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USC

Trojan Family Magazine

HTE@USC

Reaching Toward the Biomedical Future

Thanks to nanoscale electronics, there's a revolution under way in medical sciences.

Stem cell celebration »10 Can video games save us? »30 USC doctors focus on "Female Trouble" »36

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» PAGE 30
Dmitri Williams, who studies online games: "Kids love being subversive. That's what play is all about."

Inside

FEATURES

» PAGE 38 "Chronic pain from endometriosis can be a huge drain, not only on a patient, but also on her relationships with family and friends. Women need to know that they are not alone, and that it is a disease we are learning more about."

– Claire Templeman, assistant professor of clinicial obstetics and gynecology at the Keck School of Medicine of USC.

Lamont Dozier
» PAGE 13

USC Trojan Family Magazine Spring '11

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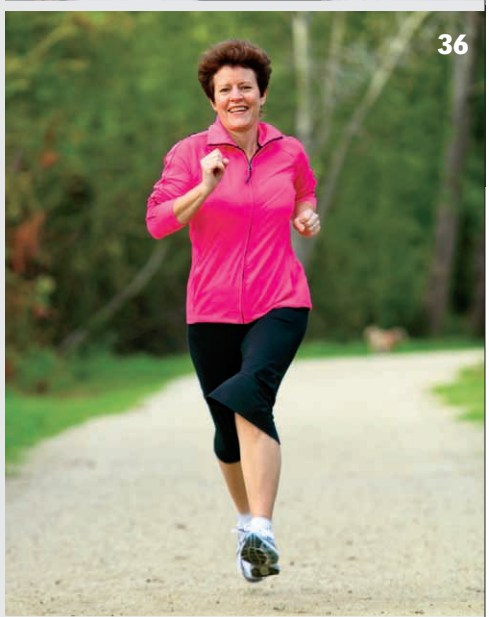


» **PAGE 41 Ronald Tutor '63:** "To give a beautiful building to a university that so richly deserves it is the most special feeling I can recall in terms of accomplishments. I could not think of a better way to give."

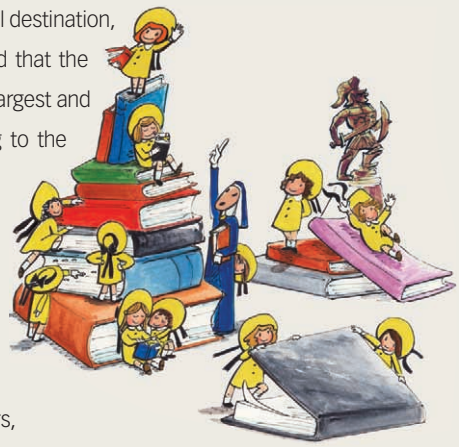
For past issues of *USC Trojan Family Magazine*, visit ***usc.edu/trojan_family***

Spring 2011

On the cover: Artificial fingertips designed by professor Gerald Loeb of USC Viterbi
Photo by Mark Berndt

[EDITOR'S NOTE] Book it: Destination USC

I never imagined I would leave the East Coast, the very epicenter of my social network for decades. But after just one fateful visit to campus, the lure of USC was remarkably strong: idyllic grounds and architecture as the backdrop for intense academic inquiry in a dizzying array of disciplines.



Given my own view of USC as an incredibly ideal destination, it was no surprise to me when it was announced that the *Los Angeles Times* Festival of Books, the nation's largest and most prestigious book festival, would be moving to the University Park campus after 15 years at UCLA.

The festival, which takes place April 30 and May 1, features more than 400 authors and performers participating in a nonstop schedule of readings, book signings, literary panels, writing workshops, storytelling, and musical and comedy acts.

USC will present its own deep bench of scholars, writers, artists and entertainers on a special outdoor stage in Hahn Central Plaza, inside Gin Wong Auditorium and around campus in special USC Bookend events.

The literary treasures are sure to impress, and USC president C. L. Max Nikias hopes to mobilize the Trojan Family as well as booklovers everywhere to set an impressive new attendance record of 150,000.

Bring family and friends and introduce them to the undeniable draw of USC. There is nowhere else I'd rather be that weekend, and for many weekends to come.

– Nicole M. Malec

Los Angeles Times FESTIVAL OF BOOKS
UNIVERSITY OF SOUTHERN CALIFORNIA

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President's Page

By C. L. Max Nikias

Last fall, even before my formal inauguration as USC's president, I began visiting the university's Family of Schools. As many of you know, this unique program partners USC with 15 schools in the local neighborhoods, reaching more than 15,000 students near our campuses.

