been saying day laborers are not criminals or child molesters or a nuisance to the neighborhoods where they work," said day labor activist Pablo Alvarado. "Abel comes in and makes the point through numbers."

nuisance to the neighborhoods where they work," said Pablo Alvarado, a day labor activist recently named by *Time* magazine as one of the top 25 Hispanics in the U.S. "Abel comes in and makes the point through numbers."

Impressive recognition for a scholar who admits that he didn't originally plan to attend college.

When he started to get bored with the bank teller position that he landed out of high school, Valenzuela decided to change his view. Once at UC Berkeley, long an epicenter for ethnic politics, Valenzuela found himself.

"I remember my mother taking me to different protests, but she couldn't explain all the connections," he recalls. "In college, I learned all the background. Suddenly, everything had more meaning."

Valenzuela had completed a Ph.D. at MIT, a leader in labor studies, by the time he signed on at UCLA as a visiting lecturer in the 1990s. Knee-deep in research of mounting relevance for the nation's Latino population, he was one of the original five faculty members selected for the UCLA César Chávez Center for Interdisciplinary Instruction in Chicana and Chicano Studies.

In 2001, Valenzuela was named as director of UCLA's Center for the Study of Urban Poverty, a unit that looks at all manner of challenges facing the poor and low-skilled in this country. Valenzuela then served as interim chair of the César Chávez Center during the 2003–2004 academic year and was instrumental in creating a full-fledged Chicana and Chicano studies department at UCLA, which was officially approved in January 2005.

"I was so proud to help establish a department that I thought had these really important historical values for the future," Valenzuela said.

Valenzuela's strong suit had always been statistical modeling. In looking for a way to create statistically valid research of day labor, he realized the problem facing him had already been solved by other social scientists: those studying the homeless.

"The idea is to figure out as many places where these folks gather," he said. "It's not perfect, but then you can go to a sample of these sites or most of them and survey men and women. And that allows you to make a comment about their representation for that region. The same approach works for day laborers."

"All good researchers know that official statistics often miss groups living on the margins of American life, but few are willing to put the hard work and effort into primary data collection—especially on the scale Abel has."

Valenzuela's surveying methods are unique, too. Although students often participate, day laborers themselves take the lead in administering surveys on the theory they are more likely to get fellow immigrants to open up.

"All good researchers know that official statistics often miss groups living on the margins of American life, but few are willing to put the hard work and effort into primary data collection—especially on the scale Abel has," said Katherine McFate, a program officer at the Rockefeller Foundation. "Abel has been a pioneer in developing methods for gathering information on this hard-to-track population."

The national study of day labor is expected to pave the way for future research as well as more appropriate public interventions—and will probably surprise groups that have turned the day laborers into lightning rods for anti-immigration sentiment.

"If we want to understand the experience of migrant workers—or the informalization of other sectors of certain industries like construction—we need to better understand how this segment of the low-wage labor market operates," McFate said.

While a rise in immigration is often cited as the catalyst behind day labor's rising presence in the U.S., Valenzuela believes the primary driving force is industry's concern with the bottom-line.

"Industries are operating under survival mode," he said. "They increasingly feel that they need to turn to a more pliable work force in order to maintain profit margins. They don't have to worry about benefits or severance packages. When you have these vague relationships, it's a lot cheaper—and more flexible—for the employer."

But the national obsession with home improvement also plays a role, Valenzuela believes.

"You see Bob Villa talking about landscaping or installing your own tile and you think, 'I can do that! It doesn't look that hard,'" he said, referring to the spokesman for PBS's "This Old House." "But if you ever start any of these home improvement projects, you realize how easy it is to get in over your head. So what do you do? You go hire a day laborer."

Yet, such benefits for homeowners and employers often come at a steep price. In the Washington D.C. study, Valenzuela's team found that half of all day laborers experience some kind of exploitation or abuse, ranging from non-payment of wages or getting paid less than the negotiated wage, not getting breaks, not getting water, or being abandoned at the site at the end of the day.

The answer, Valenzuela believes, is two-fold. He is an advocate of increasingly popular hiring sites. Typically city-sponsored, they gather day laborers into a single spot with restroom facilities and a waiting area.

"In addition to addressing community complaints over loitering and a lack of bathroom facilities for the men, these sites can serve as creative spaces that can be used for ESL classes, computer training and medical services."

The other front, he believes, is education—not for day laborers, but for the communities that they serve.

In Washington D.C., for instance, Valenzuela found that more than half of those surveyed work within 15 minutes of their homes and live in neighborhoods close to the day labor sites where they seek work. And many are family-oriented fathers with children who are U.S. citizens. While many are new immigrants, a surprising amount have been in the country for ten years or more. A not insignificant portion view working day labor as a way to gain training in the building trades—a sort of paid internship. In short, the workers emerged as contributing members of the communities where they work, a picture that gives this statistical artist considerable satisfaction.

"I feel really good when I'm able to demystify some of these workers and basically humanize them," Valenzuela said.

Findings from Valenzuela's nationwide day labor study will be posted on:

http://www.sscnet.ucla.edu/issr/csup/index.php

Meg Sullivan is a senior media relations representative for the College of Letters and Science.

Valenzuela is an advocate of hiring sites—increasingly popular facilities that are often city-sponsored, where day laborers gather for work assignments, as well as language classes, computer training and medical services.

The Complex Nature of Teenage Depression

Psychological depression during teen years is usually short-lived, but can be an enduring problem.

Does depression during teen years lead to a lifetime of symptoms?

Teenage depression is indeed a widespread problem, and can become an illness that continues into adulthood. However, in a majority of cases, depression is a transitory condition, said UCLA psychology professor Constance Hammen.

"Adolescent depression can affect 20 percent or more of young people," said Hammen, who has studied depression for more than 30 years and is funded by the National Institute of Mental Health. "While these numbers are alarming, and depression can be impairing, most of the depressions will be short-lived and these kids will not go on to have further depression.

"Many things can make teenagers depressed, but in about 60 percent of cases, the depression does not foretell future depression. However, of those who have adolescent depression, perhaps 40 percent will have recurring depression, and many of those will likely be life-long conditions."

Constance Hammen: "A lot of people think depression stems from a weakness in character, and that you should just keep a stiff upper lip. It's a myth. People cannot simply will depression away."

Hammen, along with Patricia Brennan from Emory University in Atlanta, has been conducting a long-term study over the last 10 years of 800 families with children now in their 20s. The subjects are among 7,000 families in Australia who have been studied by researchers from the University of Queensland since the children were five years old.

About half of the children in the current study who showed depression by age 15 had recurring depression by age 20, and those who did have a distinctive profile, Hammen and Brennan found. Their preliminary analysis indicates the adolescents who showed depression by age 15, and again between 15 and 20, also had anxiety disorders and poor social relationships such as fewer friends or more conflict in their relationships.

"We have found that the risk for recurring depression occurs in the kids who had early depression and social difficulties," Hammen said. "Kids depressed by 15 who function normally in social relationships did not go on to have depression by 20. Poor social functioning by age 15, such as not having stable friendships, looks like a risk factor for recurring depression.'"

Parents commonly do not see depression in their children.

"Parents often don't pick up on inner despair or distress, and notice depression mainly as irritability or loss of enjoyment of activities their kids used to enjoy," Hammen said. "If it goes on for a month, I think the parent should pay more attention and not just dismiss the behavior as part of adolescence."

Major episodes of depression last for at least two weeks, with impairment in performing daily activities, and a combination of symptoms such as a depressed mood, loss of enjoyment in previously pleasurable activities, changes in appetite, changes in sleep patterns, loss of motivation and energy, difficulty concentrating, and negative thoughts about themselves and the future, including suicidal thoughts.

In addition to studying the realities of depression, Hammen has debunked myths about depression, including this one:

"A lot of people think depression stems from a weakness in character, and that you should just keep a stiff upper lip," Hammen said. "It's a myth. People cannot simply will depression away. It can be a serious impairment, and may require treatment. It's not a weakness of will." CR

www.psych.ucla.edu/Faculty/Hammen

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A Quest for Knowledge and Self-Discovery

Graduate student Awet Weldemichael survived war, famine and political upheaval in his adopted homelands. Now his Ph.D. studies are building new understanding of the turmoil that has shaped his world.

By Aaron Dalton

Awet Weldemichael was born in the middle of a 30-year war of independence. His homeland of Eritrea had been struggling since 1961 for freedom from Ethiopian rule.

Just 10 months after his birth, his family was forced to evacuate its hometown of Tessenei and flee to the neighboring Sudan. It was there that Weldemichael spent his childhood. Though he lived during the 1980s in a refugee camp of sorts, Weldemichael did not consider it such a bad place. There was land where the Eritreans could farm, they could start businesses, there was even relatively clean water.

