

Summer 2008

Volume Ten

UCLA COLLEGE

R E P O R T

UCLA COLLEGE OF LETTERS AND SCIENCE

4

Long Before the Pharaohs

An archaeological find in Egypt is providing a major breakthrough in understanding the people of the New Stone Age.



6

Creating a New Defense for Biodiversity

Using unique analysis of environmental threats, biologist Thomas Smith creates enlightened conservation programs in key rainforest regions.



8

Exploring the American Political Mind

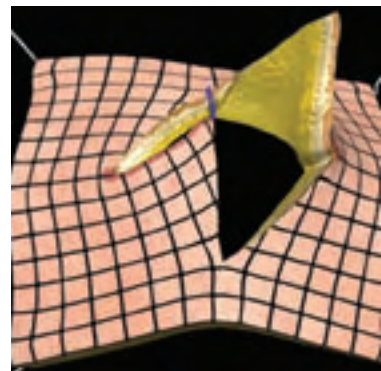
Lynn Vavreck co-created the only nationwide presidential poll fielded exclusively on the Internet, reaching one of the largest voter groups ever studied in a presidential race.



10

Surgery on a Virtual You

Mathematician Joseph Teran develops technology that someday will allow a surgeon to operate on your "digital double" before a real procedure is performed.



On the cover:

Is it art, or science, or both? When UCLA scientists Thomas G. Mason and Carlos J. Hernandez designed and mass-produced billions of micron-size particles in the shapes of the letters of the alphabet, they produced significant science. The Museum of Modern Art in New York says their research is also art.

A sample of the work by Mason and Hernandez is on display in MoMA's "Design and the Elastic Mind," an exhibit that explores how designers, whether in science or art, create works that expand our thinking.

"I love the idea of science and art mixing together," said Mason, associate professor of chemistry and physics who holds UCLA's John McTague Career Development Chair. "The creative aspects of art and science are similar. In both, a new way of looking at something opens your eyes."

The letters, made of solid materials dispersed in a liquid, are too small to be seen with the unaided eye—about one one-thousandth of the height of the letters in this text.

The researchers, funded in part by the National Science Foundation, anticipate that this work will have significant technological and scientific uses. "We can mass-produce complex parts having different controlled shapes at a scale much smaller than scientists have been able to produce," Mason said. "We are on the verge of making functional devices."

The exhibit, which appeared at MoMA through May 12, continues indefinitely online at www.moma.org/elasticmind. For more on Mason's research, see "Mass Production at the Microscale" in the Summer 2007 issue of *College Report* at www.college.ucla.edu/report.



The Bird in the Top of the Tree

Alain Mabankou left behind a legal career to achieve acclaim as a poet, a biographer, and an award-winning novelist.

12



Breaking Sound Barriers

Physicist Dolores Bozovic explores new ground in her study of the fundamental processes of human hearing.

14

Snapshots

College News

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

2

Great Futures for the College

The impact of philanthropy on the College.

29

UCLA COLLEGE

R E P O R T

16

Generations of Exclusion

The revival of a 40-year-old research project has resulted in the most comprehensive sociological report ever produced on the integration of Mexican Americans.



Pinpointing Performance in the Brain

An award-winning graduate student in psychology creates new understanding of the complex and confounding issues surrounding schizophrenia.

22

18

How to Tame a Killer

Luisa Iruela-Arispe studies the growth of blood vessels to learn how controlling their development can stop humanity's most pervasive diseases.



The Challenge for China

Richard Baum explores the conflicts and questions that rage in China over Tibet, human rights, and the prospects for change.

24

20

On Track for a Comeback

For "non-traditional" students whose academic careers were interrupted, the challenges of restarting their studies are lightened at UCLA with fellowships from the Bernard Osher Foundation and support from the campus.



In Their Own Words

The winners of the 2008 Charles E. and Sue K. Young Undergraduate and Graduate Awards describe the many paths that led to their stellar achievements.

26

UCLA College of Letters and Science

Reynaldo F. Macías

Acting Dean of Social Sciences

Emil Reisler

Dean of Life Sciences

Joseph Rudnick

Acting Dean of Physical Sciences

Judith L. Smith

Dean and Vice Provost for Undergraduate Education

Tim Stowell

Dean of Humanities

College Development

Tracie Christensen

Assistant Vice Chancellor

Judith Forman

Development Communications

College Marketing

Harlan Lebo, Director

Media Relations

Meg Sullivan

Stuart Wolpert

Design

Robin Weisz/Graphic Design

Please address comments to
hlebo@support.ucla.edu

© Regents UC 2008

Unless otherwise indicated,
all photos by Reed Hutchinson.

College News

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



Reynaldo F. Macías, acting dean of social sciences



Emil Reisler, dean of life sciences



Judith L. Smith, dean and vice provost for undergraduate education

A Change in Direction for College Leadership

An interim management plan creates a cabinet composed of the five deans of the College.

The College of Letters and Science has embarked on a new governance plan under which the five deans of the College's divisions are managing the administration of the largest academic organization in the University of California system.

The interim plan—which closely models the organization of colleges at several other UC campuses—created a College Cabinet composed of Reynaldo Macías, acting dean of social sciences; Emil Reisler, dean of life sciences; Joseph Rudnick, acting dean of physical sciences; Judith L. Smith, dean and vice provost for undergraduate education; and Tim Stowell, dean of humanities.

“These arrangements will provide continuity and stability in operations and strong leadership to the College,” said Scott Waugh, acting executive vice chancellor and provost of UCLA.

Over the decades, governance of the College has evolved at UCLA and elsewhere.

“Many years ago, the College had a single dean with divisional deans who were really more like associate deans,” Smith said. “Then under Ray Orbach, the first College

provost, the divisional deans became full-time deans working under the central direction of a provost (and then later an executive dean), who spoke for and managed the College.”

The ‘executive dean’ model was also used at Berkeley, Santa Barbara and Davis, “but a few years ago, these campuses changed, and their colleges are now governed by a set of deans who work collaboratively,” said Smith. “The deans believe that this model is a viable approach for our College as well.”

Under the new governance plan, the deans continue to fulfill their divisional duties while sharing College-wide responsibilities, including service on campus committees and overseeing the College's central development and budget. Most significant, however, is the fact that each dean now reports directly to Waugh.

“Our goal is to strengthen the College—to assure its continued academic excellence, and to support faculty involvement in interdisciplinary, collaborative work across the College divisions and between the College and the professional schools,” said Waugh.

Chancellor Gene D. Block and Waugh have appointed an advisory committee that will make recommendations on a long-term administrative plan for the College.



Joseph Rudnick, acting dean of physical sciences



Tim Stowell, dean of humanities

Two Pulitzer Prizes for College Faculty

Scholars Saul Friedländer and Daniel Howe won 2008 Pulitzer Prizes for their books on the Holocaust and on U.S. history.

In an event unprecedented in the history of UCLA and the College of Letters and Science, two faculty in the same year have been awarded Pulitzer Prizes—the highest national honors in literary achievement.

UCLA professor of history Saul Friedländer, whose parents died in the Nazi Holocaust, won the 2008 Pulitzer Prize for general nonfiction for *The Years of Extermination: Nazi Germany and the Jews, 1939–1945*. The book, which blends



Saul Friedländer

the history of the Nazis with personal stories about their victims, is the second and concluding volume of Friedländer's acclaimed historical narrative about the persecution and extermination of the Jews during World War II. Last year, he received the Peace Prize of the German Book Trade, the Frankfurt Book Fair's top award.

UCLA emeritus professor Daniel Walker Howe won the Pulitzer in history for *What Hath God Wrought: The Transformation of America, 1815–1848*. A general history of the United States from 1815 to 1848, *What Hath God Wrought* focuses on the innovations in communications and transportation that laid the foundations of modern America. The book's title, taken from a quote in the Bible, alludes to the text of the first-ever telegraphic message, tapped out by Samuel Morse from the United States Supreme Court in Washington, D.C., in 1844.

Both faculty members received the news with pleasure.

"I'm thrilled. It's a great honor," Friedländer said. "It's an important prize because it's an American prize that has a great meaning in this country."

Howe said he was elated and grateful that the book has been appreciated.

"This is the first book that I have ever written for the general, literate, curious



Daniel Walker Howe

public, and I am very happy to have done that."

UCLA's three Pulitzer Prize-winning faculty are all housed in the College: in addition to Friedländer and Howe, professor of geography Jared Diamond won the 1998 Pulitzer Prize for general nonfiction for his book, *Guns, Germs and Steel: The Fates of Human Societies*. In addition, Gary Nash, emeritus professor of history and director of the UCLA National Center for History in the Schools, was a finalist for the 1979 Pulitzer Prize in history for his book, *The Urban Crucible: Social Change, Political Consciousness and the Origins of the American Revolution*.

College Awards 2008



Photo: Don Liebig

Rose Gilbert '40 (center) accepts the 2008 Honorary Fellow Award from vice provost Judith L. Smith and Chancellor Gene Block at the annual awards dinner of the College of Letters and Science on May 21. Gilbert was honored for her commitment to academic excellence and philanthropic leadership.

The dinner also marked the presentation of awards to this year's recipients of the Charles E. and Sue K. Young Undergraduate Awards, and the Young Graduate Student Awards—recognition made possible through support from Louis (B.A. '35) and Evelynne Blau. See page 26 for more on this year's winners.



LONG BEFORE THE PHARAOHS

An archaeological find in Egypt is providing a major breakthrough in understanding the people of the New Stone Age.

On a fertile oasis in northern Egypt, in ground that in recent years had been used to grow grapes, archaeologists from UCLA and the University of Groningen (RUG) found the earliest evidence of an ancient Egyptian agricultural settlement—a farming society that flourished more than 7,000 years ago.

“By the time of the pharaohs, everything in ancient Egypt centered around agriculture,” said Willeke Wendrich, the excavation’s co-director and an associate professor of near eastern languages and cultures at UCLA. “What we’ve found here is a window into the development of agriculture some 2,000 years before the pharaohs. This work will help us answer basic questions about how, why and when ancient Egypt adopted agriculture.”

Just inches below the surface of the site, which is located about 50 miles southwest of Cairo, the UCLA-RUG team excavated domestic wheat and barley and found the remains of domesticated animals, along with evidence of fishing and hunting, beads and pendants, pottery, tools, pits for cooking, and even hearths and clay floors for what appear to be dwellings.

“These discoveries have uncovered a new chapter in the prehistory of mankind,” said dean of humanities Tim Stowell. “Willeke is one of the stars in a dynamic group of humanistic archaeologists at UCLA whose research shines a light into the past using the research tools of the 21st century.”

The latest findings date to the Neolithic period, a stage of human development that occurred at various times around the world, beginning in 8,600 B.C. Sometimes called the New Stone Age, the period is characterized by the introduction of farming, animal husbandry, and a movement away from hunting and gathering and toward a less nomadic way of life, with pots, tools and settlements.

The work by the UCLA-RUG team is a new step in scholarship that began more than 80 years ago in an area of Egypt called the Faiyum Depression. In the 1920s, archaeologist Gertrude Caton Thompson found traces of domesticated grains less than a mile from the current site. After the advent of carbon-dating technology, the grain was dated to 5,200 B.C., making the discovery the earliest evidence of agriculture in ancient Egypt.

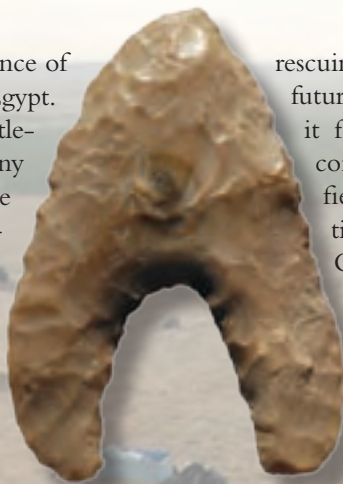
To this day, no earlier evidence of agriculture has been found in Egypt. But because no surrounding settlement was ever excavated, many questions remained about the context in which agriculture began to unfold in Egypt.

Few clues to Egypt's Neolithic past had been found in the Nile Valley, possibly because they were either buried under silt from the Nile or wiped away when the river changed its course. The UCLA-RUG excavation site is located just outside the river valley in what is now a desert region.

The oasis was surrounded by other prehistoric sites, but generations of archaeologists had written off the area, until the UCLA-RUG team decided to re-explore the site. The research there was funded by the National Geographic Society, UCLA, RUG and private donors on the Directors Council of the UCLA Cotsen Institute of Archaeology.

"We knew that the settlement existed, but the site had been under cultivation since the 1960s, so archaeologists assumed it had been destroyed," Wendrich said.