Through the Family of Schools, USC offers a range of support, from the Neighborhood Academic Initiative (NAI), which prepares local students for college, to Kid Watch, which mobilizes adults to serve as volunteer guardians. USC's Good Neighbors Campaign bolsters all of these efforts. This past year, it raised more than $1.3 million in donations from faculty and staff.

I'm always delighted to read an article praising USC's neighborhood outreach programs, or to hear how NAI's 600 graduates are making their way in the world, but nothing could have prepared me for the overwhelmingly warm response I received as I visited our Family of Schools. How quickly I was reminded: The ties between USC and our local community are deep and profound.

The Trojan sign needs no instruction, Nikias discovers at Foshay Learning Center.

PHOTO BY PHILIP CHANNING

At our very first visit, Sheridan Street Elementary School students, teachers, parents and even grandparents greeted us, their faces beaming with enthusiasm, their handshakes heartfelt. "We really appreciate what USC does for us," many said, smiles stretched across their faces. The pride I felt in that moment – as president of this great university – was tremendous.

At Foshay Learning Center, as at other schools, the student band welcomed us, and the sounds of the USC fight song filled the air, flowing from more than 40 students' instruments. The kindergarten class lined our walkway, waving pompoms to its rousing beat. "Fight On!" some of the parents and grandparents shouted, their hands raised to show our victory sign.

Inside the schools, remarkably dedicated teachers and administrators met us, their passion filling the rooms. And everywhere we went, USC alumni stepped forward in the hallways. "USC Class of 2002," a teacher would say, extending her hand, only to be followed by another, "Proud Trojan, Class of 1993."

There we were, surrounded by USC alumni! Some, such as Jasmine Tigolo, graduated from NAI. She was part of the program's first class in 1997, and now teaches at Foshay.

This giving back, I'm happy to add, goes both ways. Lizette Zarate, who was part of the second graduating NAI class and received her B.A. from USC, recently joined the university as NAI's curriculum and instruction specialist.

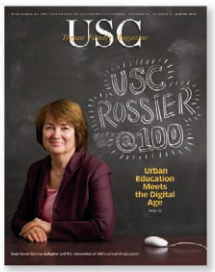
At these schools, the young students inspired us just as much as the teachers. At Griffin Avenue Elementary School, one third-grade student showed up in full USC regalia, with cardinal and gold running from her jacket to her socks. "I am coming to USC," she confidently announced. You could see the determination in her eyes. She already knows: USC is perfect for her!

At Francisco Bravo Medical Magnet High School, another young woman's intellectual curiosity stood out. "I love history and I love engineering," she said, "and I don't want to make a choice." I told her at USC, she wouldn't have to choose. In fact, we encourage students to draw connections between the humanities and the sciences, as well as the arts and social sciences. You could see the relief wash over her face. She had found her dream school.

For many of these students, USC represents just that: a dream. It's a beautiful, leafy oasis just up the street, a place where education and intellect reign supreme. They can already sense that it leads to a life filled with choices and opportunities, a passport to an expansive future.

But unlike a dream, USC is real. We do real work in these communities, and our communities benefit in real ways. In connecting with these schools, in partnering with their teachers and administrators, we help make these students' lives better. And at the same time, we help them bring their dreams into sharper focus. ●

Mailbag



QUOTED » "What great photography Mark Berndt contributed to the Winter issue! The inauguration photography is terrific, the lead spread on the USC Rossier story is a good way of enlivening a static situation, and the portraits in the gerontology story are editorially relevant, imaginative, quirky and funny."

Fond Farewell

It was with some sadness that I read of Susan Heitman's retirement in the Winter 2010 edition (Editor's Note, p. 4). As a former journalism student, and a *Daily Trojan* reporter with relatives in the journalism profession, I have some appreciation as to what constitutes a fine journalistic publication.

Ms. Heitman has taken *USC Trojan Family Magazine* to the highest level of alumni magazines (my family and I receive and read a number of other such publications for comparison). She has consistently published interesting, informative and entertaining articles and features for her readers while always furthering the university's mission to propagate knowledge and advance society, the magazine's mission to inform the alumni about their alma mater and to hold them near. Susan Heitman will be missed and deservedly so. May her retirement be as rich and rewarding as the magazine, which she so ably headed.