"For people like me who knew nothing else, it was home," said Weldemichael.

But Sudan was both home and not home at the same time. Weldemichael and his family were Christians living in a Muslim country that was working to implement Islamic law (Shari'a). There were instances where he heard himself and his community referred to derogatively as outsiders, refugees.

"These were all reminders that our home in Sudan was not really Home—that Home was someplace to which we had not yet gone," recalled Weldemichael.

Surviving was not always easy. Weldemichael endured the famine that spread throughout Northeast Africa in the 1980s, as well as a tidal wave of diseases that washed over rural Sudan a few years later.

"There is nothing I can take credit for in this," said Weldemichael. "It was just miraculous."

A series of miracles may have saved him from war, famine and disease, but Weldemichael took fate into his own hands when the war ended in 1991. Weldemichael and his older sister led the family's return to the home country he knew only from stories.

After graduating from his Eritrean high school, Weldemichael enrolled at the University of Asmara. He was studying law, which is taught in Eritrea as an undergraduate degree, but felt under qualified for being either a judge or a lawyer.

"I felt like I needed to know more about myself and my environment before I could defend someone or judge another," explained Weldemichael.

This quest for knowledge has guided his steps ever since, first to the University of Addis Ababa in the Ethiopian capital where Weldemichael hoped to embark on a journey of self-discovery. Given his early life experiences, it would have been tempting to blame the Ethiopians for the troubles he had endured, but Weldemichael felt such blame would be ultimately self-destructive.

"I had to find peace within myself," he said. "Instead of pointing a finger at someone else, I wanted to know Ethiopia and the Ethiopians up close rather than just considering them as my enemies."

Weldemichael enrolled as a history major in Addis Ababa. His quest to understand the actions of Ethiopians in Eritrea led to studies of the Eritrean independence war. In 1998, less than a week before graduation exams, a border war broke out between Ethiopia and Eritrea. Weldemichael and the other Eritrean students studying in Ethiopia were dismissed from their schools and deported to their home country.

Back at the University of Asmara, the chairman of the history department was a UCLA alumnus who allowed Weldemichael to take the necessary exams for his degree and then nominated him for a U.S. Agency for International Development fellowship to complete a masters degree in African Studies at UCLA. Though Weldemichael admits he was initially skeptical at the notion of flying thousands of miles away from Africa in order to study Africa, he said he has been won over by the scholarship, mentoring, guidance and overall research environment he has found at UCLA.

The admiration has been mutual. Weldemichael so impressed his history professors that he was recruited into the department's Ph.D. program and was awarded the Herma and Celia Wise Fellowship. The department pays Weldemichael's non-resident tuition, while another grant from the University of California

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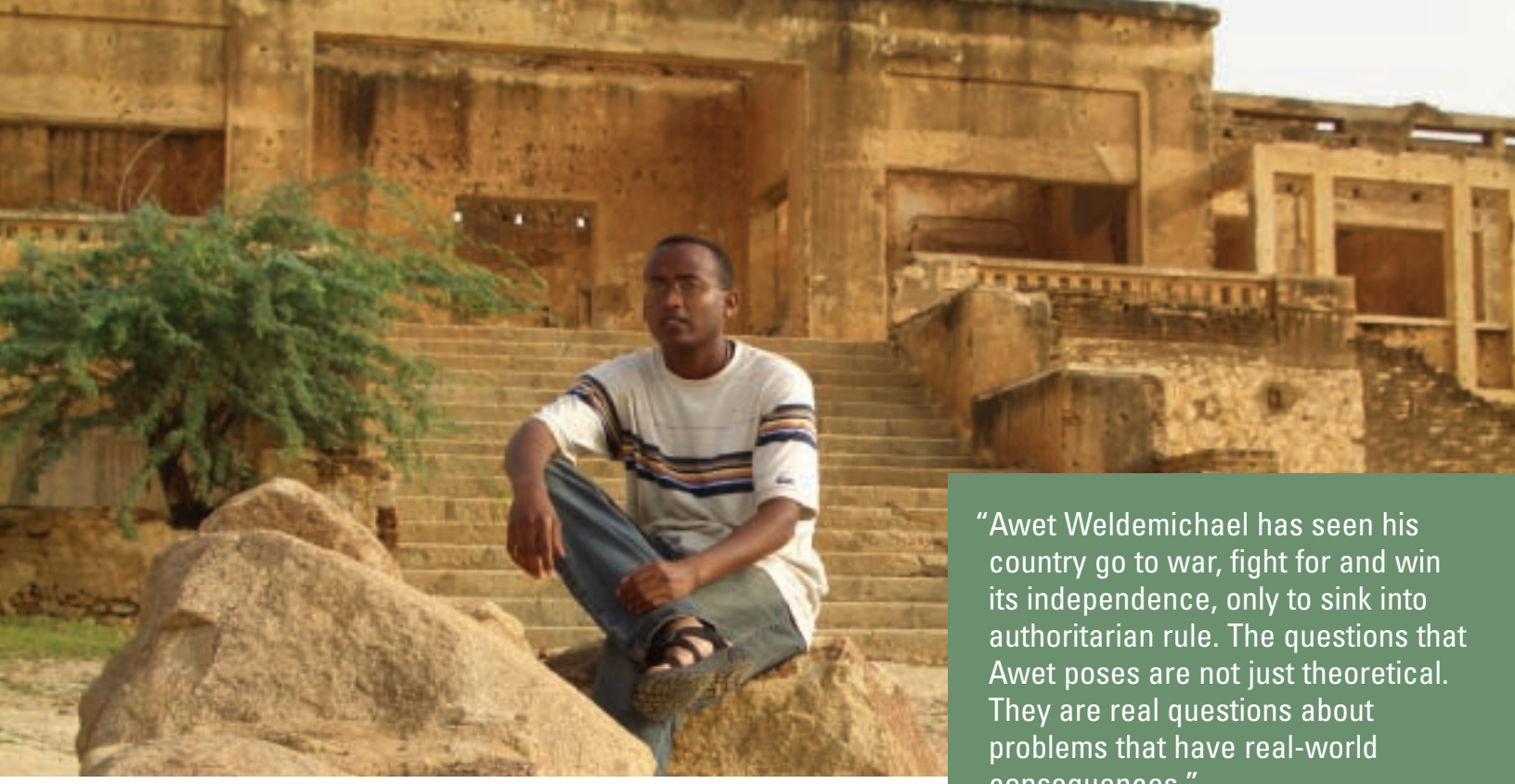

Graduate student Awet Weldemichael, in the rubble of the hospital in which he was born—a facility twice destroyed in the last 30 years: "I felt like I needed to know more about myself and my environment before I could defend someone or judge another."

"Awet Weldemichael has seen his country go to war, fight for and win its independence, only to sink into authoritarian rule. The questions that Awet poses are not just theoretical. They are real questions about problems that have real-world consequences."

Pacific Rim Research Program helps to support his work comparing the strategies of the independence movements in Eritrea and the former Indonesian territory of East Timor.

Weldemichael's Ph.D. advisors speak in glowing terms of their protégé.

"The remarkable thing about Awet is that he has the intellectual curiosity and also intellectual courage beyond that of many full-fledged academics," said Geoffrey Robinson, a professor of history who specializes in Southeast Asian history and serves as one of the co-chairs on Weldemichael's Ph.D. committee.

In order to properly conduct their research, historians must have a good grasp of the languages in the societies they wish to study. For that reason alone, many historians, even those interested in comparative history, tend to stick to one region. To formulate his research, Weldemichael built a background in Southeast Asian history from the ground up and studied Indonesian and Portuguese, two relevant languages for East Timor.

"I cannot think of anyone else who has put Northeast Africa and Southeast Asia together in quite this way," said Ned Alpers, chair of the history department, expert in East African history and the other co-chair of Weldemichael's Ph.D. committee.

Why would anyone take on such a daunting Ph.D. project? Robinson believes that Awet is looking for answers, trying to figure out why two small countries—first colonized by Europeans, then recolonized by neighboring regional powers, then ravaged by long wars of independence—turned out so differently. Eritrea has developed into an autocratic single-party state, while East Timor has so far managed to implement a multiparty democracy.

"This is not simply an academic exercise for him," says Robinson. "Awet has lived this history in his lifetime. He has seen his country go to war, fight for and win its independence, only to sink into authoritarian rule. The questions that Awet poses are not just theoretical. They are real questions about problems that have real world consequences."