Modern farming techniques were about to annihilate the site in 2006, but the archaeological team succeeded in



rescuing the six-acre plot for future research by renting it for a year while they conducted their initial fieldwork. In the meantime, Egypt's Supreme Council of Antiquities has taken steps to permanently protect the site.

"We got to this site in the nick of time," said Wendrich.

With more than three feet of undisturbed layers at the site, the team expects to be able to piece together the evolution of domestication in the area between 5,200 B.C. and about 4,200 B.C.


"The arrival of the entire Neolithic package in ancient Egypt has always been treated as a moment in time, but we're finding layers that will allow us to tease out the development of agriculture in this area as it developed over the course of hundreds of years," said Wendrich, who is one of the core faculty members at UCLA's Cotsen Institute of Archaeology. "Rather than seeing the Neolithic as one period (about 8,500 B.C. to 4,000 B.C.), we can begin to understand its time depth and discern different periods and developments."

The wealth of new evidence will finally bring into focus how Neolithic society fit into the larger mosaic of Egyptian history, according to Bruce Smith, an archaeobiologist and a member of National Geographic's Committee for Research and Exploration.

"It's a missing link filling in a very important and poorly known phase of the development of agricultural systems, which led to the pyramids and later civilizations," Smith said.

Wendrich added that the discovery could alter the prevailing notion that the Neolithic period was primitive and disconnected from later and more sophisticated stages of ancient Egypt.

"The most important thing is that we don't look at this very early period of Egyptian history as something foreign to what happens later in the period of the pharaohs," Wendrich said.

"It's clear that this was not a bare existence that people had here. They made a pretty good life for themselves." 



"We knew that the settlement existed, but the site had been under cultivation since the 1960s, so archaeologists assumed it had been destroyed. We got to this site in the nick of time."

Willeke Wendrich: "What we've found here is a window into the development of agriculture some 2,000 years before the pharaohs. We hope this work will help us answer basic questions about how, why and when ancient Egypt adopted agriculture."

Creating A New Defense for

By Judith Forman

As predictions of global warming and species extinction grow increasingly dire, research at UCLA is under way to combat climate change and reduce its potentially devastating effects.

One of the leaders in these efforts is Thomas Smith, professor in the Department of Ecology and Evolutionary Biology and director of the university's Center for Tropical Research. Smith founded the center at San Francisco State in 1997, with the goal of improving communication between scientists and policy makers about conservation needs. He brought the center to UCLA six years ago.

An evolutionary and conservation biologist, and environmental advocate for 30 years, Smith has worked in rainforest regions in Africa, Australia, Latin America, and Hawaii, and has helped establish conservation programs and new parks in several tropical countries.

Tom Smith (left) in Uganda conducting research on avian blood parasites with Gediminas Valkiunas (far right) from the University of Vilnius and residents of a village in Western Uganda near Bwindi Forest National Park.



Biodiversity

Using unique planning and analysis of environmental threats, biologist Thomas Smith creates enlightened new conservation programs in key rainforest regions of the globe.

"The tropics piqued my interest because that is where diversity reaches its highest level," said Smith, who also serves as acting director of the UCLA Institute of the Environment.

"More than half of the organisms on the planet reside in rainforests. Although rainforests contain tremendous biodiversity, they also experience tremendous threats. Most of the biodiversity is in developing countries, where there are enormous pressures on land and animal populations."

Smith's team assesses the degree of threat and opportunity for each species and reports findings to conservation decision makers in the countries where they conduct their research.

"We get input from stakeholders in the region," Smith said. "Using the results of our research, we help develop prioritization plans to protect biodiversity pattern and process."

Smith's research focuses on investigating how speciation—formation of new species—occurs in tropical rainforests and how this process may change in light of global warming. Using a combination of molecular genetics and field biology, Smith has developed a new theory regarding speciation in the regions between the rainforests and grassland regions called savannahs.

Previously, scientists believed that the keys to speciation were ancient refugia—areas that became isolated during glacial times, with forests coming together and then separating again and again.

"Much less attention had been paid to the role of transitional habitats, or the habitats that border rainforests and savannah," Smith said. "These are very dynamic areas. Natural selection acts very differently in the forest than it does in the fragmented habitats as you move into savannah."

Smith began to suspect that these "ecotones"—the areas between rainforest and savannah habitat—played important roles in the creation of new species.

In the early '90s, Smith and his research team tested this idea, and found strong evidence to support the theory that speciation occurs in these dynamic ecotones, not in ancient refugia. Since then, they have worked in the gradient areas of Africa, South America, and Australia, and found the same consistent pattern.

"Why is this important for conservation?" Smith asked. "Because in preserving biodiversity, we want to preserve not only species and their populations, but also the processes that produce and maintain them."

Conservation efforts aimed primarily at protecting ancient refugia often fail to safeguard the areas that are important to speciation.

"This is really significant when you consider climate change," Smith said. "The biodiversity hotspots of today may not be the hotspots of tomorrow. We need to under-

stand how the hotspots for biodiversity are going to change, and how the processes that produce and maintain biodiversity are going to change."

Smith's goal is to maximize the amount of adaptive variation that can be preserved in species populations.

"It's like having a balanced stock portfolio," he explained. "Instead of buying one stock, we're going to buy a bunch of different stocks in the hope that some of them will do well."

In collaboration with scientists at the Jet Propulsion Lab, Smith and his team gather satellite data and create a range map for a species. Then they build a model to determine what will happen if carbon dioxide increases or temperature rises in the habitat area.


"If temperature increases, it's likely that distribution of the species will change as well," he said.

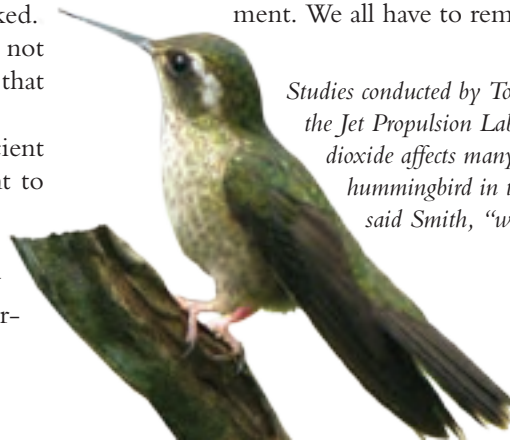
As an example, these changes are particularly evident in modeling conducted with the speckled hummingbird, a species that lives in the Andes.

"Climate warming will turn everything on its head," Smith said. "In our model, when carbon dioxide doubles, this hummingbird has an enormous habitat loss because all the populations move higher in elevation. However, when they move up, it's likely the plants on which they depend will not move up as well. So there will be severe population declines."

Smith also conducts research on viruses in birds, using genetic markers such as DNA in feathers to understand the relationships between birds' migratory pathways and the spread of strains of avian flu. The genetic research on avian flu conducted by his team is part of a larger collaboration with scientists in the UCLA School of Public Health and is helping to develop new protocols for the school's innovative disease lab now under construction.

Smith's involvement in a broad range of environmental enterprises is part of a commitment to conservation issues that is both professional and personal.

"We have to not only do more than simply study organisms, but also be proactive in protecting them," he said. "Every day I remind myself that everything I do affects the environment. We all have to remember that." 

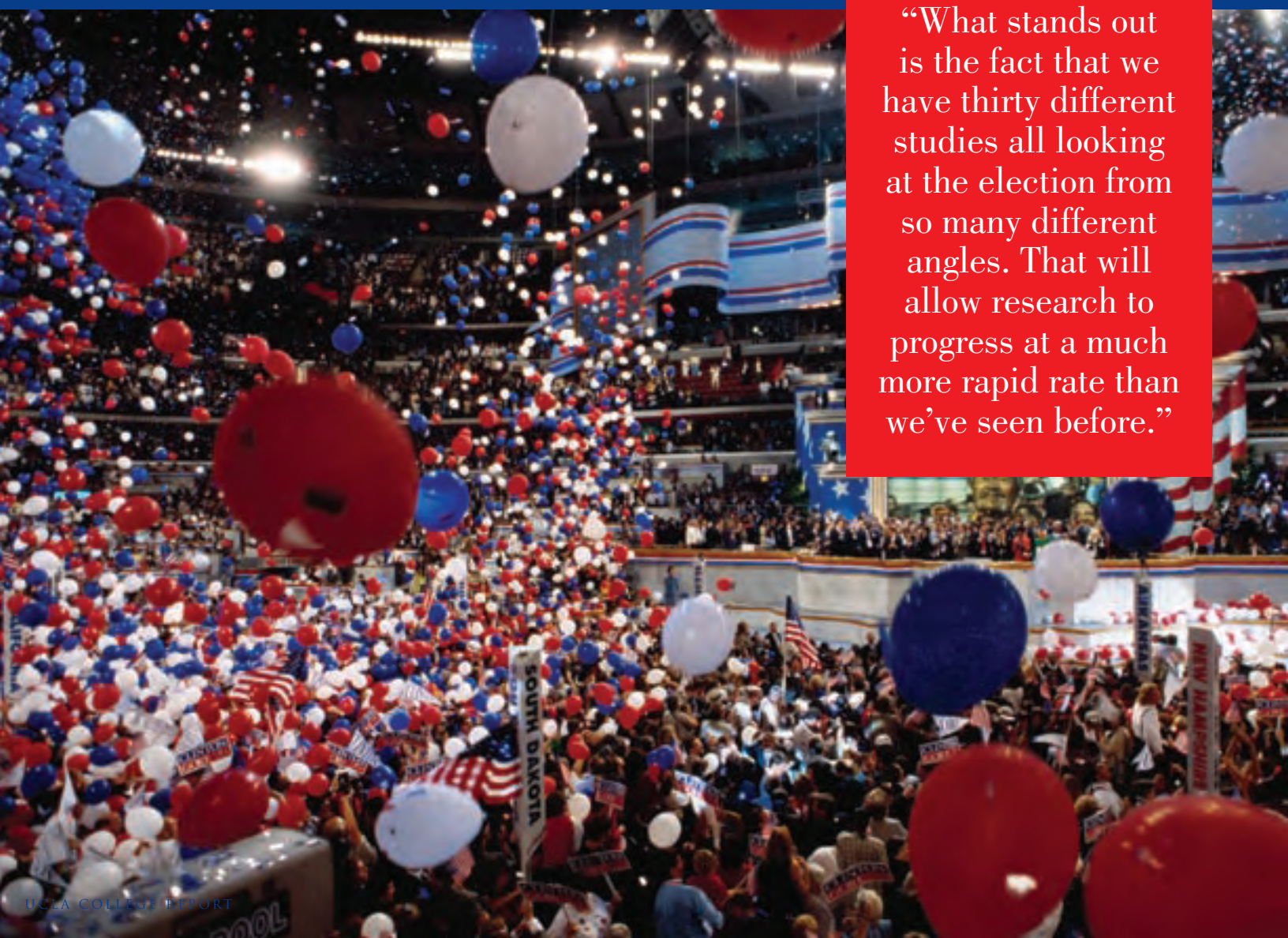


Studies conducted by Tom Smith and his team with the Jet Propulsion Lab help explain how carbon dioxide affects many species, such as the speckled hummingbird in the Andes. "Climate warming," said Smith, "will turn everything on its head."

Exploring the American Political Mind

UCLA political scientist Lynn Vavreck is one of the founders of the only nationwide presidential poll conducted exclusively on the Internet—a project that reaches one of the largest groups of U.S. voters ever fielded in a study of a U.S. presidential race.

“What stands out is the fact that we have thirty different studies all looking at the election from so many different angles. That will allow research to progress at a much more rapid rate than we’ve seen before.”



By Meg Sullivan

The meteoric rise of presidential hopeful Barack Obama that began with Super Tuesday may have surprised many voters, but not UCLA political scientist Lynn Vavreck.

From the helm of the only nationwide presidential study being conducted this election entirely over the Internet, Vavreck had observed two telling details:

In December, voters indicated that they considered presidential candidate Hillary Clinton to be a strong leader, but they didn't trust her. Then in January, more than half of the supporters of presidential hopeful John Edwards said they would throw their support behind Obama if Edwards were to bow out of the campaign, which he did six days before Super Tuesday.

"From our data we could tell that when Edwards quit, his supporters would largely migrate to Obama, dramatically increasing Obama's base of support," said Vavreck, an assistant professor of political science. "Sure enough, Obama went on to win 11 straight Democratic contests."

Vavreck's findings illustrate the power of the Cooperative Campaign Analysis Project, which she co-founded two years ago with the help of Doug Rivers, a Stanford political scientist and the founder of the polling research firm You Gov/Polimetrix.