Harvey L. Zuckman '56
ROCKVILLE, MD

I just read in last issue's Editor's Note that Susan Heitman was retiring after 28 years at the helm of the publication. Like our beloved university, the *USC Trojan Family Magazine* has continued to get better and better throughout Susan's tenure. I look forward to every new issue. Please pass on my well wishes to Susan and a hearty "Job well done!" from an alum.

Jim Hagen '91
SIOUX FALLS, SD

Upside of Aging

Your article on interdisciplinary gerontology ("Reaching Toward the Fountain of Youth," Winter 2010, p. 36) was quite interesting, but it ended on a somewhat reductionist note, equating the hypothesized positive outlook of seniors with an ability to "ignore negative information."

It's true that as we get older the challenges can become greater, with deteriorating health and the loss of loved ones.

Fortunately, aging also brings a greater perspective and increased equanimity in the face of adversity. We are increasingly able to see the bigger picture, the longer haul and to realize that "this, too, shall pass." The heightened sense of well-being that can come with advancing age is – dare I say it – a function of *wisdom*, which is difficult to measure but real, nonetheless.

I have two important questions for Caleb Finch: 1. Where is that beautiful pool where he is swimming in the photograph? 2. Does he still play the fiddle?

Ron Hale, ME '75
SANTA FE, NM

Editor's Note: The outdoor Shangri-La is at Finch's home in Altadena, Calif., and, yes, Finch continues to play fiddle in the internationally

[LAST WORD] Clownin' Around

We wanted to start off the new year right. But here we are again, hanging our heads in shame for the error in clue 10. The "President's Court Jester" ran for president in the *1868* election – not 1898. As several of our readers pointed out, Ulysses S. Grant was dead by 1898, and, actually, there wasn't even an election that year. Apologies to our history buffs; let's call that our idea of clownin' around and move on. Die-hard *Simpsons* fans showed their knowledge of all things Springfield in clue 6 by naming not only the clown's stage name but also his full legal name – Herschel Shmoikel Pinchas Yerucham Krustofski. Now, that's a mouthful! Surprisingly, clue 9 threw many for a loop, with some citing Michael Christensen of Clown Care or Tortell Poltrona of Clowns Without Borders. Close, but not the clown doctor, Patch Adams, we were looking for. We received 105 entries, of which 82 were correct. The five winners randomly selected to receive $30 Borders gift certificates are: Wynn English; Craig Berger MPW '03; Dave Shipman MS '70, PhD '73; Bruce Brown MBA '71; and Adele Fergus-O'Brien '76, MS '84.

Answers » **1.** Philip Astley **2.** John Wayne Gacy (Bonus: Pogo the Clown) **3.** Heath Ledger **4.** Willard Scott **5.** Insane Clown Posse **6.** Krusty the Clown **7.** Emmett Kelly **8.** Jello Biafra **9.** Patch Adams **10.** Dan Rice **11.** Clown Alley **12.** "The Tears of a Clown" ●

We welcome letters from readers although we do reserve the right to select and edit for space. Please include your name, address, e-mail address, degree and year of graduation, if applicable, with each letter and mail to: *USC Trojan Family Magazine*, University of Southern California, Los Angeles, CA 90089-7790 or e-mail us at: magazines@usc.edu. *Please note that, because of our production schedule, it might be several months before your letter appears.*

recognized Iron Mountain String Band. Three of the group's albums are available through the Smithsonian Folkways label.

One of the more interesting parts of Carl Marziali's article was the experience Dr. Crimmins had with the review process for her research on statins: The editor rejected the study because it challenged prevailing perceptions. Her experience is actually not unusual, and it confirmed what I've observed for more than a decade – that the professional review process is broken.

A few years ago, I finished a study that was at odds with the widely held view that Asian students at university lack a sense of agency owing to their "collectivist" culture. It was rejected by the leading journal on second-language teaching, and the editor explained that the problem was not any weaknesses in the design or the data, but rather that the findings were incongruent with the current emphasis on cultural differences. Recently, I submitted a paper to one of the top journals on literacy and education. The paper reported the results of a study of adaptive help-seeking behaviors and self-efficacy in writing performance among undergraduates. The editor wrote that he would not even send the paper out for review because he saw no connection between psychology and literacy.

Although both studies eventually were accepted elsewhere, we should find it disturbing that publication decisions at leading journals are being based on political correctness and ignorance.