Weldemichael thinks he would like to teach, advise government leaders on policy and continue his research into the repercussions of armed conflict.

Every once in a while, when he looks up from his computer amid his peaceful community of scholars, Weldemichael marvels at the turns his life has taken.

"This kid starting out as a nobody survived war, famine and all sorts of hardships to get one of the best scholarship packages at one of the most prestigious public schools in one of the strongest, wealthiest countries in the world," said Weldemichael. "It's like a Cinderella story, so to speak."

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A Wake-up Call for Transit System Security

By Robin Heffler

How can mass transit systems worldwide better protect their operations from terrorist attacks? That problem—all too vivid after attacks on the London transit system in July 2005 and Madrid in March 2004—is the central question behind a recently completed two-year research project on transit security that was funded in part by the Global Impact Research Initiative of the Ronald W. Burkle Center for International Relations.

The comprehensive study, begun in 2003 and completed in June 2005, examined transit systems in Paris, London, Tokyo, Madrid and New York. It involved interviews with nearly 40 transportation officials, statements from representatives of federal and international transportation agencies, a thorough review of all previously published research, and a survey of 113 of the largest transit operators in the United States.

The study's results reveal a variety of preparation levels, and a combination of skepticism and some optimism about the daunting and complex task of trying to make public transportation safer.

For Ronald Rogowski, interim vice provost and dean of the UCLA International Institute that houses the Burkle Center, the study goes to the heart of the mission of the Global Impact Research Initiative, which is to facilitate faculty-led innovation in international scholarship.

"This research is an outstanding example of an interdisciplinary group, working on a topic of global importance, and coming to results of immedi-

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A study with funding from the Global Impact Research Initiative in the Ronald W. Burkle Center for International Relations explores the complex security and terrorism issues that affect public transportation worldwide.

ate relevance that force both scholars and policymakers to rethink their assumptions," Rogowski said.

"Both the research group and the Institute's advisory panels showed extraordinary prescience," Rogowski noted, "because the project was proposed, funded and begun *before* the mass transit attacks that visited death and destruction on Madrid and London."

Professor Anastasia Loukaitou-Sideris, chair of the UCLA Department of Urban Planning in the School of Public Affairs, explained how she and colleague Brian Taylor came to be co-principal investigators of the study.

"After 9/11, but before the Madrid bombings," she said, "Brian and I were discussing that a lot was happening to protect the airlines, but one of the most vulnerable aspects of transit is railway stations because they're quite open, anyone can come in, and hundreds of thousands of people are moving in and out of them. In cities that had experience with terrorist attacks, we wanted to know what kind of strategies they had in place and what kind of lessons could be learned."

They sought and received funding for the international aspects of the study from the Burkle Center, while San Jose State University's (SJSU) Mineta Transportation Institute supported the domestic portion. In addition to UCLA faculty and graduate students, researchers at SJSU and UC Berkeley also helped to gather information.

The Mineta Institute will publish the results this fall and distribute them to the agencies and operators that participated in the study. There are 10 major findings of the research (for details, visit the Web site below). From these, Loukaitou-Sideris said three points stand out for her:

- The need for coordination among different agencies that operate at different levels. It happens more often in Europe than in the United States;
- How difficult it is to make public transportation secure because of the logistics of efficiently moving so many people through the transit systems;
- There is no one approach, but rather four categories of strategies—policing, technology, structure design and educating passengers—to address security issues.

A primary stumbling block, she noted, is that "It's inherently difficult to establish security points and screen people because of the time involved. The use of public transit is declining in the United States, and transit authorities are always trying to push ridership. If they start implementing a lot of delays for security reasons, they fear losing more ridership."

Among the most active researchers was Camille Fink, a UCLA doctoral student who reviewed the previous literature, wrote the survey of American transit operators, and interviewed transportation officials in London, Brussels and Washington D.C.

"I was interested in the built environment, and how other countries had dealt with design issues of transit security, like sight lines and eliminating places where packages could be left," Fink said. "It seemed that in the United States there was less emphasis on that and more on policing and technology. I think American operators realize that station design is an important long-term investment and that it's fairly expensive to retrofit."

Another insight of the project involved the process of collecting information.

"At the beginning, we didn't appreciate the confidentiality issue enough," said Loukaitou-Sideris. "Especially in the United States, officials were very worried about whether they would compromise security by talking to us. There was more openness in Europe."

She said she would like to use the study as a springboard for additional research that could create security guidelines for transit operators.

"This research group has contributed significantly to global security in this dangerous period, and has set an example of how sober and painstaking analysis can help us all to meet the threat of terrorism," Rogowski said. "We are very pleased that the Burkle Center, which, among other things, fosters research on the role of the United States in global security, could support this vital effort."

www.international.ucla.edu/bcir

UCLA and the Mellon Foundation

Transforming the World View of Minority Cultures

A program funded by the Mellon Foundation is creating an enlightened new perspective on the influence of minority cultures around the world.

By Dan Gordon

With the growing intensity of global migration, does it make sense in the 21st century to study cultures within the confines of national boundaries?

Must the impact and role of minority cultures be analyzed only as part of national models, and always compared to the country's dominant culture?

The emerging field of Transnational Studies, as represented by a multi-campus research group based in the UCLA College of Letters and Science and a newly funded postdoctoral fellowship program, answers no to both questions.

The "Cultures in Transnational Perspective Mellon Postdoctoral Fellowship Program" in the College's Division of Humanities will bring a dozen postdoctoral fellows to UCLA over the next four years, beginning next fall. The program, funded by the Andrew W. Mellon Foundation, aims to increase the understanding of minority cultures, shifting from a national focus to a much broader level.

The postdoctoral scholars will stay for two years, each exploring minority cultures within specific countries, but working to shift the view of those cultures into major components of world culture and history. During their two-year appointments, Mellon Fellows will study history and culture generated by immigrant and minority writers, artists, filmmakers, playwrights and musicians in metropolitan centers across the world—thereby reshaping the canons of literature, art and music in their respective countries.

The program is co-directed by Françoise Lionnet, director of the Global Fellows Program, professor and former chair of the Department of French and Francophone Studies and a professor of comparative literature; and Shu-mei Shih, associate professor of Asian languages and cultures, comparative literature, and Asian American studies.

Breaking Down the Boundaries throughout Cultural Studies

The program expands on the work of the Transnational and Transcolonial Studies Multicampus Research Group established in 2000, also under the leadership of Lionnet and Shih. That group, an interdisciplinary

Mellon Fellows will study history and culture generated by immigrant and minority writers, artists, filmmakers, playwrights and musicians in metropolitan centers across the world—thereby reshaping the canons of literature, art, and music.

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community of scholars in the humanities and social sciences from throughout the UC system, fosters collaborations on the study of minority cultures across national boundaries, with attention to colonial and post-colonial processes.

"Our goal has been to break down the boundaries between ethnic studies, area studies, and national, language, and literature departments in the humanities through a focus on minority cultures and their contributions to both the literary and social worlds," said Shih.

"In the United States," Shih said, "ethnic studies programs focusing on Asian Americans and African Americans, for example, tend not to look at these cultures in comparison with minorities in Europe, Africa or Asia."

In an era when migration has created a growing global dispersion of cultures as well as new hybrid cultural identities, the emerging transnational approach enables scholars to study these cultures from a perspective that reflects the modern world, suggested Shih, who grew up as a Taiwanese national living in South Korea, raised by parents from China.

"We hear a lot about the so-called majority cultures becoming more and more transnational because of all the mixing going on as a result of globalization and transnational corporations," Shih said. "But the same thing is happening with minority peoples—it just hasn't been studied."

Encouraging Comparative Study across National Boundaries

"The study of minority cultures has tended to follow a pattern that is not only national, but also vertical," said Lionnet, "focusing both on the minority's modes of resistance or accommodation to the dominant culture in the same country and on the creative contributions of these minorities in relation to a common national identity.

"But the transnationalization of minority cultures has been an integral part of world culture for centuries," said Lionnet, "and comparing patterns of cultural expressiveness among different minority cultures and across national boundaries can lead to new insights." It can show how minority cultures from different historical and contemporary colonial contexts share certain traits. "One such productive mode of comparison has been between Francophone Caribbean or Indian Ocean literatures and African-American literary culture," added Lionnet, who is a native of Mauritius and whose comparative work is known for its focus on these areas of the globe.