Through the end of the 2008 presidential election, Vavreck and Simon Jackman, the project's co-director from Stanford, will lead 28 research teams at universities worldwide as they probe the minds of voters.

The Cooperative Campaign Analysis Project explores a broad range of questions about voters, issues, and political scenarios, including such issues as: How do neighborhoods affect the voting of residents? How do peers, friends, and co-workers influence voting behavior compared to other less-personal sources such as the media? And what role do campaign advertising, direct mail, and canvassing have on voters who live in competitive states compared to non-competitive states?

In addition to being among the first nationwide presidential polls to employ the Internet—and so far the only nationwide presidential poll conducted exclusively on the Web—the project reaches one of the largest groups of U.S. voters ever fielded in a study of a U.S. presidential race. Because of its size, the poll promises to capture subtle shifts in the electorate as the election proceeds.

"It's like taking the temperatures of supporters of different candidates, and seeing how rankings and ratings change as candidates drop out and new information is revealed," Vavreck said.

The work is a worthy objective for research that started as a stop-gap measure after the cancellation in 2000 of a project that gauged voter attitudes in Congressional elections dating back to 1954.

The study represented the only uninterrupted record of voter attitudes in mid-term races since scientific polling began. But in the demise of the study, Vavreck spied an opportunity.

"A small group of us starting talking about how to raise the money to continue the data collection, and the Internet seemed like an obvious way to cut costs," Vavreck recalled.

Instead of looking for one major funder to support the



Lynn Vavreck: "It's like taking the temperatures of supporters of different candidates, and seeing how rankings and ratings change as candidates drop out and new information is revealed."

entire project, Vavreck and Rivers believed that many participating researchers could afford to pay a small sum in exchange for a small amount of unique survey content.

More than 100 political scientists from 38 universities across the country paid for the study of the 2006 election cycle that polled 39,000 American citizens over the Internet, making the project not just the first nationwide election poll to be conducted online, but also the first cooperative study of its kind and the largest Congressional election study ever mounted.


"Lynn's research is not only creating significant new insight into U.S. elections," said social sciences acting dean Reynaldo Macías, "but her project is also becoming a model for collaborative research, the use of innovative methods and technologies, and how to create new resources that can benefit scholars everywhere."

Thanks to Vavreck and her colleagues, the survey survived and also opened new opportunities for inquiry to a broad range of researchers. The project also uncovered an historic finding: despite the fact that Congressional elections typically revolve around local issues, voter identification with their political party during the 2006 race played the largest role ever quantified in a mid-term election.

"This finding might have totally slipped through the cracks," Vavreck said.

While other comprehensive studies of presidential elections exist, Vavreck's cooperative project remains the only national election research funded by participants, who also design and field their own content.

On six occasions during this election season, the Cooperative Campaign Analysis Project will query a total of nearly 50,000 U.S. voters, using questions from all 28 participating scholars.

"What stands out is the fact that we have thirty different studies all looking at the election from so many different angles," Vavreck said. "That will allow research in this field to progress at a much more rapid rate than we've seen before." 

Surgery on a Virtual You

Mathematician Joseph Teran is developing the technology that someday will allow a surgeon to operate on your “digital double” before the real procedure is performed.

A doctor performs a delicate surgical procedure. But with one tiny slip of a hand, the operation fails. The patient dies.

Such a failure would be a tragedy. But soon, it will be a valued learning experience.

In this case, the “surgery” was conducted on a computer screen. The “procedure” is a set of mathematical equations that produces ultra-realistic graphics of human surgery—with all of the challenges but none of the risks of actual surgery.

Can mathematics make such science fiction a reality?

The day is rapidly approaching when a surgeon will be able to practice on your digital double—a “virtual you”—before starting to cut in earnest, according to mathematician Joseph Teran, who is working to make virtual surgery a viable, lifesaving technology.

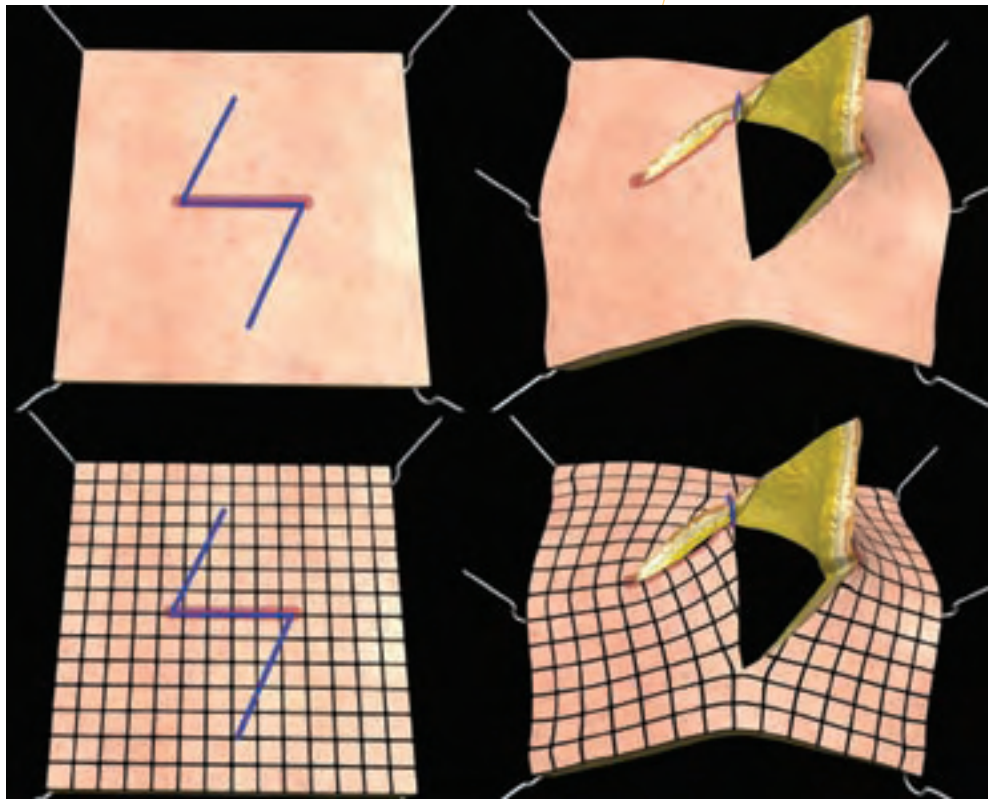
“Surgical simulation is coming,” said Teran, an assistant professor in the Department of Mathematics. “It’s cheaper than practicing on cadavers and a safer alternative to learning with real patients. You can fail spectacularly with no consequences when you use a simulator and learn from your mistakes.”

How would virtual surgery work?

“In the ideal situation, patients would go to the doctor’s office for a procedure and start by being scanned,” Teran said. A three-dimensional digital double would be generated, including their internal organs. The surgeon would first do surgery on the virtual patient, based on the real person. With a simulator, a surgeon could practice the procedure hundreds of times.

“A patient in a small town could be scanned while a doctor thousands of miles away practices the surgery using actual data from the patient,”

“A patient in a small town could be scanned while a doctor thousands of miles away practices the surgery using actual data from the patient. You can fail spectacularly with no consequences when you use a simulator and then learn from your mistakes.”



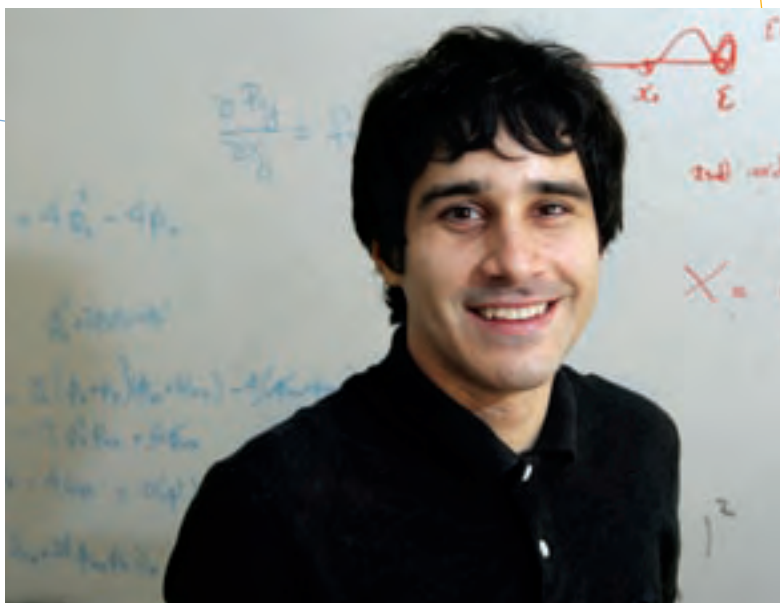
said Teran. “The patient would then travel to the surgeon for the actual procedure.”

Making virtual surgery a reality will require solving a host of mathematical equations, as well as creating progress in computational geometry and computer science. Teran and counterparts in computational geometry, partial differential equations, and large-scale computing are accelerating progress in creating virtual surgery.

How human tissue responds to a surgeon, Teran said, is based on partial differential equations. On computer, Teran solves the mathematical equations that govern physical phenomena relevant to everyday life, including biomechanical simulation of soft tissues.

“Most of the behavior of everyday life can be described with mathematical equations,” he said.

Tissue, muscle, and skin are elastic and behave like springs, Teran said. Their behavior can be accounted for by classical mathematical theory.



Joseph Teran: “With a simulator (see experimental virtual surgery techniques below), surgeons could practice hundreds of times.”

Already, Teran is creating simulations of human tissues and some medical procedures. When will full-scale virtual surgery be possible?

“We have to solve many mathematical problems before we can produce practical simulations, but it will happen,” said Teran. “A three-dimensional double of you can be made, but now it would take 20 researchers six to nine months to create it. Someday, one person will be able to do it in minutes.

“The only limiting factor,” said Teran, “is the complexity of the geometry involved. A virtual surgery cannot be a cartoon. It has to be biologically accurate. A virtual double needs to be really you.

“We’re working on that. Our goal as applied mathematicians is to make these technologies increasingly viable.”


Progress is proceeding rapidly in his field, Teran said, noting that “processes in geometry that used to take days and days start to take hours and minutes.”

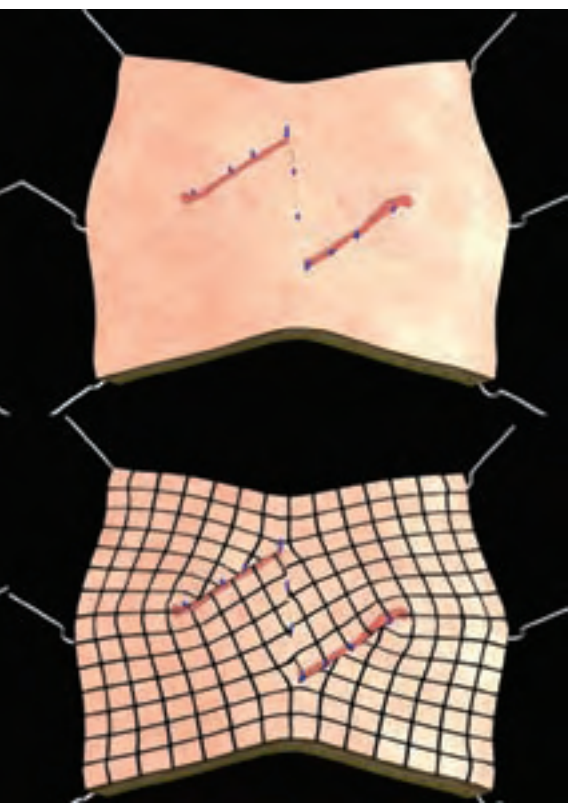
Said physical sciences acting dean Joseph Rudnick, “It is clear that what Professor Teran has accomplished represents the first major steps in a revolution in the application of mathematics to surgery and medicine in general.”

Teran’s research has broad applications beyond surgery, and can also be used to design more durable bridges, freeways, cars, and aircraft.

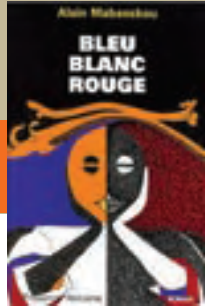
“I’m interested in creating numerical algorithmic tools that provide designers with more computational machinery at their fingertips,” he said.

As an undergraduate, Teran realized “you can use math problems to solve real problems and can help people in ways that seem totally unrelated to math.” While working on his Ph.D., he developed new ways to solve the equations that govern the elasticity of biological tissues.