James D. Williams, PhD '83
ALISO VIEJO, CA

I'm writing to comment on two articles in the Winter 2010 issue. First, the page 13 article praising Obama and his "eloquent" speech (What's New) – it is way too early to place Obama in the same sentence as Ford, Kennedy and Nixon. Some observers, including me, would place him with the likes of Carter, Wilson and Buchanan.

Second, the "Reaching Toward the Fountain of Youth" article on page 36 was one of the best you have published: well written, informative and relative. No propaganda, just good, useful information.

While not a large contributor to USC, we are consistent ones. The "Obama" article had convinced me to cut back on what we contribute, but the "Youth" article brought me back to the center. I'd suggest more of the "Youth" and less of the "Obama." We get enough Obama-mania in the national press.

R. A. Feight '77
FORT THOMAS, AZ

Unconventional Major

It distressed and saddened me to read about the demise of the counseling/psychology department at the USC Rossier School of Education ("Urban Education Meets the Digital Age," Winter 2010, p. 28).

In 1980, I moved from Chicago to USC in order to study humanistic existential counseling/psychology at one of the few schools in the country – and in the world – that offered it. I loved studying this subject and have since used my degree in various capacities, albeit often unconventionally. For example, last August I gave a presentation on laughter therapy juxtaposed with Frankl's and Low's work on meaning and anxiety at Seattle University's International Human Science Research Conference. I don't

know. Maybe the counseling/psychology department was too theological or too philosophical, "not of the real world." And it is true that it was not a streamline into a position with a major corporation or a mammoth educational system. But I do hope that USC Rossier can still leave some room for unconventional innovators, creators and dissenters.

Please see question 9 in the Last Word (p. 64). I believe the answer is Patch Adams – and, yes, humor is healing.

David Ferlic, EdD '88
WHEAT RIDGE, CO

Picture Perfect

What great photography Mark Berndt contributed to the Winter 2010 issue! The photographs are lively and demonstrate a great range in the kinds of situations he can work with. The inauguration photography is terrific, especially on pages 22 and 23 ("The Destined Reign of Troy"); then the lead spread on the "USC Rossier @100" story ("Urban Education Meets the Digital Age," p. 28) is a good way of enlivening a fairly static situation; and, finally, the portraits in the gerontology story ("Reaching Toward the Fountain of Youth," p. 36) are editorially relevant, imaginative, and, in the case of my favorite (p. 43), often quirky and funny.

Oh, and probably I should have put this first … excellent design for each of the stories. As a photographer, I have long known that the photography is only as good as the design. And in this instance, there is a great intersection of fine design and excellent photography.

Richard Howard
WINCHESTER, MA

Trojan Through and Through

As a second-generation alumnus who basically grew up on campus, I look forward to reading each new issue of your magazine. I have one suggestion, however, that would greatly improve the magazine's enjoyment for some of us who so infrequently get down to campus.

The Winter 2010 issue contained an excellent article about the new Ronald Tutor Campus Center (What's New, p. 11), complete with a picture of the new plaza. Unfortunately, I was unable to visualize from the other buildings in the picture exactly where the new center was located. With articles of this type, if you could include a small map/sketch of the new buildings' locations – relative to the "old" buildings (Bovard, Bridge, Founders, Doheny, Engineering, etc.) or streets that were there 50 years ago, or even 25 years ago – it would be a great help to us old-timers.

Ron Chandler '57, MBA '68
ROLLING HILLS ESTATES, CA

I always enjoy reading your magazine, and I am not usually left with pressing questions. However, in all the hoopla regarding president C. L. Max Nikias you never mention what the initials C. L. stand for. Is it a secret?

Robert McLoud '78
SAN FRANCISCO, CA

Editor's Note: No secret! C. L. stands for Chrysostomos Loizos.

Notice Board

My Fellow Trojans and Friends:

I would like to thank all of you for your continuing support for our athletic programs, teams and student-athletes. It is my privilege and pleasure to lead the Athletic Department as it continues our great Trojan athletic tradition on the fields, on the courts and in the pool. Although we were sanctioned by the NCAA last June, I can report that we are and will continue to compete and win the "Right Way." As a part of the NCAA sanction directives, we are required to publicize the various violations and sanctions included in the NCAA's June 10, 2010, report. To that end, the university has been publicly reprimanded, censured and placed on probation from June 10, 2010, through June 9, 2014.