The Mellon program extends the work of the Multicampus Research Group, bringing in postdoctoral scholars from all over the country, drawing from diverse fields and disciplines. Lionnet and Shih expect that, through studies by these scholars and intellectual dialogue facilitated by monthly seminars, the theory of transnationalism will be tested through a series of comparative questions. Among them:

- Are there significant variations in the degrees of openness or resistance to foreign or minority influences within regionally-distinct parts of the world? Is Africa more open, say, to the influence of American music than is Japan? Or is America more open than Europe to Chinese influences in art and dance?
- Are musical or artistic forms more permeable to external influences than literary ones?
- What is lost in translation as cultures move from one venue to another?
- What, in a more profound sense, are the psychological losses experienced in the process of migration, exile and diasporic movement?

"The Mellon grant offers a unique opportunity for UCLA to welcome a new, talented cadre of scholars to explore a subject that has become increasingly central to the personal and academic lives of students and faculty at UCLA," said Jonathan Post, the UCLA College's interim dean of humanities.

Post believes that one reason UCLA should be in the vanguard of this emerging field is because of its geographic location and diverse population. Indeed, transnationalism reflects what is already a characteristic of the student body at UCLA, whose own cultural mix mirrors the composition of Los Angeles—perhaps the world's most ethnically-diverse city.

The postdoctoral fellows will enhance UCLA's existing strength in scholarship on minority cultures—scholarship that has already begun to realign across traditional boundaries, thanks to the Multicampus Research Group,

"Given that California is a state with such tremendous cultural diversity and richness, it makes sense for us to emphasize those aspects of our own disciplines that are aligned with the different cultures that exist here. This means trying to move beyond the earlier perspectives which tended to put each discipline in its own corner and considered national cultures as bounded areas," said Lionnet.

Lionnet offers the name of her own department as an example. In the spring of 2000, a year after arriving at UCLA to become department chair, Lionnet proposed changing the name of "The Department of French" to "The Department of French and Francophone Studies," in recognition of courses already

being offered in the literature of sub-Saharan Africa, North Africa, Southeast Asia, the Caribbean and Quebec. The change became effective the following fall.

"There are 50-some countries in the world where French is spoken, and Francophone literature can include the literary production of writers from West Africa, from the Caribbean islands of Martinique and Guadaloupe, or from Algeria and Morocco," Lionnet said. "We have to take into account the fact that the French language is transnational, and look at those cultures transnationally as well. By crossing disciplinary boundaries and national borders we can come up with new and interesting ways of thinking about citizenship, migration, identity and subjectivity." Similarly, Shih has recently coined the category of the "Sinophone" to include the study of communities that speak different Chinese languages outside China as a way of critically engaging with China-centrism.

The incoming postdoctoral Mellon Fellows will provide new stimulus for faculty as well as graduate students, who are increasingly encouraged to conduct research in such cutting-edge humanities fields, Lionnet noted. Though each will be based in a different department, the Mellon Fellows will conduct interdisciplinary work. Monthly seminars will provide a focal point for examining the ways in which minority cultures are treated across disciplinary boundaries such as literature, history, art history, musicology, theater, film and art.

Shu-mei Shih (left) and Françoise Lionnet, co-directors of the Cultures in Transnational Perspective Mellon Postdoctoral Program. "We're looking forward to having young scholars here who will expand our thinking," said Shih.

Solidifying a New Intellectual Agenda

In November 1998, while attending a conference being held in the Luxembourg Palace in Paris, Lionnet and Shih engaged in an informal discussion on the state of ethnic studies in the United States and Europe. Their conversation continued late into the evening, during which they discovered their mutual dissatisfaction with the disciplinary boundaries that ensured their paths would never cross in their home institutions.

In the introduction to the book *Minor Transnationalism* (Duke University Press, 2005), which Lionnet and Shih co-edited, they recall that conversation:

> One a Mauritian of French descent working in Francophone, African, and African American studies, and the other a Korean-born ethnic Chinese working in Chinese area studies and Asian American studies, we were both in some sense "minoritized" in the major disciplines of French and Chinese. We were both too "ethnic studies" for the mainstream of our fields, but we would not normally have shared our common concerns and our common predicament. Had we not met through an arbitrary gathering in a major metropolis, the seat of power, our minor orientations would have remained invisible to each other. We realized, in retrospect, that our battles are always framed vertically, and we forget to look sideways to lateral networks that are not readily apparent.

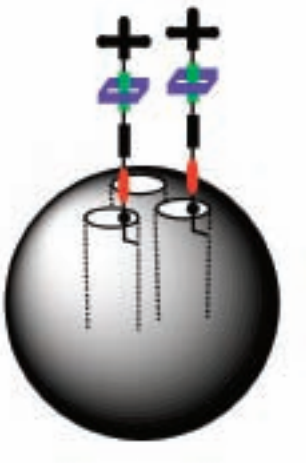
The conversation was empowering to both scholars. Each of them realized that they weren't alone in their struggle to work at the intersection of ethnic and area studies. The meeting blossomed into an intellectual agenda, leading to the Multicampus Research Group, the book and the new Mellon Postdoctoral Fellows program.

"We're looking forward to having young scholars here who will expand our thinking on these issues," said Shih. "And what's great is that the program gives national legitimacy to this type of interdisciplinary, inter-area transnational work, so that these younger scholars won't face the same resistance that Françoise and I experienced." CR

www.humnet.ucla.edu/transnation

Molecular Plumbing

The first valve at the nano scale that can trap and release molecules can be controlled, say the researchers, "like a water faucet."

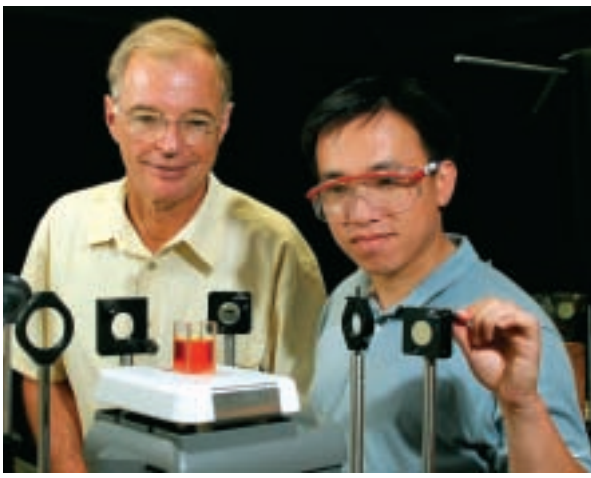


Chemists in the College have created the first nano valve that can be opened and closed at will.

"With the nano valve, we can trap and release molecules on demand," said Jeffrey I. Zink, a UCLA professor of chemistry and biochemistry, a member of the California NanoSystems Institute at UCLA, and a member of the research team. "We are able to control molecules at the nano scale. A nano valve potentially could be used as a drug delivery system."

The valve, said graduate student and lead author Thoi Nguyen, "is like a mechanical system that we can control like a water faucet."

This nano valve consists of moving parts—switchable rotaxane molecules that resemble linear motors designed by California NanoSystems Institute director Fraser Stoddart's team—attached to a tiny piece of glass (porous silica), which measures about 500 nanometers. (A nanometer is a billionth of a meter; the width of a human hair is about 80,000 nanometers.)



Jeffrey I. Zink (left), professor of chemistry and biochemistry, with graduate student Thoi Nguyen, the lead author of research that produced the first nano scale valve. Background: the nano valve in action, opening and closing.

"It's big enough to let molecules in and out, but small enough so that the switchable rotaxane molecules can block the hole," Zink said.

The research was federally funded by the National Science Foundation.

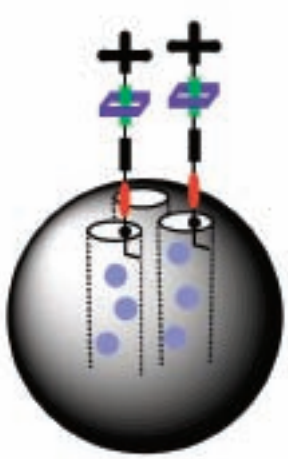
The valve is uniquely designed so one end attaches to the opening of the hole that will be blocked and unblocked, and the other end has the switchable rotaxanes whose movable component blocks the hole in the down position and leaves it open in the up position. The researchers used chemical energy involving a single electron as the power supply to open and shut the valve, and a luminescent molecule that allows them to determine, based on the emitted light, whether a molecule is trapped or has been released.

Stoddart, who holds UCLA's Fred Kavli Chair in nanosystems sciences, has already shown how these switchable rotaxanes can be used in molecular electronics. Stoddart's team is now adapting them for use in the construction of artificial molecular machinery.

The scientists plan to test how large a hole they can block, to see whether they can get larger molecules, like enzymes, inside the container; they are optimistic.

"Building artificial molecular machines and getting them to operate is where airplanes were a century ago," Stoddart said. "We have come a long way in the last decade, but we have a very, very long way to go yet to realize the full potential of artificial molecular machines."