“I started with math because I like problem-solving, and I like how elegant math is,” Teran said. “I enjoy how much careful analysis is required, and that there’s a right answer. Now I’m completely fascinated by what you get from a simulation, the kinds of complex behavior you can reproduce on a computer and the kinds of questions you can answer. Math will tell you how the world is. It will give you an answer, and it’s intellectually stimulating and fun. It really pays off.” 



The Bird in the Top



By Aaron Dalton

In the classes of Professor Alain Mabanckou, UCLA students learn that a book is one of the best things in the world.

“To teach them this, I have to show them how much I love literature,” said Mabanckou.

A professor in the Department of French and Francophone Studies, Mabanckou can speak about literature not just as a scholar, but also as a creator. Author of seven novels, a poetry collection, and a biography on James Baldwin (*Lettre à Jimmy*), over the past 15 years Mabanckou has won some of the most formidable literary prizes in the Francophone world.

Yet Mabanckou’s career was once heading in a different direction, while living in France and fulfilling his mother’s dream that he become a lawyer. Despite his filial devotion, Mabanckou could not shake his love of literature. By day, he filed legal briefs and argued cases on labor and criminal issues. At night, he read articles about the literary theories of Jacques Derrida and Michel Foucault.

Mabanckou’s critical success began in 1995, when his second book of poems won the *Prix de la Société des poètes français*, one of France’s major awards for poetry. Encouraged by the poetry award, Mabanckou branched out into fiction. In 1998, he released his first novel: *Bleu Blanc Rouge* (Blue White Red).

Named after the colors in

the French tricolor flag, *Bleu Blanc Rouge* tells the story of a Congolese man who attains his dream of living in France, only to discover a difficult reality of hardship and racism in his erstwhile promised land. The novel was showered with praise, and Mabanckou won the 1999 *Grand Prix Littéraire de l’Afrique noire*, the principal award in African Francophone literature.

In the decade since then, Mabanckou has produced five more novels with an impressive range of voices and themes. He has written about the relationship between modern-day Africans and the Afro-Caribbeans who came to the West Indies in bondage. He explored the 1990s Congolese civil war. A novel called *African Psycho* featured an African protagonist striving and failing to be a serial killer in the mold of the antihero in Bret Easton Ellis’ *American Psycho*.

In 2005, Mabanckou achieved his first true commercial success in France with *Verre Cassé* (Broken Glass), a novel about a philosophical barfly that was reprinted 12 times in France.

The next year, his most recent novel, *Mémoires de porc-épic* (Memories of a Porcupine) won the Prix Renaudot, one of France’s most important literary prizes. Implausible though it sounds, the main character in the book is, in fact, a porcupine.

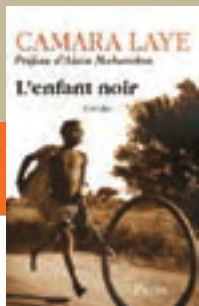
“African wisdom considers that everyone is born with an animal double,” said Mabanckou.



Alain Mabanckou: “I don’t think I would have written these books if I had just stayed in Africa or France. Distance is useful for a writer. Sometimes you need to be far away from something in order to see it.”

of the Tree

Alain Mabankou left behind a legal career to achieve acclaim as a poet, a biographer, and an award-winning novelist.



“The animal double and the person are fated to die the same day. But in my novel, when the man dies, his porcupine double does not die. Instead, the animal describes life with his master, the human being.”

If this sounds more than a little amusing, that humor is an accurate reflection of Mabankou’s personality. The voicemail message on his cell phone, for instance, consists mostly of an extended hearty belly laugh briefly punctuated with an invitation to leave a message.

“Writers write about things that they know,” said Mabankou. “When people who know me read my books, the most frequent comment I get is that my books are very funny—just like me.”

Of course, Mabankou is more than just a jokester. His novels tackle important subjects, including slavery, war, race relations, migration, violence and the media, spirituality, and philosophy. He pushes boundaries stylistically and linguistically as well, weaving Congolese rhythms into his French sentences or writing one entire novel without punctuation.

Arriving at UCLA in 2006 after a three-year stint at the University of Michigan, Mabankou quickly established himself as a core figure in the Department of French and Francophone Studies. Most universities have at least one specialist working on the Francophone world, but thanks to a spate of recent hires, UCLA currently has five full-time faculty members specializing in the French-speaking regions of the Caribbean, Africa and Canada.

“We probably have the most exciting French department in the country right now,” said professor and department chair Dominic Thomas. “Our vibrant approach to broadening the pa-

rameters of French and Francophone Studies has made us into a blueprint of what French studies will look like in the future.”

Mabankou’s multiple talents give the department all sorts of possibilities in terms of engaging with students.

“I don’t think it’s ever been done before within a modern language department, but starting in the 2008–09 academic year, Alain will be leading a French-language creative writing class,” said Thomas.


“Living in the United States, far from both the Congo and France, allows me to create my own culture, to mix my background and invent other ways of thinking. In this sense, America is the place where I can say that I am quietly writing.”

In Mabankou, UCLA gets an inspiring professor who has achieved celebrity status in France and whose distinction will only grow as his books continue to be translated and adapted.

For his part, Mabankou values the perspective that Los Angeles affords.

“As you see a lot of countries, your views will change,” he says. “Living in France made me understand very well the processes of colonization and discrimination. Living in the United States, far from both the Congo and France, allows me to create my own culture, to mix my background and invent other ways of thinking. In this sense, America is the place where I can say that I am quietly writing.”

African Psycho, *Memories of a Porcupine*, the James Baldwin biography, and a new volume of collected poetry—these are the fruits already borne from Mabankou’s time in the States.

“I don’t think I would have written all of these books if I had just stayed in Africa or France,” said Mabankou. “Distance is useful for a writer. Sometimes you need to be far away from something in order to see it. The bird in the top of the tree can see everything. A bird sitting at the bottom of a tree cannot.” 

Breaking Sound Barriers

Physicist Dolores Bozovic explores new ground in her study of the fundamental processes of human hearing.

Dolores Bozovic: *"The study of hearing, in particular, is such an open field."*



By Dan Gordon

At the junction of physics and neuroscience, bolstered by state-of-the-art technology, Dolores Bozovic hopes to unravel some of the basic mechanisms governing one of the least understood of our senses.

Little is known about the functions of “hair cells”—the specialized, highly sensitive cells in the inner ear that convert low-intensity sounds into hearing. Bozovic, an assistant professor in the Department of Physics and Astronomy, is creating new analytical approaches to studying the mechanical sensitivity of these cells.

“Hair cells are the first step in processing our hearing, and unlike senses such as vision and smell, we have very little understanding of what’s happening in them,” said Bozovic, who describes her work as part auditory neuroscience and part biophysics.

“How do hair cells detect very small mechanical signals and convert them into electrical signals? How is the signal extracted from the noise? Is there some averaging or synchronization among the cells? These are still very much open questions.”

Although Bozovic has embarked on solving these puzzles at the level of basic research, the answers could ultimately hold important clinical implications. When hair cells are damaged—whether by loud sounds, infections, or as a reaction to drugs—they do not regenerate. So unlike other causes of hearing loss, auditory problems resulting from hair-cell damage are irreversible.

“Learning more about how the hair cells break could lead to clinical research about ways to protect them from damage,” Bozovic said.

Bozovic’s research focus on issues that merge such complex inquiries emerged from an interest in both the biological and physical sciences that began in her youth. The daughter of scientist parents, Bozovic was born in Belgrade in the former Yugoslavia, and moved with her family to the United States when she was in middle school. Having gravitated toward math and the sciences at an early age, she began her undergraduate college career contemplating a double major in biology and physics.

Considering her eventual path, Bozovic chuckles as she recalls shying away from biology.

“I didn’t like all the memorization in biology,” she said. “In physics, you do problem sets and just try to figure things out. I thought I was better at that.”

During graduate studies, Bozovic began to move toward biophysics, and as she set out on her postdoctoral training, Bozovic found her unusual niche.



“For someone with an interest in both physics and neuroscience, I felt that sensory detection was a place where there is an overlap and a role for a physicist to make a contribution,” she said. “And the study of hearing, in particular, is such an open field in which the analysis of how cells work involves a significant amount of statistical mechanics and non-linear dynamics, that it lends itself very nicely to a physicist.”

Bozovic began delving into how hair cells amplify incoming signals. In particular, she wanted to determine whether an electrical signal could induce the cells to move in a particular fashion. She found that indeed it can, leading her to propose modifications to the existing model of how the auditory system adapts signals—that is, what causes amplification.

Recruited to join the UCLA faculty in 2005, Bozovic has continued to pursue that line of inquiry, while also increasingly turning her attention to the issue of synchronizing of activity by more than one cell: Do hair cells act as individual oscillators or are they connected in their response? Preliminary findings from her current studies suggest that the cells are in fact coupled—and in some systems, to a considerable degree.

If this work succeeds, it could lead Bozovic in an important new direction as she looks into how this coupling occurs and whether the synchronization among the cells explains their sensitivity.

“Rather than looking at the response of one cell in trying to answer these questions about auditory processing, the idea would be to look at the response of the entire ensemble to see whether the system essentially ‘averages’ the response to a sound,” Bozovic said. It’s a line of investigation that could take

her beyond the auditory system to look at other biological systems.

Bozovic also hopes to take her work to the next level of processing, by examining how the fibers of auditory nerves encode information. The major question there relates to timing—how the system responds with such rapid precision to gather sound. Such studies would move Bozovic even further in the neuroscience direction.

As someone drawn to research that crosses traditional disciplinary boundaries, Bozovic was also attracted to UCLA by the intellectual exchange and collaborative opportunities in several campus departments, as well as to the California NanoSystems Institute, where she is a member.

“UCLA has both a very strong physics department and a very strong medical school,” she said, “along with an environment that encourages meaningful collaboration between physicists and biologists.”

Already, the environment has borne fruit: Bozovic began working with colleagues within her department who are involved in bioimaging, and their group has grown to include collaborators from the medical school.

“We’ve gotten to test new imaging devices that are state of the art,” she said. “I’m enjoying the techniques as much as I’m enjoying pursuing the questions.”

While it’s true that not many physicists are engaged in neuroscience research, Bozovic points out that certain fields within neuroscience are moving toward measurements or theories that require elaborate computations, and thus stand to benefit from the participation of physicists and mathematicians.

“If you take any scientific discipline, there’s a good chance that it’s overlapping with another discipline and that there’s a new field emerging there,” Bozovic said. “And in general, to me a sign of a dynamic place is one where that blurring of disciplinary lines is first occurring.”

Little is yet known about the function of “hair cells”—the highly sensitive cells in the inner ear that convert low-intensity sounds into hearing. Bozovic hopes to unravel some of the basic mechanisms governing one of the least understood of our senses.

Generations of Exclusion

The revival of a 40-year-old research project has resulted in the most comprehensive sociological report ever produced on the integration of Mexican Americans.

In 1992, construction workers completing the upgrade of Powell Library at UCLA found boxes of questionnaires completed in the 1960s by participants in a study of Mexican Americans. The study, published in 1970 as the book, *The Mexican-American People*, was the first in-depth sociological work of its kind.

The files, rescued from the depths of Powell Library, were turned over to UCLA sociologists Edward Telles and Vilma Ortiz, who pored over the questionnaires and recognized a unique opportunity to examine how the Mexican American experience had evolved in nearly four decades since the first study.

Ortiz, Telles and their team re-interviewed nearly 700 original respondents and 800 of their children. The result is *Generations of Exclusion: Mexican Americans, Assimilation, and Race*, a book that brings the study into the 21st century as the most comprehensive sociology report on the integration of Mexican Americans.

Telles and Ortiz, examined various markers of integration among Mexican Americans in Los Angeles and San Antonio,



"History of Highland Park," a 1977 mural painted on the wall of the Los Angeles neighborhood's Pacific Telephone building by Judith Baca, professor in the César E. Chávez Department of Chicana and Chicano Studies, is the cover image of the new landmark study of Mexican Americans by UCLA sociologists Edward Telles and Vilma Ortiz. ("History of Highland Park" by Judith F. Baca, 1977 © SPARC www.sparcmurals.org)

including educational achievement, economic advancement, English and Spanish proficiency, intermarriage, residential integration, ethnic identity and political involvement.

“The study contains some encouraging findings, but many more are troubling,” said Telles.

“Linguistically, Mexican Americans are assimilating into the mainstream quite well, and by the second generation, nearly all Mexican Americans achieve English proficiency.”

“However,” said Ortiz, “institutional barriers, persistent discrimination, punitive immigration policies, and a reliance on cheap Mexican labor in the Southwestern states have made integration more difficult for Mexican Americans.”

The 1970 research found little assimilation among Mexican Americans, even those who had lived in the United States for several generations. The new study found that second-, third- and fourth-generation Mexican Americans speak English fluently, and most prefer American music. They are increasingly Protestant, and some may vote for Republican candidates.