With regard to football, the NCAA reported violations involving agent and amateurism issues, lack of institutional control, impermissible inducements, extra benefits, exceeding coach staff limits and unethical conduct. The penalties include: post-season ban for the 2010 and 2011 seasons; one-year show cause penalty (through June 9, 2011) for an assistant football coach; vacation of wins and the individual records of a former football player from December 2004 through the 2005 season, and the reconfiguration of the records of the university and the head coach to reflect those actions; limit of 15 initial scholarships and 75 total scholarships for each of the 2011-12, 2012-13 and 2013-14 years; $5,000 fine; disassociation of a former football player; prohibition of non-university personnel from traveling on team charters, attending practices and camps, and having access to sidelines and locker rooms. USC is appealing selected penalties.

In men's basketball, the NCAA violations involved agent and amateurism issues, lack of institutional control, impermissible inducements and extra benefits. The penalties include: post-season ban for the 2009-10 season; vacation of wins and the individual records of a former basketball player from the 2007-08 season, and the reconfiguration of the records of the university and the head coach to reflect those actions; limit of 12 scholarships for each of the 2009-10 and 2010-11 years; one less coach permitted to recruit off campus in summer 2010; reduction of recruiting days by 20 for the 2010-11 season; return to the NCAA of funds received for appearing in the 2008 NCAA men's basketball tournament and forfeit of any future scheduled distributions; disassociation of a former men's basketball player and a representative of the university's financial interests; release of three recruits from their letters of intent; and prohibition of non-university personnel from traveling on team charters, attending practices and camps, and having access to sidelines and locker rooms.

With regard to women's tennis, the NCAA sanctions involved lack of institutional control and extra benefits. The penalties include: vacation of wins and individual records in which an ineligible women's tennis player competed between November 2006 and May 2009, and the reconfiguration of the records of the university and the head coach to reflect those actions.

In closing, I want to again thank you for your support; rest assured that we will continue to be vigilant in making sure that our program is compliant with the rules and regulations of the NCAA and the PAC-10, and that we will compete and win with integrity and the Trojan spirit. Fight On.

Patrick C. Haden
USC ATHLETIC DIRECTOR
CAMPUS

Archives Request

We need your assistance in preserving the heritage of our university. The USC University Archives exist to collect, preserve and make available records having permanent value in documenting the history of the university, its administrative offices and academic departments, and USC-related organizations as well as the activities of faculty, staff and students.

Books, manuscripts, periodicals, posters, photographic images, disc and tape recordings, and other archival items are available for research under supervised conditions.

Please contact me at (213) 740-2587 or czachary@usc.edu, or visit us at usc.edu/arc/libraries/uscarchives

Claude Zachary
USC UNIVERSITY ARCHIVIST
CAMPUS

IT'S A DREAM COME TRUE FOR A SMALL BUSINESS OWNER

Araceli Padilla never expected that she would be the grand prize winner of the 2010 Verizon Latino Small Business Awards held in Los Angeles, California.

Standing before a group of small business owners whom were being honored, Padilla confessed to having written a third place acceptance speech, as she did not expect to be honored with the grand prize award. "I cannot believe that amongst doctors, architects and small business entrepreneurs, that I would be honored with this grand prize recognition, I am beyond words," said Padilla.

Verizon selected Padilla's inspirational essay where she shared the positive values that were instilled in her by her parents. It was these values that have led her to be the successful entrepreneur that she is today. Her parents' daily commitment to working hard and educating themselves were critical elements in advancing the family forward. Padilla's essay reflected the admiration she has for her hard working parents and attributed her success to her close knit family. "They raised us like a little village, we each had duties and responsibilities," wrote Padilla.

Araceli Padilla saw a need to educate Latino families about insurance. She had a vision to create an insurance agency that would provide tools and resources to the Latino community. Three years later, Padilla Insurance Agency located in Santa Ana, California attributes its success to its stellar bi-lingual customer service and continued commitment to empower the community it serves.

"My motto is to create value by educating and not selling," says Padilla. Araceli is active in the community she serves by being a member of the Santa Ana Chamber of Commerce and National Association of Hispanic Real Estate Professionals.

The 2010 Verizon Small Business Awards honored twelve Latino entrepreneurs with cash and technology grants. Entrepreneurs were selected based on the compelling nature of essays submitted during the contest entry period. Christina Gonzalez, Director of Multicultural Marketing for Verizon Wireless says, "We're committed to enhancing the productivity, profitability and growth of Latino-owned small businesses, especially during a time when access to capital and resources is limited."

What's New

NEWS & NOTES ON ALL THINGS TROJAN

Stem Cell Celebration

With its grand opening, the Eli and Edythe Broad CIRM Center offers new hope for a disease-free future.