The nano valve is much smaller than living cells, which suggests an intriguing question: Could a living cell ingest a nano valve that carries a drug inside? CR



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A GROWING OPPORTUNITY FOR Undergraduate Achievement

Each year, thousands of undergraduates in the UCLA College of Letters and Science participate in important, publishable research in close collaboration with faculty.

By Robin Heffler

Gazi Begum entered her senior year in Fall 2005 as an undergraduate student in psychology and she has already completed much of a senior thesis that has both personal and professional rewards.

The research by Begum, who immigrated to the United States from Bangladesh as a baby, explores the relationship between parental praise and children's relationships with friends.

"I noticed within my family and the larger Bengali community that there is less emphasis on praising children and other positive emotions than in American-born families," said Begum. "So from a personal standpoint, I became interested in what happens when parents do emphasize positive emotions.

"Academically, I wanted to do something related to parent-child interactions," Begum said. "I saw there was a lot of research on negative emotions, and decided to look at when things go right."

Begum was able to start the research in her junior year after receiving a Psychology Research Opportunities Program fellowship through the College of Letters and Science. Her preliminary findings show that when fathers react positively to events in their children's lives, their children are more likely to have high-quality relationships with their best friends.

"That makes me a more competitive applicant to graduate school in clinical psychology next fall," said Begum, who is working with her post-doctoral mentor, Jian Gonzaga, on refining her senior thesis. "I feel like I'm already doing everything I would be doing in graduate school because I developed a project from beginning to end, presented my work at conferences and ultimately hope to publish it."

One of 22 students chosen for the McNair Undergraduate Research Program in 2005-2006, Begum is among nearly 200 undergraduate students that are being funded to conduct advanced research and thousands more that are receiving other kinds of training and support for their research interests through the Undergraduate Research Centers.

UCLA has long encouraged undergraduates to actively participate in research; the centers, created by the College in 1997, serve as a focal point for research-related workshops, counseling, scholarships and presentation opportunities.

As a result, undergraduates at all levels can take advantage of being at a major research university and directly contribute to the creation of new knowledge.

"I thought we needed a central office that facilitated undergraduates getting into research across campus," said Judi Smith, vice provost for undergraduate education and the initiator of the centers. "We also wanted to provide scholarship opportunities for students who wanted to get into advanced, comprehensive research projects; many of our students just can't afford to engage in research because they have to earn money."

Two separate centers are devoted to the life and physical sciences and the humanities and social sciences. Smith said that 40 percent of all undergraduates in the College engage in some form of research, with the highest participation—

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75 percent—among graduating seniors in the life sciences.

"Research is truly an essential part of getting an undergraduate science education," said Audrey Cramer, director of the Undergraduate Research Center for the sciences, which also serves students in engineering. "The vast majority of science students go on to graduate or professional schools, and it's expected they will get some research experience here."

Reed Wilson, director of the Undergraduate Research Center for the humanities and social sciences, noted that in the disciplines he oversees, students have few opportunities to work on faculty-generated research, which is often a solitary effort, such as writing a book. Therefore, he explained, "We try to encourage faculty to mentor students who are involved in their own projects. Increasingly, graduate programs and professional schools such as law and public policy look for students who've done research."

Photo: Mark Berndt/www.markberndt.com

Undergraduate Lindsey Hoshaw (left) is conducting research on traditional gender roles and British culture in the C.S. Lewis fantasy The Lion, the Witch and the Wardrobe*, working with faculty mentor Jennifer Sharpe, professor of English.*

Senior Omid Hariri is a departmental scholar who is working simultaneously on a bachelor's degree in neuroscience and a master's degree in neurobiology. Through the Undergraduate Research Center, he received a scholarship from the Howard Hughes Undergraduate Research Program that funds student work with faculty on biomedical research topics.

Under the guidance of neurology professor Istvan Mody, Hariri is using the scholarship to study how a protein binds to and regulates the concentration of calcium in the body, which relates to medical conditions affecting the muscles, nervous system and brain.

Hariri's interactions with faculty on research have also influenced his long-term goals.

"When I entered UCLA I wanted to be a surgeon, but after seeing how medical practice starts from research and how inspiring it is to be a professor who helps students reach where they want to get to, I learned how much I enjoy being in an academic environment." Hariri now plans to pursue a joint medical degree and Ph.D. to continue conducting research and become a faculty mentor himself.

Similarly, Begum realized the professional direction she wants to take as a result of research opportunities. While attending an undergraduate conference made possible by a travel grant she received from the Undergraduate Research Center, she gained a different perspective about her research from a faculty member who is doing similar work.

"I was telling him about a trend and he asked about the exceptions," Begum said. "That got me interested in pursuing abnormal development in clinical psychology, studying social deficits when kids don't have social skills."

All undergraduates have several options for finding their place in the university's research community. Some get their first exposure through the Student Research Forum, an honors course that explores the role of research at UCLA and throughout the nation, or through seminars and tutorial courses. Many others enter through the lower division Student Research Program, which offers a Course 99 in all departments, and helps students to obtain research skills and define academic interests and objectives. A number of special summer research programs are also available.

These opportunities pave the way for upper division students to work on comprehensive research projects, such as those conducted by Begum and Hariri, through the Undergraduate Research Scholars Program. This work opens the door to students publishing their work in UCLA's nationally-recognized undergraduate scholarly and literary publications or serving as co-authors on faculty research papers.

Smith, who cultivates new sources of private funding for undergraduate research, would like to double opportunities available for scholarships and fellowships in five years, supporting up to 400 students.

"Faculty who work with undergraduates discover they bring in fresh ideas because they're not indoctrinated with old concepts," Smith said. "Because student participation in research is a key element to their undergraduate experience, we need to find a way to get them involved—recognizing not only their commitment, but potential achievements."

www.college.ucla.edu/ugresearch/index.html

Robin Heffler is a freelance writer based in Los Angeles.

Reprinted from UCLA College Report, the publication of the UCLA College of Letters and Science.

CREATING A STRONG FOUNDATION

A dynamic plan for hiring top faculty for the UCLA College of Letters and Science is building the next generation of campus scholars.

Olivia Bloechl

Musicology

"UCLA's musicology program is known as one of the more experimental and risk-taking, compared to the more traditional programs, so it's welcoming to the kind of work I do. That was very exciting to me when looking at universities and colleges."

By Harlan Lebo

For Dolores Bozovic, finding the ideal faculty position required seeking out a university with just the right setting for her unique approach to scientific exploration.

Bozovic—a physicist whose work bridges academic disciplines in physics and neuroscience—studies the basic processes of hearing. She focuses on how sound is processed by "hair cells," the specialized cells of the inner ear that detect sound waves and convert them into electrical signals that go to the brain. The mechanisms behind hair cell activity are still not fully clear, which makes hearing one of the least understood senses.

For Bozovic's work to flourish requires a university with an exceptional combination of academic programs; Bozovic found that combination at UCLA.

"For my field, I need an environment with strong physics and biology," said Bozovic. "They have both here at UCLA. The physics department has a lot of technical expertise, and at same time the medical school and life sciences are very extensive. So I found that UCLA has both of my fields very well represented, and it seems like a good place for this kind of interface between the two."

Bozovic, who started work at UCLA this year, is one of 22 new faculty hired by the College of Letters and Science for the 2005–06 academic year. With competition fierce for the finest scholars among the nation's best research universities, hiring new faculty is a constant and critical priority to ensure that institutions maintain—and increase—the strength and depth in their best academic fields of study.

Now, hiring in the College will take a giant leap forward. Beginning this year, the College will embark on an ambitious program with the goal of hiring 150 new top scholars to UCLA over the next three years.

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Matteo Pellegrini

Molecular, Cell & Developmental Biology

"I came to UCLA because I wanted to be able to do more basic research. I think it's an excellent environment—there's a lot of high-level research and there's good support for the research groups; I'm surprised that since I started in July, I've already started collaborations."

"We have indeed created an ambitious plan for bringing top faculty to the campus," said Executive Dean Patricia O'Brien. "This increase in our hiring is absolutely necessary to ensure that we maintain the quality of our teaching and research programs.

"By hiring at such a level, we can reinforce our current fine fields of study, and also expand into new disciplines where we have not been before."

Encouraging New Directions in Scholarship

The College will be seeking a range of academic talent—established veteran faculty with years of distinguished achievements in their fields, as well as new scholars who are already making their mark as post-doctoral investigators or as teacher-researchers at other universities.

UCLA's reputation as a university with academic departments that encourage new directions in scholarship and collaborations across traditional disciplines is a strong attraction for many dynamic scholars.