But Telles and Ortiz were surprised to find that the third and fourth generation in the current study had not achieved more gains, particularly in the educational arena. Many Mexican Americans in these later generations do not graduate from college, and they continue to live in majority Hispanic neighborhoods. Unlike the descendants of European immigrants to the United States, Mexican Americans have not fully integrated by the third and fourth generation.


In the research—funded by the National Institute of Child Health and Human Development; the Ford, Rockefeller, Russell Sage, and Haynes foundations; the UCLA Chicano Studies Research Center; and UC and UCLA sources—Telles and Ortiz noted that some Mexican Americans were able to move into the mainstream more easily than other minorities. Mexican immigrants who came to the United States as children and the children of immigrants tended to show the most progress, perhaps spurred by optimism and an untainted view of the American Dream.

“A disproportionate number, though, continue to occupy the lower ranks of the American class structure,” wrote the sociologists. “Certainly, later-generation Mexican Americans and European Americans overlap in their class distributions. The difference is that the bulk of Mexican Americans are in lower classes but only a relatively small part of the European American population is similarly positioned.”

More than any other factor, Telles and Ortiz said, education accounted for the slow assimilation of Mexican Americans in most social dimensions.

“Limited schooling locks many of them into a low socioeconomic status,” they wrote. “Low levels of education also predict lower rates of intermarriage, a weaker American identity, and a lower likelihood of registering to vote and voting.”

Telles and Ortiz believe that a “Marshall Plan” that invests heavily in public school education will address the issues that disadvantage many Mexican American students.

“For Mexican Americans, the payoff can only come by giving them the same quality and quantity of education as whites receive,” they said. 



Sociologists Vilma Ortiz and Edward Telles: “The study contains some encouraging findings, but many more are troubling.”

Key findings from “Generations of Exclusion” include:

The educational levels of second-generation Mexican Americans improved dramatically. But the third and fourth generations failed to surpass, and to some extent fell behind, the educational level of the second generation. Moreover, the educational levels of all Mexican Americans still lag behind the national average.

Mexican Americans attained higher levels of education when they knew professionals as children, when their parents were more educated, and when their parents were more involved in school and church activities. Those who attended Catholic schools were much better educated than those who attended public schools.

Economic status improved from the first to second generation but stalled in the third and fourth generation. Earnings, occupational status, and homeownership were still alarmingly low for later generations. Low levels of schooling among Mexican Americans were the main reason for lower income, occupational status and other indicators of socioeconomic status.

First-generation Mexican Americans were about 90 percent Catholic. By the fourth generation, 58 percent were Catholic.

Intermarriage increased with each generation. Only 10 percent of immigrants were intermarried. In the third generation, 17 percent were married to non-Hispanics, as were 38 percent in the fourth generation.

Adult Mexican Americans in the third and fourth generation lived in more segregated neighborhoods than they did as youths. This was due to the high number of Latinos and immigrants moving into these neighborhoods, the researchers said.

Most Mexican Americans identified as “Mexican” or “Mexican American,” even into the fourth generation. Only about 10 percent identified as “American.” Moreover, many Mexican Americans felt their ethnicity was very important and many said they would like to pass it along to their children.

Third- and fourth-generation Mexican Americans supported less restrictive immigration policies than the general population and generally supported bilingual education and affirmative action.

In the 1996 presidential election, 93 percent of first-generation Mexican Americans voted Democratic. The percentage of Democratic voters declined in each subsequent generation. By the fourth generation, 74 percent voted Democratic.

Luisa Iruela-Arispe studies the growth of blood vessels to learn how controlling their development can stop humanity's most pervasive diseases.

How to Tame a Killer

By Stuart Wolpert

For Luisa Iruela-Arispe, her search for answers to fundamental questions about the biology of blood vessels requires a balance between basic science and applied research.

Iruela-Arispe is interested in both understanding the basic functioning of blood vessels, and then using that knowledge to treat some of the deadliest diseases that affect human beings.

"It's very difficult to solve problems out of the blue—I like to approach disease questions by first understanding normal developmental processes," said Iruela-Arispe, a professor of molecular, cell and developmental biology and director of the Cancer Cell Biology program at UCLA's Jonsson Cancer Center.

"Half of my laboratory works on basic developmental questions, and the other half works on clinical matters, often collaborating with physicians," she said. "We need to understand the body's machinery to interfere with it when it goes wrong. We go back and forth—that cross-talk is fascinating."

Iruela-Arispe's work focuses on studying how blood vessels form, and how to increase or suppress their growth during disease. Heart attacks, the number one cause of death in the United States, are frequently caused by the obstruction of a blood vessel. One could call it a plumbing problem rather than a pump problem; the heart attack is a consequence of the blood being blocked from flowing.

"Luisa's research," said life sciences dean Emil Reisler, "explores critical questions in our basic understanding of human physiology, as well as key issues that have implications for current medical treatment."

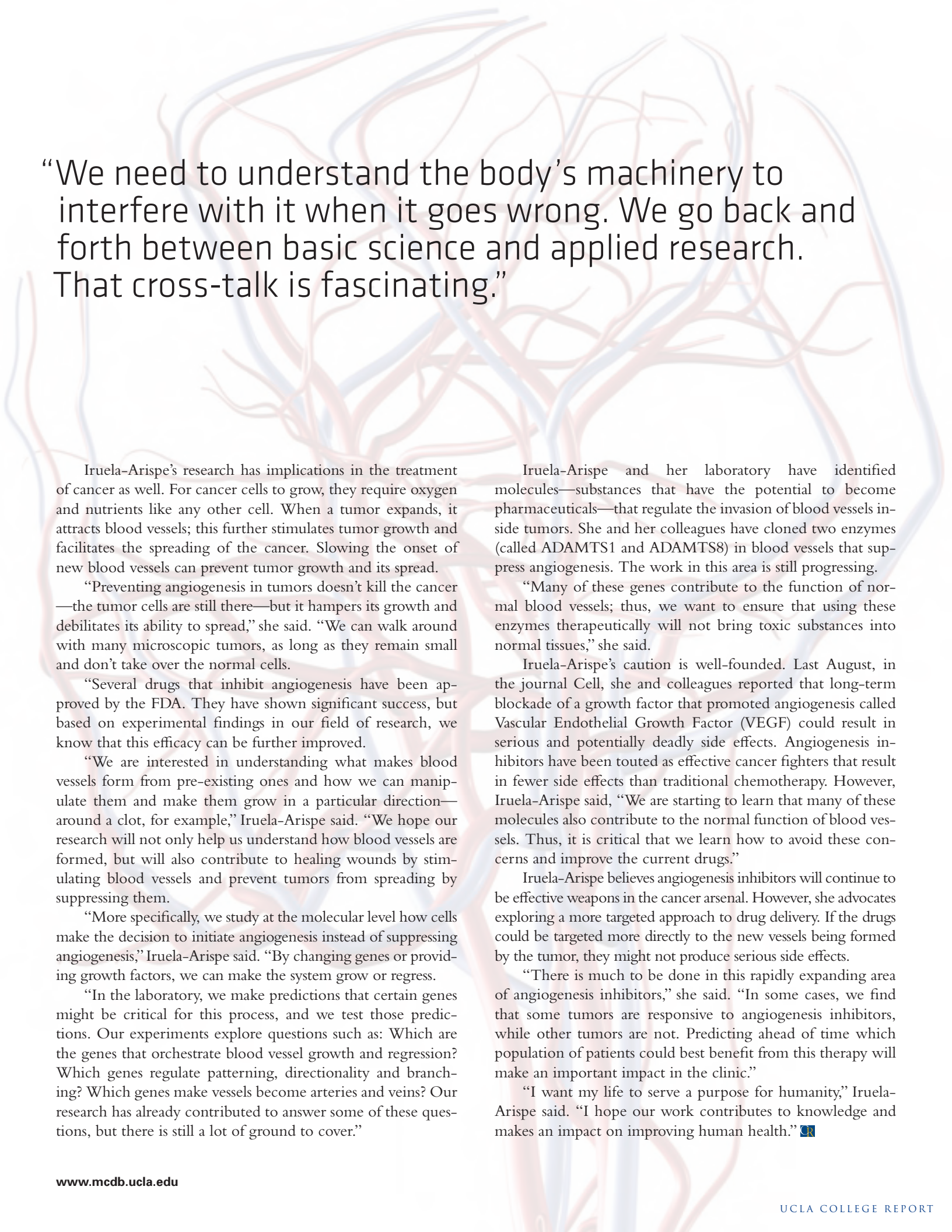
Iruela-Arispe, whose research is funded by the National Institutes of Health, is trying to understand how this killer can be tamed—how an obstruction

can be fixed by intervening to repair this critical plumbing problem.

One option is to try to remove the clot; another is to create a detour around the clot. By forming new blood vessels from existing blood vessels—a process called angiogenesis—a detour can be created to go around a blocked vessel and provide nutrients and oxygen to cells, thus preventing a heart attack.



Luisa Iruela-Arispe: *"We hope our research will not only help us understand how blood vessels are formed, but will also contribute to healing wounds by stimulating blood vessels and prevent tumors from spreading by suppressing them."*



“We need to understand the body’s machinery to interfere with it when it goes wrong. We go back and forth between basic science and applied research. That cross-talk is fascinating.”

Iruela-Arispe’s research has implications in the treatment of cancer as well. For cancer cells to grow, they require oxygen and nutrients like any other cell. When a tumor expands, it attracts blood vessels; this further stimulates tumor growth and facilitates the spreading of the cancer. Slowing the onset of new blood vessels can prevent tumor growth and its spread.

“Preventing angiogenesis in tumors doesn’t kill the cancer—the tumor cells are still there—but it hampers its growth and debilitates its ability to spread,” she said. “We can walk around with many microscopic tumors, as long as they remain small and don’t take over the normal cells.

“Several drugs that inhibit angiogenesis have been approved by the FDA. They have shown significant success, but based on experimental findings in our field of research, we know that this efficacy can be further improved.

“We are interested in understanding what makes blood vessels form from pre-existing ones and how we can manipulate them and make them grow in a particular direction—around a clot, for example,” Iruela-Arispe said. “We hope our research will not only help us understand how blood vessels are formed, but will also contribute to healing wounds by stimulating blood vessels and prevent tumors from spreading by suppressing them.

“More specifically, we study at the molecular level how cells make the decision to initiate angiogenesis instead of suppressing angiogenesis,” Iruela-Arispe said. “By changing genes or providing growth factors, we can make the system grow or regress.

“In the laboratory, we make predictions that certain genes might be critical for this process, and we test those predictions. Our experiments explore questions such as: Which are the genes that orchestrate blood vessel growth and regression? Which genes regulate patterning, directionality and branching? Which genes make vessels become arteries and veins? Our research has already contributed to answer some of these questions, but there is still a lot of ground to cover.”


Iruela-Arispe and her laboratory have identified molecules—substances that have the potential to become pharmaceuticals—that regulate the invasion of blood vessels inside tumors. She and her colleagues have cloned two enzymes (called ADAMTS1 and ADAMTS8) in blood vessels that suppress angiogenesis. The work in this area is still progressing.

“Many of these genes contribute to the function of normal blood vessels; thus, we want to ensure that using these enzymes therapeutically will not bring toxic substances into normal tissues,” she said.

Iruela-Arispe’s caution is well-founded. Last August, in the journal *Cell*, she and colleagues reported that long-term blockade of a growth factor that promoted angiogenesis called Vascular Endothelial Growth Factor (VEGF) could result in serious and potentially deadly side effects. Angiogenesis inhibitors have been touted as effective cancer fighters that result in fewer side effects than traditional chemotherapy. However, Iruela-Arispe said, “We are starting to learn that many of these molecules also contribute to the normal function of blood vessels. Thus, it is critical that we learn how to avoid these concerns and improve the current drugs.”

Iruela-Arispe believes angiogenesis inhibitors will continue to be effective weapons in the cancer arsenal. However, she advocates exploring a more targeted approach to drug delivery. If the drugs could be targeted more directly to the new vessels being formed by the tumor, they might not produce serious side effects.

“There is much to be done in this rapidly expanding area of angiogenesis inhibitors,” she said. “In some cases, we find that some tumors are responsive to angiogenesis inhibitors, while other tumors are not. Predicting ahead of time which population of patients could best benefit from this therapy will make an important impact in the clinic.”

“I want my life to serve a purpose for humanity,” Iruela-Arispe said. “I hope our work contributes to knowledge and makes an impact on improving human health.” 