LAST FALL, CALIFORNIA GOVERNOR Arnold Schwarzenegger joined USC administrators, trustees, elected public officials and more than 150 invited guests in the dedication of the Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research.

"This is much more than just bricks and mortar," Schwarzenegger said at the Oct. 29 ribbon-cutting ceremony. "This is an institute of hope – hope for millions of people who suffer from Alzheimer's, from cancer, from AIDS, from Parkinson's disease and many other diseases. Here, some of the finest scientists in the world, along with their research teams, will expand the frontiers of science and medicine in pursuit of lifesaving cures."

The $80 million, five-story, 87,500-square-foot structure can house an estimated 200 researchers. Eli and Edythe Broad, the building's namesakes and primary donors, gave $30 million toward its development.

Keck School of Medicine of USC dean Carmen A. Puliafito introduced the governor by recognizing his great courage in supporting the Stem Cell Research and Cures Initiative, known as Proposition 71.

"In the fall of 2004, the future of stem cell research in this country was in great peril," Puliafito said. "It took great courage for the newly elected governor of California to oppose the policy of his party and his president by supporting the Stem Cell Research and Cures Initiative. Our governor supported the preservation of human life and the reversal of disability by supporting the promise of stem cell research."

In his remarks, USC president C. L. Max Nikias characterized the day as "one of the most momentous" in the history of the Keck School and the Health Sciences campus.

"This new center carries out our promise to society," Nikias said. "In the future, historians will search for the turning point in the age of medicine and biology. And when they do, they will look to this place, they will look to this time, they will look to this CIRM [California Institute for Regenerative Medicine] center, and they will look to Eli and Edythe Broad. And they will see that what we have done together has changed not only this university, but also the world."

"There's no question that stem cell research has the potential to revolutionize medicine," donor Eli Broad noted in his remarks at the ceremony. "I truly believe that biotechnology is one of the areas that are the economic future of this city and this state. We want to be a magnet for biotech talent and business, so we all have high expectations for this new center for stem cell research and regenerative medicine here at USC."

"The definition of 'possible' has changed," said Robert Klein, CIRM chairman of the Independent Citizens' Oversight Committee and author of the California ballot initiative that launched CIRM in 2004. "The stem cell revolution has begun. Let us recognize, celebrate and thank the great scientists and postdocs and grad students who are the real heroes in this fundamental struggle against history's plight of mankind with chronic disease."

ORIGINALLY CONCEIVED in 2005, the stem cell center is the product of a public-private partnership among the Keck School, the Eli and Edythe Broad Foundation and California's voter-created California Institute for Regenerative Medicine. It is a cornerstone in the biomedical research corridor on USC's Health Sciences campus that includes the Zilkha Neurogenetic Institute, USC University Hospital and the USC Norris Comprehensive Cancer

From left, Dean Pulia to, Governor Schwarzenegger, Edythe and Eli Broad, CIRM's Robert Klein and President Nikias.

PHOTO BY JON NALICK

Center and Hospital. It is also the first building on the USC Health Sciences campus to receive a silver Leadership in Energy and Environmental Design designation, based on the structure's eco-friendly features.

Dozens of researchers and students who will work inside the new facility joined the crowd gathered for the outdoor dedication ceremonies. The ribbon-cutting ceremony was followed by a tour of the building's labs and a luncheon for invited guests.

"You will see today that our new building is not only a first-class research facility, but also a stunning architectural statement," said Martin Pera, the stem cell center's founding director. "As we work together, Los Angeles can be truly a world-class center for regenerative medicine."

Architects for the project were ZGF Architects. The builder was Morley Construction Co.

– Imelda Valenzuela

SPENDING LIBERALLY ON LIBERAL ARTS

A Postdoctoral Bonanza

USC becomes one of a few elite institutions that funds its own humanities postdocs.

THE LEAP from doctoral candidate to junior professor can be treacherous for newly minted Ph.D.s. That's why postdoctoral fellowships were invented. But while common in the sciences, where outside grants are the norm, postdocs have been a rarity in the humanities.

Art history is one of the fields to be funded.

Come September, that will change at USC. In her first major initiative as provost and senior vice president for academic affairs, Elizabeth Garrett unveiled a program to fund the university's own postdoctoral positions for exceptional Ph.D. graduates in the humanities.