That nurturing view toward new approaches to research was precisely what Olivia Bloechl sought when she joined the Department of Musicology.

Bloechl, who came to UCLA from Bucknell, specializes in the early modern music cultures of France, England and colonial North America. Her research also explores identity and social difference as expressed in music.

"UCLA's Ph.D. musicology program is known as one of the more experimental and risk-taking, compared to the more traditional programs," said Bloechl. "That aspect was very exciting to me."

"I'm trying to reframe European music history to recognize that it was not an isolated process but happened in dialogue with colonialism and other issues," said Bloechl, who is currently writing a book titled *Native American Song at the Frontiers of Early Modern Music*. "This kind of revisionist approach is something this department welcomes."

Matching Faculty Expertise with New Academic Needs

A key element in the College's faculty hiring plan is matching the scholarship of recruits with the changing academic priorities of specific departments.

"There are very few positions in my field," said Aaron Burke, assistant professor in the archaeology of ancient Israel and early Judaism—a post that was created as a result of expansion in the Department of Near Eastern Languages and Cultures.

"UCLA is the cream of the crop in terms of my field because of the university's standing," said Burke, who in his work on ancient warfare is completing research on the fortifications of cities in the eastern Mediterranean during the Middle Bronze Age (2000-1500 B.C.E.) "It's a boon to the program here to have created this position."

Creating a new faculty slot in a specific field not only advances a specific new field of study, but also serves as a channel for new collaborations and expanding broader academic inquiries.

"One of the very attractive parts of being an

Dolores Bozovic

Physics and Astronomy

"For my field, I need an environment with strong physics and biology— they have both of those here. I found that UCLA has both of my fields very well represented, and it's a good place for this kind of interface between the two."

archaeology faculty member here is that there is automatically an affiliation with the Cotsen Institute of Archaeology," said Burke, who will teach "Jerusalem —the Holy City" for undergraduates in the Winter Quarter.

"That means close proximity with archaeologists working in various geographic regions who have different backgrounds and experiences, which creates a fantastic dialogue," said Burke. "There are specialists in many different sub-fields who are available to consult on any of the archaeology projects university-wide."

For Joshua Dienstag, a professor of political science who came to UCLA this year after teaching for 13 years at the University of Virginia, "the key to collaboration is not just being part of a very good political science department—which we have here. It's equally important to have colleagues in departments of history, sociology and philosophy—the sister disciplines for my work. So having a constellation of excellent departments, and being able to talk to, listen to and learn from people who have different perspectives on the same material is enormously valuable."

Creating collaborative academic partnerships can begin quickly—even in the always-complex early stages of a new faculty career.

"I wanted to be able to do more basic research, while industry is more applied," said Matteo Pellegrini, a new assistant professor in the Department of Molecular, Cell and Developmental Biology who worked in the pharmaceuticals industry and at a start-up biotech company before joining UCLA this year.

Two months into his work at UCLA, "I'm surprised that I've already been able to start some collaborations with groups on campus," Pellegrini said. "People are extremely easy to work with—very pleasant and supportive."

Financing Our Success

The financial issues involved in faculty hiring are particularly acute in Los Angeles, where the basic costs required to establish research and teaching programs for new faculty are compounded by skyrocketing housing prices and intense competition from other top American universities in markets with lower property values.

"Los Angeles is attractive for faculty, but it can be difficult to settle here on an academic salary," said Dienstag, who studies political thought of the 18th to 20th centuries. "UCLA recognizes the challenges of housing and schools for faculty with children. The campus recruiters appreciated the issues we faced in relocating from a semi-rural environment to an urban environment."

What will it take for the College's three-year hiring plan to succeed? The solution is primarily financial—in particular identifying new sources of private funding to create endowed chairs that provide faculty resources, and graduate fellowships to strengthen the academic core of the campus.

"Clearly, we face a tremendous challenge to ensure that we achieve our goals for faculty hiring," said O'Brien. "We need to recruit more faculty while we simultaneously build the assets to support their efforts. But the results will produce long-term benefits that will shape the future of teaching and research in the College for decades to come."

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The new Center for Cognitive Neuroscience will create an interdisciplinary organization that explores some of the greatest challenges of science.

Opening a Door to the Once-Inaccessible Mysteries of the Brain

By Dan Gordon

Newly armed with powerful imaging tools, neuroscientists and behavioral psychologists are joining together for the first time at UCLA to explore a frontier that was once inaccessible: the mechanisms inside the brain that underlie functions as complex as reasoning, communication and the ways in which we conceptualize our environment.

Cognitive neuroscience studies what the brain analyzes and what we become aware of—and how those mechanisms get disturbed. Work in cognitive neuroscience could also pave the way to better treatments for Alzheimer's disease. And by opening a window into the way people learn, it might also provide tools to improve the way children are educated.

"The stakes in this new and fast-growing field are huge," said Emil Reisler, dean of life sciences. "By unraveling the genetic factors responsible for variations in the ways people think, researchers will be identifying targets for treating or preventing some of our most debilitating neurological illnesses, including schizophrenia and mood disorders."

With the creation of the Center for Cognitive Neuroscience in the UCLA College of Letters and Science, the university will bring together research and teaching philosophies that were once segregated into a combined effort that positions the campus as a leader in this new scientific endeavor.

Researchers in the Center for Cognitive Neuroscience will decipher the molecular basis of complex biological network functions across the evolutionary spectrum. They will study brain processes in healthy populations as well as in populations with specific mental disorders, said Tyrone Cannon, the Staglin Family Professor of psychology, psychiatry and human genetics and the new center's director.

"These two efforts inform each other," Cannon explained. "By understanding how the mind is structured and how the brain supports the mind in someone who is functioning in the normal range, we can better understand how those processes get disturbed in diseases."

Tyrone Cannon, director of the new Center for Cognitive Neuroscience, with Lara Zimmerman, UCLA graduate and now a research assistant: "We need to identify individuals who are at the highest risk before illness has set in. The efforts of this new center will help us develop other approaches so that we can intervene earlier and more effectively."

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Roughly one percent of the population has schizophrenia, and another one percent suffers from bipolar disorder, Cannon notes. Ten percent will experience at least one episode of major depression in their lifetime *(for background on depression's impact on teenagers, see page 13)*. Collectively, these three debilitating mental illnesses account for approximately half of the mental health service use in the United States, and close to half of the overall public assistance provided for all biomedical disabilities.

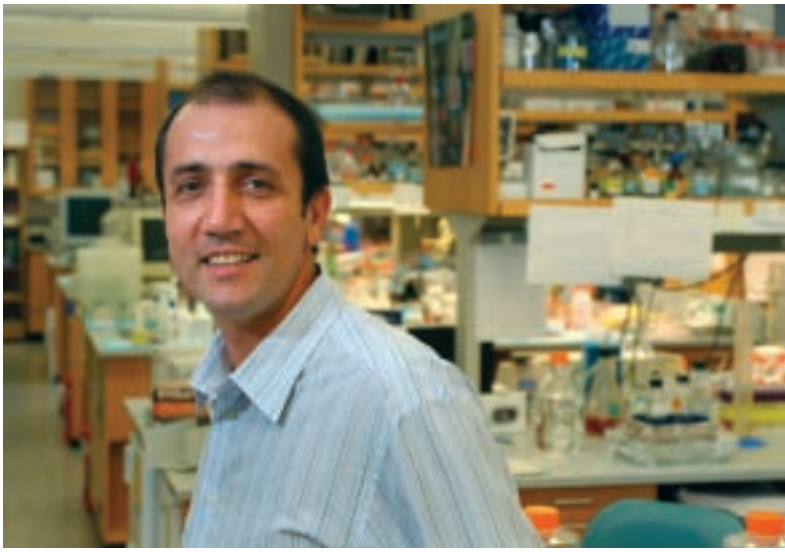
"The burden to individual sufferers and their families, and to society in terms of their costs, is huge," Cannon said. "From a public health perspective, this is where we need to focus."

UCLA faculty are already recognized as world leaders in studying illnesses that affect cognitive systems, from schizophrenia and Alzheimer's disease to neurofibromatosis—a rare form of cancer, caused by a single gene, that affects learning and memory systems in the brain.

Cannon's own research focus has been in schizophrenia. He led a team of UCLA scientists who in 2002 reported that they used a novel three dimensional mapping technique to identify regions of the brain where people with schizophrenia have significantly less gray matter than their identical twins and the rest of the population. Schizophrenia patients have substantial reductions of gray matter in regions of the brain that integrate, interpret and organize information, Cannon and his colleagues reported.