For “non-traditional” students whose academic careers were interrupted, the challenges of restarting their studies are lightened with fellowships from the Bernard Osher Foundation and support from the campus.

ON TRACK FOR A Comeback

By Robin Heffler

At 48, Phyllis Covington is hardly a typical undergraduate UCLA student. Covington took a long and winding road before coming to campus as a junior in 2007.

Now an African-American Studies major, Covington had put her dreams of getting a college degree on hold while she simultaneously worked and raised three children—sons who are all enrolled in college now. Over nearly 30 years, Covington attended several community colleges at various times, and five years ago, she received an A.A. degree from Santa Monica College, where she works as a part-time counselor’s assistant.

But it took a boost from a UCLA program for Covington to see a bachelor’s degree as finally within her reach. She is among 20 undergraduates each year whose interrupted higher education careers have been revived with the help of Osher Reentry Scholarships.

“The scholarship has helped tremendously,” said Covington. “It has taken a weight off my shoulders, and I’ve been able to devote more time to my studies. I’m proud to be an honor student now. At the same time, being an older student sometimes is a little overwhelming. So the occasional counseling I receive from the program has helped me to stay on track academically and keep up my morale.”

Funded by the Bernard Osher Foundation, the one-year, \$5,000 scholarships are intended for students between 25 and 50 years of age who have experienced a cumulative gap in their education of five or more years, are pursuing their first baccalaureate degree, demonstrate financial need, and show academic promise and a commitment to obtaining their degree.

Students who qualify for the Osher Scholarship in their junior year, maintain a 3.0 GPA, and complete 45 units, are eligible for matching funds during their senior year through UCLA’s Returning Student Scholarship Program.

“Osher fellows are some of the hardest working students because they most want to be here and get a degree,” said Alfred Herrera, director of the Center for Community College Partnerships and a member of the committee responsible for selecting qualified students, many of whom are community college transfer students. “The scholarship alleviates pressure. For students who may be juggling parenthood with work and studies, it has allowed them to cut their work hours in half, so that they can focus on their academic work.”



Phyllis Covington: “I’m proud to be an honor student now. When I walk on the campus, I feel like I’m home.”

Growing up in Carson, Rolando Ruvalcaba, 30, said no one in his family had earned a higher education degree, and he never felt compelled to go to college.

"I didn't enjoy school because there were so many distractions—like worrying about being harassed by gangs," he said. "There was conflict not only between members of my own ethnic group—I'm Mexican-American—but also with other ethnic groups."

A 1996 high school graduate, Ruvalcaba worked for nine years, eventually becoming manager of a toy store.

"I decided to go to college because I felt that my life was not going anywhere," Ruvalcaba said. "I not only wanted to better myself financially but better my mind as well."

With a 3.8 GPA at El Camino College, he was accepted to UCLA and entered last summer. An English major and education minor who said he has been inspired both by his professors and what he has learned from literature, Ruvalcaba is weighing whether to become a teacher or a lawyer.

"Without the scholarship, there would be a lot of bills that I'd worry about being able to take care of," said Ruvalcaba, who works part-time on campus as an audiovisual technician. "I would have to work more and my studies would suffer."

Judith L. Smith, dean and vice provost of undergraduate education, who earmarked scholarship funds from the Division of Undergraduate Education for the reentering students' second year, said that "Returning students are part of a group of non-traditional undergraduates who are older, often single parents, and have overcome a number of obstacles just to get to UCLA. We've set up a series of connections for them that will enhance their chances of being successful. The Osher Fellowship is only the first step."

Another aspect of the program, Smith explained, is sharpening students' research skills.

"We've attached a requirement that they conduct research in an area of their choice related to their own experiences in education," Smith said. "We also want to introduce them to research in a productive way, and encourage them to enroll in an entry-level research course or independent study research course, where they have a faculty mentor. Another opportunity is community or corporate internship courses, to which they can tie in research."

Covington's research grows out of what she calls her "eye-opening" experience as the mother of three African-American males who display various objects of art, writing, and signs on

"Non-traditional undergraduates are older, often single parents, and have overcome a number of obstacles just to get to UCLA. We've set up connections for them that will enhance their chances of being successful. The Osher Fellowship is only the first step."

their bodies. She is examining the role that tattooing plays in the lives of African-American males, ages 16 to 25, taking an historical view: the ancient voluntary practice among African cultures, the involuntary branding throughout the period of slavery, and the voluntary practice of tattooing among current suburban dwellers living a conventional and often times a privileged lifestyle, and thereby creating a new discourse on identity.

In addition to UCLA, the Osher Foundation awards scholarships to returning students at 58 other colleges and universities nationwide. Several of these educational institutions have been asked to apply for and have been granted a \$1-million scholarship endowment. UCLA was named as one of them, and perpetual funding from the endowment will begin in fall.

With the endowment, the academic support available to reentry scholars will be expanded.


"We plan to offer a one-unit Fiat Lux seminar, which will bring the Osher fellows together to understand the adjustment process for reentry students, the services available to them, and help them bond as a group," said Betty Glick, associate vice provost for undergraduate education, who is responsible for the Osher Scholarship Program on campus, and will teach the seminar in the Winter 2009 quarter in cooperation with the UCLA Center for the Study of Women and Men.

The center's director meets with students regularly to assess their academic progress and assure that they can find research projects or internships. Students also will be tracked by the UCLA Scholarship Resource Center, to make sure they get the non-academic resources they need.

Reentry students not only benefit from the various features of the program and their time at the university, Smith noted, but they also make a significant contribution.

"Returning students bring life experiences, which in turn bring different perspectives that add to the education of all the students in their classes," Smith said.

For Phyllis Covington, graduating next year will not be the end of her educational journey. She plans to pursue a graduate degree, though she has yet to decide her area of focus. There is no doubt, however, about how far she has come.

"I always felt that I could achieve, but being an Osher Fellow really boosted my confidence, and I feel obligated to do well because of receiving the scholarship," she said. "I'm very proud of getting this far. When I walk on the campus, I feel like I'm home." 

Pinpointing Performance in the Brain

An award-winning graduate student in psychology creates new understanding of the complex and confounding issues surrounding schizophrenia.

By Aaron Dalton

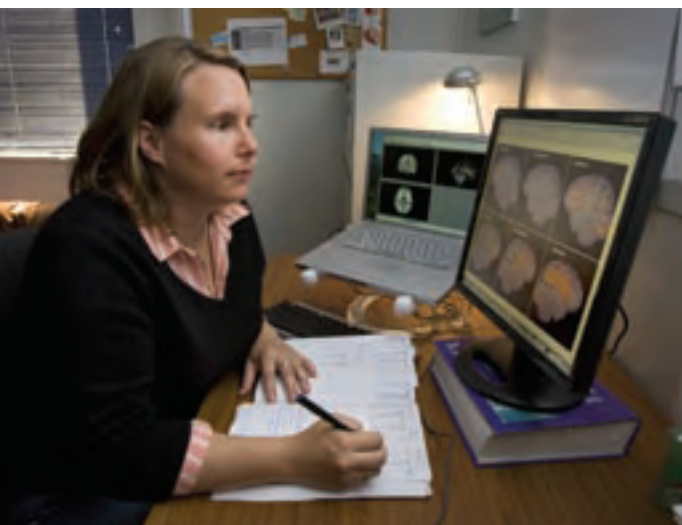
It has happened to all of us—in the middle of a conversation, you find yourself distracted by unrelated thoughts and suddenly realize you have lost track of everything that was just said.

For most people, such moments of conversational confusion occur only occasionally. For people with schizophrenia, they can be troublingly commonplace. Schizophrenia is a spectrum disorder, meaning that patients can exhibit a wide range of symptoms that vary in severity.

In UCLA's Department of Psychology, researchers like post-doctoral fellow Katie Karlsgodt are using advanced medical imaging tools to gain a better understanding of this disorganization of thought that afflicts those with schizophrenia.

"There are many new tools and techniques in the world of cognitive neuroscience, but the newest tools are typically used to investigate brain function in healthy people," said Karlsgodt. "I think it's interesting to take these techniques and apply them to psychiatric disorders."

Broadly speaking, the symptoms of schizophrenia fall into two categories: positive and negative. Positive symptoms include paranoia, delusions, hallucinations, and disorganized thought. Individuals with negative schizophrenic symptoms are withdrawn, exhibit little emotional expression, and may have little social interaction. People with schizophrenia can also have cognitive deficits, like disruptions in memory and attention.



Katie Karlsgodt, winner of the dissertation award from the New York Academy of Sciences. "Katie's work is distinctive," said her post-doctoral advisor J. David Jentsch, "because it represents an effort to directly tie the behavioral signs of a mental disorder to its underlying biology."

The tool that plays the biggest role in Karlsgodt's research is the functional magnetic resonance imaging (fMRI) machine. Medical doctors often rely on the powerful magnetic fields produced by regular MRI machines to create detailed pictures of soft body tissues for a variety of diagnoses, such as to pinpoint the precise size and location of a tumor before surgery.

By contrast, fMRI scans rapidly and repeatedly scan the brain every few seconds in order to identify and measure neural activity.

"An fMRI scan measures changes in blood flow, not just brain structure," said Karlsgodt. "You can see which areas of the

"There are many new tools and techniques in the world of cognitive neuroscience, but the newest tools are typically used to investigate brain function in healthy people. I think it's interesting to take these techniques and apply them to psychiatric disorders."



brain are active and how the activity in one area of the brain relates to activity in another.”

In her research, Karlsgodt focuses on the relationship between behavior and brain activation among schizophrenic and non-schizophrenic patients. Both groups of patients lay inside fMRI machines wearing computer goggles. Through the goggles, Karlsgodt and her fellow researchers administered a simple test designed to measure verbal working memory—the short-term memory that helps us follow conversations or briefly remember bits of information like phone numbers.

On screens in the goggles, the patients viewed sets of letters. They were then shown another letter and asked to identify whether the letter had been part of the set they had just seen. Meanwhile, the fMRI machine measured activity in the frontal cortex, a region of the brain associated with this sort of working short-term memory.

Previous studies had delivered conflicting results on whether patients with schizophrenia performing these sorts of verbal short-term memory tasks had more or less frontal cortex brain activity than non-schizophrenic control patients. Karlsgodt broke new ground by looking at the issue from a new perspective—treating the patients with schizophrenia not as a

monolithic group, but rather as a population of individuals.

Karlsgodt realized that it was not the amount of brain activity that distinguished patients with schizophrenia from the control group, but rather the way patients’ brain activation related to memory performance.

In most people, fMRI shows that when patients without schizophrenia perform well on the verbal working memory test, their brain activity goes down. If they perform poorly, their brain activity tends to go up.

“If the task is easy and you are performing well, you don’t need to activate your brain very much,” said Karlsgodt. “If the task is harder for you, you compensate by activating more.”

People suffering from schizophrenia exhibit the opposite pattern. High performers had hyperactive frontal cortices. Low performers showed little frontal cortex activity. Karlsgodt interprets the data to mean that even patients with schizophrenia who performed well on the working memory task had to really concentrate and focus to maintain their performance. Those who performed poorly simply could not activate their brain enough to compensate for the difficulty they faced.

Karlsgodt’s work, carried out in the UCLA Clinical Neuroscience Laboratory under the mentorship of psychology professor Tyrone D. Cannon, has attracted attention in the scientific community. The New York Academy of Sciences recognized Karlsgodt’s research with its prestigious James McKeen Cattell Distinguished Dissertation Award.

The award enhances the UCLA Psychology Department’s reputation as a center of important graduate student research. Karlsgodt becomes the ninth Ph.D. student from the department to win this national dissertation award since 1980.


“Katie’s work is distinctive because it represents an effort to directly tie the behavioral signs of a mental disorder to its underlying biology,” said J. David Jentsch, associate professor of psychology and Karlsgodt’s post-doctoral advisor.

“Mental disorders have typically been difficult to study or treat precisely because they have few, if any, clear biological determinants. However, Katie helps to bring the behavioral and the neurobiological together.”

Karlsgodt is now working as part of the Neurogenetics Affinity Group at UCLA’s Semel Institute for Psychiatry and Biobehavioral Sciences, studying sets of twins to learn more about the genetic component of schizophrenia. Her findings indicate that non-schizophrenic siblings share the same fMRI response patterns as their twins who do have schizophrenia.

“Katie’s work will be instrumental in helping us take the next big step in the treatment of schizophrenia when we have the ability to forecast the onset of the disorder through measurements of biological mechanisms,” said Jentsch.

One day, Karlsgodt’s research findings may help psychiatrists improve treatment options for people with schizophrenia; fMRI tests could become standard tools in figuring out which drug regimens will work best for particular schizophrenics.