The Provost's Postdoctoral Scholars Program in the Humanities will support up to 10 early-career researchers for two years, enough time to develop strong research and teaching portfolios, a major prerequisite for any tenure-track job. The program will attract junior scholars from excellent academic institutions worldwide in the following fields: American studies, art history, classics, comparative literature, cinematic arts critical studies, East Asian languages and cultures, English, French, history, linguistics, musicology, philosophy, Spanish, and Slavic languages and literatures.

Each scholar will receive an annual salary of $50,000 plus fringe benefits, as well as a research and travel account worth $6,000 a year. Fellows will be expected to teach three courses during their two-year appointment, one per semester with one semester free for full-time focus on research.

That sends "a very, very strong message" about the university's intellectual and financial commitment to the humanities, says vice provost of graduate programs and Slavic languages scholar Sarah Pratt.

"Universities often make gestures towards the humanities," she says. "This one has real punch."

Postdoctoral programs in the humanities are not unheard of – the Mellon Foundation supports postdocs, as do Princeton and Harvard universities, Pratt noted – but they remain the exception.

"In the sciences there's a very well-developed tradition of postdocs," Pratt says. "Relatively speaking, in the humanities they're very rare."

The new postdoc program, Pratt says, "is a commitment to these individuals but also to the humanities as a whole."

– Carl Marziali

Capital CONNECTIONS

» INTERFAITH TRAINING **Jim Burklo**, associate dean of religious life, and **MacKenzie Edwards** and **Nathaniel Gonzalez**, undergraduates active in USC's Interfaith Council, participated in a community service training program in mid-October at the White House. The Interfaith Leadership Institute brought together 100 college students from 50 universities. Student leaders learned how to respond to issues of religious prejudice and conflict.

» MODEL NEIGHBORS **Kim Thomas-Barrios** of the Office of Government and Civic Engagement appeared on a "Community-wide Collaborations" panel for the National College Access Network's conference in Washington, D.C., last fall. She spoke on the partnership between USC and the L.A. Unified School District that led to the creation of the Neighborhood Academic Initiative, citing the program's remarkable success: 99 percent college attainment, with 35 percent attending USC as freshmen.

» EXECUTIVE PAY SCALE USC Marshall School of Business professor **Kevin Murphy** appeared before a Congressional oversight panel hearing on Oct. 21 to assess the effectiveness of executive compensation restrictions for companies that received funds through the U.S. Treasury Department's Troubled Asset Relief Program. The TARP experience, Murphy concluded, "is a case study in why the government should not get involved in regulating executive compensation within the financial services sector or more broadly."

» PUSHING TRANSIT On Sept. 30, **Richard Little** and **Mark Pisano** of the USC School of Policy, Planning, and Development spoke at a conference on "Funding and Financing Solutions for Surface Transportation in the Coming Decade" at the U.S. Capitol Visitor Center in Washington, D.C. Co-sponsored by the USC Keston Institute for Public Finance and Infrastructure Policy, the event was attended by congressional staffers and members of the transportation policy community. Little, who directs the USC Keston Institute, proposed using public and private pension assets and Social Security funds to invest in transportation infrastructure. Pisano, a senior fellow at SPPD, moderated a panel. ●

For more news on USC in the nation's capital, visit ***uscnews.usc.edu/capital_connections***

A Tale of Two Chefs

A pair of Midwesterners feeds USC's appetite for healthy California cuisine.

AFTER ONLY TWO WEEKS on the job, chef Eric Ernest had met two presidents: USC president C. L. Max Nikias, at his inauguration ceremony Oct. 15; and U.S. president Barack Obama, during his Oct. 22 visit to the university. Not bad for a Milwaukee boy who can trace his culinary career back to an Easy-Bake Oven.

"It's like being a chef with a large city," Ernest says of his role as executive chef for USC Hospitality. The job entails overseeing 39 campus venues, including Lemonade, a retro-style gourmet eatery; the Lab, a science-themed gastropub; and the jewel in USC's culinary crown, Moreton Fig, a full-service restaurant in the Ronald Tutor Campus Center.

Luckily, Ernest has another solid Midwesterner – Todd Koenigsberg, of Dublin, Ohio – right by his side. The head chef of Moreton Fig joined USC last summer and has already set a high standard for campus dining. Ernest and Koenigsberg share more than hometowns in the Central Time Zone. They are both advocates of simple and natural ingredients.

"Good food doesn't have to be millions of different ingredients," says Koenigsberg, who promotes eco-friendly, farm-to-table cuisine. "It can be simple food that's not dialed up."