"We begin life with far more neural connections than we will ever use, but lose huge numbers of the connections among brain cells in late adolescence," he said. "In the regions of the brain that govern the synthesis of information, a critical threshold may be required for integrated cognitive activity. If people fall below this threshold, they may be unable to sustain normal brain activity; the resulting disintegration of cognition may then become apparent as hallucinations, delusions, thought disorder and the other symptoms of schizophrenia."

"The stakes in this field are huge—by unraveling the genetic factors responsible for variations in the ways people think, researchers will be identifying targets for treating or preventing some of our most debilitating neurological illnesses, including schizophrenia and mood disorders."



Alcino Silva: "Ten years ago, scientists looking at cognitive function from a molecular perspective had little to say to those who were looking at it from a psychological perspective, because the two fields were worlds apart."

Future research taking place in the new center may reveal whether schizophrenia patients have many fewer connections to begin with and cross this hypothetical critical threshold during the normal pruning process that occurs during adolescence, or whether they lose connections at a faster rate than normal.

The promise of that discovery and related work is that scientists might eventually pinpoint the molecular mechanisms that cause this loss to occur, and perhaps halt the process and prevent or reduce the loss.

In other research, Cannon has identified the fundamental importance of genetic issues, showing that schizophrenia is more than 80 percent genetic, and that the environmental influences most likely depend on genetic factors as well.

Cannon is one of many experts from disparate fields who will be collaborating at the center.

"We will have people who study molecular genetics and neuroscience at the most basic level, psychologists who study how humans perform cognitive tasks and take in new information, and all points in between—including computer scientists who are modeling cognitive processes in machines," Cannon said.

The center will cast a wide net—for example, bringing in philosophers to explore if scientific attempts to model the mechanical structure of the mind can fully explain the complexity of human mental phenomena.

"Ten years ago, scientists looking at cognitive function from a molecular perspective had little to say to those who were looking at it from a psychological perspective, because the two fields were worlds apart," said Alcino Silva, professor in the departments of psychology and neurobiology.

The major technical innovation that bridged the disciplines to facilitate the growth of cognitive neuroscience is functional magnetic resonance imaging (fMRI), imagery that reveals the functioning areas of the brain. The technology is relatively easy to implement—fMRI scanners are common in medical environments and non-invasive, using levels of radio frequency signals that pose no risk to subjects who are scanned.

"Those features, combined with the fact that fMRI provides high resolution for imaging oxygen levels in the brain, have enabled scientists to develop models of how multiple regions of the brain perform complex, interdependent cognitive processes," Cannon said. "It has allowed us to unify a lot of the content that is being investigated in the field."

The explosive growth in cognitive neuroscience is reflected in changes that researchers such as Susan Bookheimer have seen in the types of graduate students applying to her program.

"Cognitive neuroscience is the most rapidly expanding area of brain research," said Bookheimer, a clinical neuropsychologist and professor in the UCLA departments of psychiatry and biobehavioral sciences and psychology, "and it's largely propelled by methods for mapping brain function that previously weren't available."

Neuropsychologist Susan Bookheimer: "Cognitive neuroscience is the most rapidly expanding area of brain research. It is largely propelled by methods for mapping brain function that previously weren't available."

Bookheimer, who specializes in functional brain imaging with positron emission tomography (PET) and fMRI, has studied the organization of language and memory in the brain in healthy adults and children, as well as in neurologic conditions and developmental disorders. Recent work has focused on using fMRI to understand the neural basis of social communication deficits in autism.

With strong cognitive psychology and cognitive neuroscience programs within the Department of Psychology, an equally outstanding interdepartmental neuroscience program, and a renowned brain imaging program in the David Geffen School of Medicine, the UCLA Center for Cognitive Neuroscience is well positioned to bridge this traditional gap. Moreover, Cannon said, a strong culture of multidisciplinary collaboration is already in place.

"I've been other places where there was potential for this type of center but the culture didn't support it," he said. "UCLA is unique in this regard—the threshold for getting very prominent scientists who look at these phenomena from a molecular biological perspective together with people who study cognition in humans is very low."

Cannon is confident that by bringing together top scientists in these once divergent fields, the center can make great progress in going after the root causes of debilitating mental disorders.

"In most cases, by the time a neuropsychiatric illness is diagnosed, it's relatively intractable," he said. "We have treatments that can partially reduce some of the symptoms, but people have to stay on these medications over their lifetimes and they are always vulnerable to future episodes."

Cannon notes that the already-established trend in treatment for physical illness, in which there is an emphasis on early detection and preventive intervention for diseases such as cancer and diabetes, is just starting to take hold in the field of neuropsychiatric illness.

"We need to identify individuals who are at the highest risk before the illness has set in," said Cannon. "Right now our ability to do that is dependent completely on observable symptoms and behavior. But the efforts of this new center will help us develop other approaches, including measures of brain structure and function, and genetic variation, so that we can intervene earlier and more effectively." CR

www.psych.ucla.edu/Faculty/Cannon

Dan Gordon is a Los Angeles-based writer who contributes frequently to UCLA publications.

A Quiet Commitment to Excellence

An extraordinary anonymous gift to the Department of History will provide important support for faculty and graduate students.

A $5 million gift to the College will create two endowed chairs in American history that will be named for renowned UCLA scholars Gary Nash and Joyce Appleby.

Among the most generous friends and donors to the UCLA College are individuals who prefer not to receive public acknowledgment. Although these donors may remain anonymous, their thoughtful philanthropy is no less valued by the faculty and students who benefit from their support.

Recently the College received an anonymous gift that will contribute significantly to the distinction and standing of the Department of History. The new endowment, totaling $5 million, provides substantial funding for both faculty and graduate students, including two endowed chairs and wide-ranging fellowship support.

Endowed chairs are a compelling means to attract distinguished professors of international distinction and retain them at UCLA. Such chairs bring considerable honor to the recipients, and provide crucial resources for their teaching and scholarship.

The new endowment will create two chairs in American history, to be named for UCLA Professors Emeritus Gary Nash and Joyce Appleby, both nationally-renowned historians of U.S. history. Although they both retired recently, Nash and Appleby remain active in the department and in their fields. Appleby studies British and American intellectual currents during the Revolutionary Era; Nash, a social historian, recently completed his book, *The Unknown American Revolution*, published by Viking.

According to history department chair Edward Alpers, Nash and Appleby are "differently but equally brilliant."

The Gary Nash Endowed Chair in American History will be awarded to an eminent scholar within the broad range of the field. The Joyce Appleby Endowed Chair of America in the World will be occupied by an historian whose scholarship is primarily in U.S. history but who also is interested in other countries and who studies American history in a global context.

Alpers is delighted to be able to offer these chairs as a means to attract faculty.

"We can't have a great history department without a really strong field of U.S. studies," Alpers said. "We do

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have a strong U.S. field, but it's been seriously weakened by the retirements of several eminent faculty members, and the death of Eric Monkonnen, who also was a very distinguished scholar.

"These endowed chairs are a way of jump-starting the process of rebuilding the department in that field," Alpers said. "They will serve to remind everybody what a fine U.S. field we have, and that we're committed to strengthening it."

Scott Waugh, dean of the Division of Social Sciences, said, "The impact of this gift will be huge, especially because it honors, in part, two of the towering figures in the department who have left an enduring legacy in both teaching and scholarship."

The new gift also creates abundant resources for fellowship support for talented graduate students across the department. The Millennium Endowed Graduate Fellowships will help the Department of History draw outstanding graduate students to its programs.

"Obtaining funding for graduate students is extraordinarily important because we lose some of our best applicants to Harvard and Princeton and Stanford every year," Alpers said. "They just get offered more money. This gift gives us tremendous flexibility and enables us to compete for top students."

In addition, the Hans Rogger International Student Fund in History will allow the department to provide crucial financial assistance to non-American graduate students. Rogger, who himself was an immigrant, fled with his family to the United States in 1939 from Nazi Germany. A renowned historian of imperial Russia, he joined the UCLA history faculty in 1961. After his death in 2002, former colleagues and students, as well as Rogger's widow, Claire, established an endowed fund in his memory. The recent anonymous gift substantially augments that fund with fellowships for non-American graduate students.

Non-resident tuition is high, often beyond the means of underrepresented students from other countries, whose funding opportunities are limited.

"Hans Rogger was a wonderful human being and a fine scholar and teacher," Alpers said. "He was much beloved by those whom he trained and by his colleagues in the department. This gift adds considerably to his distinguished legacy."