“We know there is diversity among patients with schizophrenia, but we need ways to quantify this diversity,” said Karlsgodt. “These findings could be used to help distinguish subgroups of patients who would respond better to different kinds of treatments.” 

The Challenge for China

Richard Baum explores the conflicts and questions that rage in China over Tibet, human rights, and the prospects for change.

Since the People's Republic of China occupied Tibet in 1950, Tibetans have fought for their cultural and political freedom. Fierce anti-Chinese riots erupted in the Tibetan capital of Lhasa last March, and since then Tibetans and supporters around the world have taken to the streets to protest China's hosting of the Olympics.

Never before has the so-called "Tibet Question" captured the international spotlight as it has now. Tibet has been closed off to visitors and several Western leaders have issued calls for boycotting the opening day of the Olympic Games. Richard Baum, a professor of political science with long experience teaching and conducting research in China, talked to writer Ajay Singh about the issues confronting that country as it deals with Tibet and its exiled spiritual leader, the Dalai Lama.

Was the West being romantically optimistic when it expected China to allow greater political liberalization and human rights because it is hosting the Olympics?

There was a certain historical precedent. After all, in 1988, with the Seoul Olympics coming, the regime there did open up and democratize. So there was an expectation that the 2008 Olympics might do the same thing for China. The interesting thing is that the Chinese were aware of that expectation and played into it. The Beijing Olympics Committee made a point of saying that they would use China's Olympics bid to help their development, their human rights, and democracy.

Under which circumstances might Beijing permit greater freedom?

As the government in Beijing feels more confident in its progress, its ability to satisfy human needs and wants, I think it will begin to relax what you might call its pathological demand for stability and unity. Ever since the 1989 Tiananmen disturbances and the crackdown that followed, the Chinese leadership has been terrified of unrest and its potential for destroying everything they've ever created. So they tend to overreact to anything that smacks of political unrest.



But isn't one interpretation also that the Chinese just cannot stand perceived humiliation?

Absolutely. Along with China's descent in the 19th century from a great global power into the doormat of Asia, came a sense of humiliation and resentment. There's always been a love-hate relationship between China and the West. The idea that you can publicly humiliate China and expect them to change their policy is unrealistic in the extreme, because of their sensitivity to slights, cultural and national. There's even a name for it in Chinese—the guochi syndrome, or the national humiliation syndrome.

When you look at the recent reaction to the Western criticism of China, most Chinese are feeling very patriotic about defending their government. They feel that the West is using this as a way of punishing China and are very angry at the West for stirring up this kind of a storm. And of course they are very intolerant toward the Tibetans, who they see as having manipulated the situation to China's disadvantage.

Why is Beijing frustrated about Tibet?

They were over a barrel about Darfur and Myanmar when Mia Farrow called these the 'Genocide Olympics.' Then, just as they were making some headway in Myanmar and Sudan, Tibet blew up on them. And they didn't know how to deal with that. At first, they just sat on their hands when there were peaceful protests for a day or two. Then the protests started turning violent and the overreaction occurred.

How does Beijing view the Dalai Lama?

The Chinese are tone deaf when it comes to the Dalai Lama. They simply cannot deal with him. And it's doing them no good because they can say that he is calling for indepen-



Photo: Corbis

dence and instigating violence and terror, but the truth is that it is not him who is doing that but radical elements in the Tibetan community who are angry and impatient with Chinese rule. To blame the Dalai Lama as an instigator is absurd. He is what he seems—a man of peace and reconciliation. And he’s asking for autonomy, not independence. And the Chinese can’t hear that.

How is the Dalai Lama handling the crisis?

He’s caught between a rock and a hard place. There are militants who are constantly pushing him to stand up to the Chinese, but on the other hand there is his Western audience, which expects him to be a man of peace, meditation, reconciliation, and justice. I think that’s who he really is, but I don’t think he can satisfy everybody.

Some pundits say the Dalai Lama is politically naive and that China has used his failures to great effect over the years.

I think there is some truth to that. The Dalai Lama has allowed himself to be used on both sides of the issue. Hollywood has used him in a way that I find not very pleasant—the Hollywoodization of Tibetan Buddhism is not a real image. And by the way, the Tibetan governance before the Communists came to power in 1950 was not all that benign. It certainly wasn’t democratic. It was very hierarchical, a very primitive kind of serfdom, with a lot of wealth among the monastic elite and a lot of poverty among everybody else.

Why are there so many unresolved issues between the Chinese and Tibetans?

The Chinese don’t know how to respond to the Tibetans. For one thing, they can’t acknowledge any problems with their governance techniques in Tibet. There’s such insecurity since Tiananmen among China’s governing elite that they can’t ad-

mit any wrongdoing or mistake at all. Their thinking is that if they give the Tibetans an inch they’ll take a mile.

What’s the Chinese game plan in Tibet?

They’re trying to outlive the Dalai Lama—they would like him to die in exile so that they can manipulate a successor.

What do you make of a spiritual leader who heads a government in exile?

That’s the problem—he’s a god-king in Tibetan Buddhism, but they don’t have god-kings in the secular world any more.

What do you see as the major failings of the Chinese leadership?

Three decades of rapid economic growth has allowed them to kick the can of political reform farther and farther down the road. They’ve had a cushion because of all this economic growth. Compare Peking University in 1989 with Peking University four years later, when I taught there. By 1993, the students in Beijing were all about opportunities, careers, money. Three years ago, I taught a course at Peking University, and the students were still all about money and status and careers, leading everything but a political life. The lack of any real political protests by students has given the government a sense that it can get by with mere administrative fine-tuning rather than real structural reform.

What about the argument that China needs to be guided by a firm hand that pushes economic reform while holding together a huge and culturally-diverse nation?

The authoritarian mentality that drives the Communist Party is incompatible with what I would call the chemistry of a pluralistic society. There’s a great deal of personal freedom in China today—but freedom stops at the edge of politics. The Chinese leadership has continued to try to control social life, organizational life, mass media, public opinion—without allowing any healthy divergence of opinion and interests. [Q](#)



Richard Baum: “As the government in Beijing feels more confident in its progress, its ability to satisfy human needs and wants, I think it will begin to relax what you might call its pathological demand for stability and unity.”

In Their Own Words



Jamie Zimmerman
Senior, Anthropology

Inspired by the feats of my role models, and humbled by their altruism, I have always been eager to make an impact in my community.

After fifth grade, I dedicated my summer to community service. I volunteered with organizations that brought the performing arts to inner-city populations.

After my freshman year of college, I lived and worked in the Peruvian Amazon basin in the tiny village of Santa Rosa. Collaborating with a local agency, I performed English-Spanish translation and helped build a training center for health providers from outlying villages. Most days were filled with grueling work. However, when I sat down to an evening meal, surrounded by community members, I felt at home.

The closeness we shared made it even more challenging to grapple with the region's severe poverty. What struck me was the lack of access to medical care. I soon learned that many people in this region die of diseases that are easily treatable.

This experience opened my eyes to day-to-day life in the developing world and helped me refine my future goals. After witnessing first-hand the dramatic impact of this public health network, I knew beyond doubt that I wanted to deliver healthcare to marginalized communities. I applied for and gained early acceptance to medical school.

While my successes have been exhilarating, it is the challenges that have most strengthened my character. Growing up, my family frequently faced financial hardship and, at times, endured homelessness. Additionally, I was raised in an extremely abusive environment. Although difficult, this background has instilled me with a sense of determination, a passionate desire to make a difference in the lives of others, and a unique opportunity to lead by example. Difficulties faced in the developing world may be daunting, I believe they can also be a unifying force that invigorates us to work together toward a future of less suffering.

Brian Duisttermars

Graduate Student

Molecular, Cellular and Integrative Physiology

My curiosity for basic scientific research began as an undergraduate, and has expanded immensely since arriving at UCLA. The highly collaborative atmosphere encourages me to continue on to a career in academia. My goal is to someday run my own lab and inspire students the way my advisor and the senior post-docs in my lab have inspired me.

Working toward that goal, I have had the opportunity to mentor an undergraduate as he carries out his own independent research project. With my guidance he has recently obtained his own competitive fellowship funding, delivered a carefully prepared, informative and effective research presentation, and has been invited to present his work at a national meeting. I also had the opportunity to be a teaching assistant for an undergraduate course in animal physiology last year. Sharing my enthusiasm for basic research in physiology with fellow students and seeing that enthusiasm reciprocated has proven to be an extremely rewarding experience. I am teaching another course and hope to make it even better.

Another aspect of graduate school at UCLA that I particularly enjoy is recruiting. As a recruit, I truly appreciated the insight and advice I received from experienced graduate students during recruitment events. Now I am fortunate to get to share my experiences with up-and-coming graduate students, to share my excitement for the labs and programs at UCLA, and to describe my own research to those who are unsure of their specific research interests.

I believe the experience and gratification I have received from teaching, recruiting and conducting scientific research at UCLA is invaluable to me becoming an innovative, productive scientist and an effective and caring mentor.





The winners of the 2008 Charles E. and Sue K. Young Undergraduate and Graduate Awards describe the many paths that led to their stellar achievements

Lorena Castro Senior, Sociology

Growing up in South Los Angeles has had a tremendous impact on how I perceive the world as well as on my own goals and aspirations. I witnessed my parents, Mexican immigrants, working long days in order to provide for my brother and me.

Living in this poor neighborhood meant that we attended inadequately funded schools. To provide me with better educational opportunities, my parents decided to voluntarily have me bussed to a better school. Every day I rode a bus for 35 miles.

As a transfer student to UCLA, my exposure to research began when I became a research assistant for Mark Sawyer in the Department of Political Science. Dr. Sawyer encouraged me to apply to the McNair Research Scholars Program. As a McNair Scholar, I received funding to work on an independent research project under the mentorship of Dr. Sawyer and Dr. Edward Telles.

My research focuses on the identity formation of second-generation youth in South Los Angeles. Demographic shifts in the community have increased the interaction among many second-generation youth, who despite having various identity options, have chosen Mexican identity as their primary identifier. Thus, the interaction with peers has been fundamental to the development of this identity. While many scholars have studied the impact of peer groups in such areas as academic performance, they have not acknowledged the influence of peer groups in the development of an ethnic identity. As a result, my study examines this important, yet often overlooked factor in ethnic identity formation. To conduct this study, I interviewed youth ages 18-22 of Mexican descent in this neighborhood.

When I complete my Ph.D., my goal is to work at a research institution where I will be able to produce research that will inform the policies that will positively impact the lives of inner-city youth.

Michelle Mahanian Senior, Neuroscience

The opportunities available at UCLA have allowed me to develop and combine my passions for music, medicine, and public service, and helped me to become an active contributor to the university and the surrounding community.

As a volunteer for the UCLA Medical Center, my conversations with chronically ill patients made me realize the profound emotional drain caused by long-term hospitalization. With each visit, I wished there was something more than my compassion that I could use to bring vibrancy and warmth back into these patients' lives. In 2004, I used my background playing the piano and flute to create the volunteer organization, Music to Heal, through which I arrange for student musicians to bring music into the lives of hospital patients.

Since then, Music to Heal has grown to include many UCLA students. This year, I began working with the UCLA Mattel Children's Hospital to develop a pediatric music program for patients. I have raised more than \$11,000 from the Strauss Foundation and other groups to purchase musical instruments for the children's hospital. Volunteers from Music to Heal provide weekly music lessons as therapy to young patients. With each event, I see the effects of music in the warm smiles and brightened faces of patients and their families.

These experiences have motivated me to explore patient care beyond the emotional, and to study the clinical and research aspects as well. For the past three years, I have been conducting research in the UCLA School of Medicine, investigating a diagnostic test and potential treatment for Alzheimer's disease. This resulted in publications for which I am co-author. Humbled by the strength of patients facing great hardships, I hope to become a physician capable of healing patients both emotionally and physically.



Kimberly Robertson

Graduate Student

American Indian Studies and Women's Studies

Throughout my journey on the road to academic achievement, I have learned to analyze the power structures and institutional policies that have shaped my educational experiences, just as they have shaped those of other marginalized peoples. These explorations and understandings have propelled my educational commitments and research interests.

For example, the objective of my M.A. thesis is to broaden the narrative of sexual and domestic violence as it affects American Indian women. Statistics have shown, and Native women concur, that American Indian women face sexual and gender violence at a disproportionate rate. One out of every three Indian women will be raped in their lifetimes; seven out of every 1,000 Indian women will be physically assaulted, and from 1979 to 1992, homicide was the third leading cause of death of Indian females ages 15 to 34.

Fortunately, Native women's advocates were already mobilizing around this issue at a variety of community, state, national, and international levels. Since the 1970s, there has been a proliferation of Indian advocacy programs, tribal codes, and protection order processes, and even the establishment of Native shelters to address these issues. Unfortunately, though, most of this mobilization has been either marginalized or altogether ignored by mainstream communities, and this work has gone unnoticed and often undocumented.

The objective of my master's thesis is to both *rewrite* and *reright* the position of Native women in history by broadening narratives of mobilization against sexual and domestic violence with the inclusion of our voices. My project also intends to articulate the activism and organizational strategies that Native women have employed to combat these realities in their communities in order to update and edit the historical record.



Darby Saxbe

Graduate Student, Psychology

I study stress, health, and close relationships. I am interested in how nature and nurture intersect—how early experiences shape the development of physiological stress responding, and how stress responding styles influence interactions within couples and the family environment.

My research focuses on stress psychology (particularly the hormone cortisol) and how other types of physical health issues are measured within marriages and families. While psychology has often focused on the individual, I am mindful of John Donne's observation that "no man is an island." Humans have evolved to exist within relationships, and we are embedded in a social web with effects on our psychological well-being and physical health. Close relationships can improve or aggravate stressful experiences, creating opportunities for conflict and frustration, or restoration and support. My research seeks to trace the influence of a variety of relationships on health and well-being.

Most of my current research projects incorporate the hormone cortisol, which is secreted in response to threat or challenge. Cortisol has been implicated in the functioning of our immune systems, weight gain, aging, and progression of disease. While extensive research has already measured the cortisol response to stress produced in the laboratory, relatively few published studies have tracked cortisol fluctuations in a naturalistic context. Understanding cortisol in everyday life is important to understanding the relationship between chronic stress, coping, and physical health, and should ultimately inform our knowledge of the cause and prevention of stress-related illness.

I have also been active in the UCLA Psychology Clinic, the in-house clinic housed in the Department of Psychology. In addition to conducting therapy with my own clients, I have mentored beginning clinical students as a volunteer supervisor. I have also traveled twice to the Dominican Republic to participate in medical volunteer trips and am making plans to return for a third year. [CU](#)



A Scholar's Commitment to Excellence

UCLA scientist-alumna Audree Fowler has endowed a fellowship to support promising graduate students.

Chemist Audree V. Fowler has been a dedicated Bruin for more than 50 years. A talented supporter of the basic sciences, the performing arts, and medicine at UCLA, Fowler again demonstrated her commitment to the College of Letters and Science by establishing a graduate fellowship in protein science, to be administered by the Molecular Biology Institute.

with the Molecular Biology Institute, the UCLA Protein Microsequencing Facility—where she served as director for 15 years—and the Jonsson Comprehensive Cancer Center.

“The sciences gave me a great life,” she explained. “Now I want to help others have access to the same opportunities I enjoyed.”

Although she retired from UCLA in 1999, Fowler remains active in university life. She is an avid Bruin, maintaining her emeriti membership in the Molecular Biology Institute and serving on the board of directors of Women & Philanthropy. She also supports Design for Sharing and is a member of the executive advisory board of the Iris Cantor UCLA Women's Health Center. She volunteers at the Santa Monica Pier Aquarium, where she recently was honored with a “superhealer” award for her service.

The Audree V. Fowler Graduate Fellowship in Protein Science will serve as a fitting testament to Fowler's commitment and dedication to her research and to UCLA. The fellowship will be awarded to promising Ph.D. candidates in the Molecular Biology Institute Interdepartmental Program, as well as in molecular biology and biochemistry in the College of Letters and Science and in biological chemistry in the medical school. The crucial resources provided by the award will advance the education of the Fowler Fellows by enabling them to concentrate on their innovative research.

Professor Steven Clarke, director of the MBI, said, “I'm just delighted to have these fellowships at UCLA associated with Audree's name. They will be a real honor for the student recipients, for Audree, and for the UCLA community.”

Leonard Rome, senior associate dean for research in the David Geffen School of Medicine, commented, “It's terrific that Audree chose to set up this fellowship in the MBI, since all of the departments she was involved in at UCLA will be included.”

Emil Reisler, dean of life sciences in the College, added, “Audree advanced the field as a scholar here, and now she has done it again through this visionary fellowship, which will recognize the recipients for their academic excellence and promise. Graduate students for generations will benefit from her gift.”



Dr. Audree Fowler with Molecular Biology Institute director Steven Clarke.

Fowler received her B.S. in chemistry from UCLA in 1956 and went on to earn a Ph.D. in biochemistry in 1963, when that field was almost exclusively male. She served as a NIH postdoctoral fellow at the Albert Einstein College of Medicine in New York and in UCLA's Department of Biological Chemistry before becoming a research biological chemist in the David Geffen School of Medicine at UCLA.

Here on the Westwood campus Fowler forged a distinguished research career that spans the sciences and includes more than 80 publications. She also built strong connections

A Permanent Tribute to a Dedicated UCLA Scientist

David Ross commemorated the work of his wife, UCLA research scientist Maria Rowena Ross, with the creation of an endowed chair for cell biology and biochemistry.

David Ross had a specific reason for creating an endowed term chair for UCLA's Department of Molecular, Cell and Developmental Biology in memory of his late wife: "It's what Maria wanted," he said. "We talked about it, and she told me, 'I'd really like to have an endowed chair named for me.'"

After she passed away in 2007, Ross, a retired chemical engineer, established the Maria Rowena Ross Term Chair in Cell Biology and Biochemistry, with a gift of \$500,000.

The couple met on the first night of an algebra class at Santa Monica City College in 1955.

"She walked into the room wearing an orange, full-length, sleeveless coat, and she just knocked my socks off," said David. "I immediately offered to tutor her." David and Maria were married in 1957.

"I still have that coat," Ross said with a smile. "I never let her get rid of it."

Maria transferred to UCLA in 1959. "I don't think there was ever any question about what university she wanted to go to," David said. "She loved UCLA."

Maria earned her bachelor's degree in zoology in 1961, and her Ph.D. in cell physiology and biochemistry in 1970. After spending time as a research associate at USC, she returned to UCLA in 1980, where she worked as a research scientist until her death.

One of Maria's projects involved studies of dinoflagellate algae that multiply quickly and cause toxic red tides. Most recently, she discovered an apparent symbiotic relationship between the dinoflagellates and other algae that may live inside them. To prove the relationship, she was beginning to study molecular biology and conduct DNA analyses, but she died before she could complete her work.

David hopes the Maria Rowena Ross Term Chair will be filled by someone in his wife's field.


"She wanted to do blue sky stuff—basic research that breaks down the frontiers of science," he said. "So if the chairholder does that, I'll be very happy, and I know she would be, too."

Term chairs are usually awarded for a five-year period as career development support for younger faculty who are starting out in their fields. Utpal Banerjee, chair of the Department of Molecular, Cell and Developmental Biology, said, "The first five to ten years are the critical period that can make or break someone's career. Supporting a bright young individual at this point in their career allows us to recruit and retain the best scientists who will form the foundation of the department."



David and Maria Ross.

"The first five to ten years are the critical period that can make or break someone's career. Supporting a bright young individual at this point in a career allows us to recruit and retain the best scientists who form the foundation of the department."

More than 40 people gathered at a luncheon at the Faculty Center on March 26 to honor David Ross for his gift and to remember Maria Ross. Beforehand, Ross joked that he would be wearing a suit for the occasion, something he rarely does these days. Then he became serious: "This is really important to me," David said. "I'm doing exactly what Maria wanted." 

“The response from the many friends of AAP was tremendously gratifying, and a vivid illustration of the impact that AAP has had on so many lives.”



Vice provost Judith L. Smith, associate vice provost and AAP director Charles Alexander, and Stanley Lau, donor of AAP's \$350,000 Patron Scholarship. “Stanley's gift,” said Smith, “is a living tribute to his wife, Dora, that will benefit countless AAP students.”

A New Boost for Undergraduate Support

The Academic Advancement Program celebrated its 35th birthday at UCLA with a Royce Hall event that brought \$646,000 to the nation's largest university student diversity program.

When the UCLA Academic Advancement Program (AAP) held a gathering in Royce Hall to recognize 35 years of achievement, it was much more than a campus event—it was a family celebration.

The February 28 event brought together 800 current and former AAP students, teachers, and staff to recognize the program's three decades of promotion of access and academic success for UCLA undergraduate students from diverse populations.

At the celebration, UCLA honored five national corporate and civic “champions” of education as the first recipients of the Academic Advancement Program Leadership Award, and 35 UCLA graduates who were named the first recipients of AAP's Distinguished Alumni Award.

With 6,600 participants, AAP is the nation's largest university-based student diversity program. AAP students are from low income families, are the first in their families to go to college, are recent immigrants, or come from populations that have been historically under-represented at the university.

“AAP pushes its students to graduate with the broadest and most enriched education possible,” said Charles Alexander, associate vice provost for student diversity and director of AAP. “A large number of AAP graduates focus their work on serving the poor and underserved.”

During the 1960s, several pilot programs emerged at UCLA to support students who normally would not pursue a university education. These programs provided academic guidance, mentoring, and financial aid for students who met university eligibility requirements but, because of ethnic, cultural or socio-economic factors, were unlikely to attend college.

In the early 1970s, the best of these programs were brought together to create the Academic Advancement Program.

“The formation of AAP was the beginning of UCLA embracing a more progressive and socially responsible vision of its role in the education of the state's population,” said Alexander.

The 35th anniversary celebration became an opportunity to support future generations of AAP students.

The event generated some 118 gifts totaling \$646,185 which will provide both current student support and a permanent endowment for undergraduate scholarships.

The gifts were anchored by a \$350,000 Patron Scholarship given by Stanley Kwok Lau '49—a tribute to the memory of his wife, Dora.

“The response from the many friends of AAP was tremendously gratifying, and a vivid demonstration of the impact that AAP has on so many lives,” said Judith L. Smith, vice provost for undergraduate education. [CU](#)

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

It ought to be a double major.

**I looked at those
freshman class
offerings—Clusters
and Fiat Lux seminars.
My first reactions were
1) Amazement
2) Envy.
Oh, to be young again!**

“You can’t walk onto this campus without sensing that there’s a grand experiment afoot, a delicious conspiracy. Understanding it takes a little longer. I’ve taken several classes here and taught a few, and this is what I’ve figured out so far:

“If UCLA were simply a world-class university, it would still be exceptional. But it happens to be a world-class research university, and that makes it extraordinary.

“Through the years, that extra dimension has caused a wide variety of disturbances and disruptions. Consider the time-honored conflict between teaching and research. Here they’re virtually synonymous. Well, how about scholar as monk, the inventor as loner, the academic life versus the ‘real world’?

**Faculty tell me this
all the time: “This is
the place for me in
my profession and my
field of study.”**

“Not here. Not at UCLA.

“From their first day, undergrads engage in critical thinking and analytical discussion as a collective process. They’re drawn into the company of leading thinkers and doers they would never expect

to know if there weren't a research university in the neighborhood. They'll learn to understand, question and defend a thousand new ideas, including their own.

“Trade secret: The faculty love teaching multi-disciplinary classes to a roomful of brand-new, high-energy Four Point Ohs. You can feel their passion for their specialty, their joy in missionary work, and always, always their search for those who will ask the great questions, see the connections, join the dialogue, and take their ideas to



Betsy Wood Knapp is founder/CEO of BigPicture Investors LLC and chair-elect of The UCLA Foundation. The Knapp Foundation has endowed a professorship at the Anderson School of Management.

People around here don't seem to be focused on status or title. They're much more rooted in their ideas—fiercely competitive and not the slightest bit concerned about who's on the other side of the argument.

the next level. They'll tell you it's their hardest teaching job and their most rewarding.

“Somehow, in that four-year instant, right in front of everybody, UCLA students will become scholars, and—as part of the same mystical process—those scholars will become dues-paying citizens of the world.

“ ‘Scholar/Citizen.’ It ought to be a double major.”

Betsy Knapp. UCLA, Unabashed.



The telltale sign of civilization—the jawbone of a domesticated animal is unearthed on a fertile oasis in northern Egypt, where a research expedition co-led by UCLA archaeologist Willeke Wendrich found the earliest evidence of an ancient settlement more than 7,000 years old. The farming society thrived thousands of years before the reign of the pharaohs; the discovery—which includes evidence of hunting and fishing, beads, pottery, tools, and clay floors for what may be dwellings—is answering fundamental questions about the people of the New Stone Age. For more on the Egyptian find, see page 4.

UCLA
COLLEGE
REPORT

2300 Murphy Hall
405 Hilgard Avenue
Los Angeles, California 90095

Non-Profit Org.

U.S. Postage

PAID

UCLA