Dean Waugh concluded, "Gifts like this, directed toward the support of both faculty and students, are critical for UCLA's continued growth as a great university. This kind of support demonstrates a confidence in the department and the university that sends an important message to the campus and the community—a message that becomes more important as the university increasingly depends on the generosity of its alumni and friends." CR

"These endowed chairs are a way of jump-starting the process of rebuilding the department in that field. They will serve to remind everybody what a fine U.S. field of studies we have, and that we're committed to strengthening it."

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You can make a gift to UCLA and receive a lifetime income.

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Supporting Early Faculty Careers

The estate of an award-winning former professor provides a bequest to create a career development chair.

From 1956 to 1977, UCLA was fortunate to have eminent biophysics pioneer Alexander Kolin on its faculty. Biophysics is an important scientific field that applies physical principles and methods to the understanding of biological systems and how they work.

Although Kolin retired in 1977 and died twenty years later, UCLA continues to benefit from his extraordinary dedication and commitment. Recently, the university received a gift from the estate of Kolin and his late wife that will establish an endowed career development chair. The Alexander and Renee Kolin Endowed Professorship in Molecular Biology and Biophysics will be awarded to promising scientists early in their careers whose research focuses on this important interdisciplinary field.

Born in Russia in 1910, Kolin moved to Germany with his family at age 12, and then to Czechoslovakia in 1933. There he completed his doctoral degree in physics in the record time of fourteen months. Soon after he graduated, he emigrated to the United States, where he met Albert Einstein, a major influence and inspiration for the young scientist.

Einstein was so impressed with Kolin that he helped him obtain a position at a Chicago hospital. While there Kolin invented an electromagnetic flow meter to measure the flow of blood. This unique device is still used extensively in medicine and industry. Later, at the University of Chicago, Kolin invented isoelectric focusing, a laboratory technique that enables scientists to separate amino acids and proteins on the basis of their electrical charge.

In 1956 Kolin came to UCLA, where his groundbreaking research in the Molecular Biology Institute (MBI) led to numerous prestigious awards. Professor emeritus and Nobel laureate Paul Boyer, who was director of the MBI at that time, remembers Kolin as "a gifted investigator—exceptionally intelligent—and a fine individual."

Emil Reisler, dean of the Division of Life Sciences, said, "The reason that Professor Kolin created an endowment for UCLA is that he had such a rewarding experience here."

Photo: University of Chicago Library/Special Collections Research Center, Stephen Lewellyn

The estate of Alexander Kolin, a former UCLA scholar and pioneer in the field of biophysics, has endowed a chair to support the career development of a promising scientist in the field.

The Kolin Professorship will provide a crucial means of attracting promising scientists to UCLA and retaining them on the faculty.

"The chair will give us a competitive edge so that we can offer a beginning scientist additional research options and capabilities," Reisler said.

In accordance with the donor's wishes, the Kolin Professorship will be awarded "in conjunction with. . . the Departments of Physics, Chemistry, and Biology" in the UCLA College, as well as the David Geffen School of Medicine, and will be administered by the Molecular Biology Institute. It will rotate to a different faculty member every five years.

The gift could not have come at a better time for faculty recruitment. "We just started a new biophysics major in the Physics Department this year," said Tony Chan, dean of the Division of Physical Sciences.

Both of the College's science deans are excited by the prospect of having a new term chair to offer to faculty in their divisions. "This chair will facilitate cooperation among our departments and units in terms of attracting great candidates across a number of disciplines," said Chan. "UCLA's strength has always been that we hire bright young stars. We take chances on them and encourage them to develop their careers here." CR

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Inspiring Undergraduates

A gift from Rose Gilbert has created the largest endowment specifically for students in the College Honors Program.

In the 65 years since Rose Gilbert graduated from UCLA, her devotion and generosity to her alma mater have remained steadfast. In fact, she recently demonstrated her affection for the university with a gift of $1 million to the UCLA College of Letters and Science, creating the largest endowment specifically for students in the College Honors Program.

To honor her daughter—also a UCLA alumna—who died last year, she established the Rose Gilbert in Memory of Maggie Gilbert Endowed Scholarships for students in the Honors and Undergraduate Program in the UCLA College.

"I set up the scholarship not based on need—just merit," Gilbert said. "Maggie was in the honors program at UCLA. I believe in merit."

After graduating from UCLA in 1940 with a comparative literature major and a teaching credential, Gilbert went to work at MGM Studios as a contract agent. "There weren't any men around during World War II," she explained, so she took what was considered a "male job." "It wasn't my first love, but it paid good money."

"I believe all UCLA alumni should give back to the school that gave us our start."

Gilbert's first love was, and is, teaching. Her late husband Sam believed she was born to be a teacher.

"OK? That settles that!" she declared, laughing. "I wanted to be with my kids when they were little, but as soon as Maggie was ten years old, I went into teaching full time." By then her sons Michael and Robert were in junior high and high school, and her husband was a successful real estate developer.

Today, at 87, Gilbert is one of the oldest full-time teachers in the nation, teaching four Advanced Placement English classes at Palisades High School. During almost 50 years as a teacher, she has won many teaching awards, and even appeared on CBS' *48 Hours*. Many former students remain in contact, sending affectionate letters that she proudly reads to her current classes.

Gilbert attributes her teaching success to the excellent education she received at her beloved alma mater.

Sixty-five years after graduating from UCLA, Rose Gilbert is still active, both as a teacher at Palisades High School and as a benefactor of the College.

"We had good teachers, small classes. UCLA's population was more like a high school then," she recalled. "Everybody knew everybody. I loved it." Gilbert remembers that George Gershwin lived near the campus and often came over to play and compose music—including a UCLA marching spirit song—at the piano in Kerckhoff Hall. She describes historic moments such as the gathering of the entire campus population in Royce Hall in 1939 for the announcement that Germany had invaded Poland, and the subsequent student demonstrations against fascism.

"I got so much out of UCLA. I think it's a great school," Gilbert said. "Sam went to UCLA also. We always have given to the university."

Together, the Gilberts' generosity has extended across the campus to include the College of Letters and Science, the arts and the athletics programs.

"I came from an impoverished background," said Gilbert. "I believe all UCLA alumni should give back to the school that gave us our start."

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

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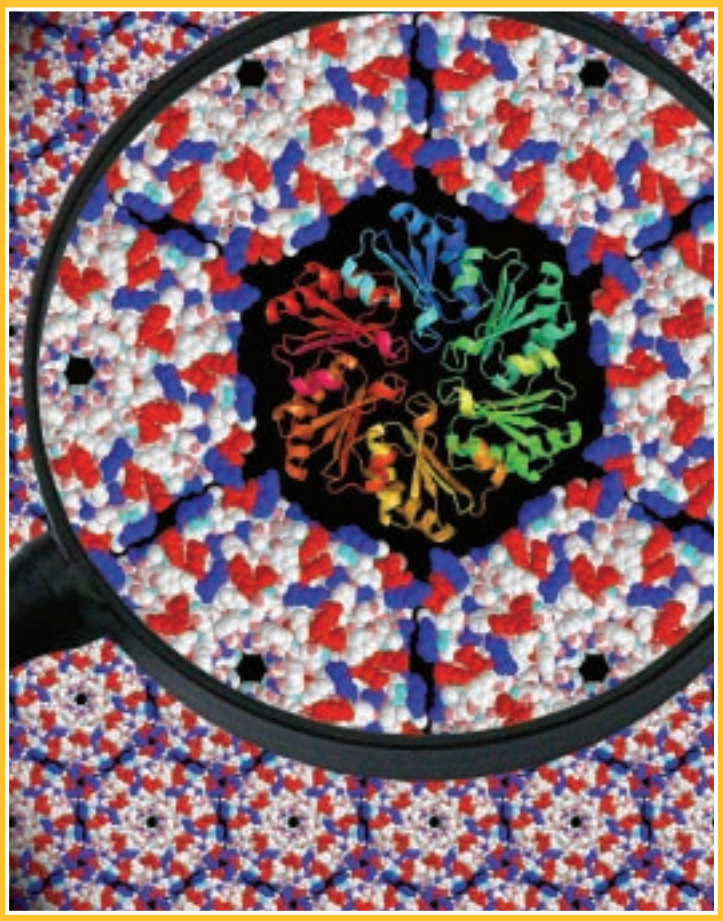

Eric Yeates

The three-dimensional structure of the protein building blocks that make up the shell of bacterial "microcompartments," determined by a team led by biochemists Todd Yeates, Cheryl Kerfeld and their UCLA colleagues. Beyond the elegant beauty of these microcompartments is the critical role these structures play in seemingly simple organisms.

For more about how UCLA researchers are revealing insights about complex biological machinery at the molecular level, see page 6.

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