Ernest agrees. And with his ties to local growers and fishermen, he plans to replace institutional fare with California cuisine.

Ernest, left, and Koenigsberg

BORN INTO A FAMILY of chefs, Ernest immersed himself in the culinary world at a tender age. A gift mixup one Christmas morning sealed his fate. "I got the wrong box," he says. "Instead of a truck, I got an Easy-Bake Oven. The funny thing was, I didn't care. I was excited about it and happily started making cakes in the corner."

After graduating from culinary school, he got his first professional gig at Grenadier's, a fine-dining French restaurant in his native Milwaukee. He has worked at several high-profile restaurants since then. He was the *sous chef* at MC2 in San Francisco, a saucier at Wolfgang Puck's Spago restaurant in Beverly Hills and the executive chef at BOA Steakhouse in Santa Monica.

For Koenigsberg, it was gourmet grandparents who lit the culinary spark. "They ate escargot, drank espresso," he recalls – not the usual fare in small-town Ohio.

AFTER CULINARY SCHOOL, he worked with Southwestern chef Bobby Flay and Italian chef Mario Batali before moving to Silicon Valley to become executive chef at Bon Appétit, a restaurant at the Google corporate headquarters.

Together, these two chefs will be changing the culinary landscape at USC. Ernest has some big ideas. He wants to create "action stations" around campus – a central bakery, a sushi center and a butcher station. He wants to open interactive bars in dining halls. He envisions organic sandwich carts along Trousdale Parkway.

The days of institutional food at USC are numbered.

– Shirley Shin

CHEFS PHOTO BY PHILIP CHANNING / GEHRY PHOTO COURTESY OF FRANK GEHRY

[MASTER BUILDER] Professor Gehry

World-famous architect **Frank Gehry** has joined the faculty as Judge Widney Professor of Architecture. Named for USC founder Robert Maclay Widney, the chair is reserved for eminent individuals from the arts, sciences, professions, business and community leadership. Gehry's appointment will be in the USC School of Architecture, from which he earned his bachelor of architecture degree in 1954. Gehry has designed distinctive museums, concert halls, offices, homes, and other public and private buildings across the globe and throughout California. Among his most iconic works are the Guggenheim Museum in Bilbao, Spain, and Walt Disney Concert Hall in downtown Los Angeles. "Frank Gehry is arguably one of the most innovative designers in history, integrating design, art and community in such unique, pioneering ways," says **Qingyun Ma**, dean of the USC School of Architecture. "He acts as an alchemist – every city touched by his architecture is touched by his creative power. I am proud of the fact that he is a USC Trojan." *– Jeremy Schoenberg*

For the full story on Gehry's appointment, visit ***tinyurl.com/4bnzx6a***

A Conversation with **LAMONT DOZIER**

Producing New Talent

The American songwriter with the most No.1 hits finds inspiration eavesdropping in restaurants, watching soap operas and listening to the birds.

PHOTO BY PHILIP CHANNING

Lamont Dozier, a driving force in creating USC Thornton School of Music's popular music performance program, is one of music's most honored songwriters, producers and singers. Being part of the Holland-Dozier-Holland Motown hit-making machine for the Four Tops, Supremes, Marvin Gaye, the Temptations and others is simply one facet of his career, which thrives today with a Broadway-bound musical, The First Wives Club*, and more in the wings. He and wife Barbara are parents of Beau, Paris and Desiree, a 2010 USC grad now in law school. Dozier sat down with* USC Trojan Family Magazine's **Allison Engel**.

"Sugar pie, honey bunch" was something your grandfather used to say to women coming into your grandmother's hair salon. "Stop in the name of love" was your attempt at humor when things were rocky with a girlfriend. What were some other influences in your songs? A lot of the songs and ideas come from me being very observant and listening to people. I used to go into restaurants – I still do – and eavesdrop on people having conversations. I see lovers having quarrels and everything. Being a songwriter, I can't help but listen. It gives me great material.

There are plenty of people who wish they had written your songs, but are there a few songs you wish you'd written? Of course. Songs like Norah Jones' "Don't Know Why I Didn't Come." And all the songs of Marilyn and Alan Bergman. Or Michel Legrand. And then when I reach back, I love Richard Rogers and Lorenz Hart. The melodies those guys wrote! And Chopin. He was a pop melody guy of his time.

The early Motown style was sometimes called "crybaby style" because the man would be begging for love. Why did that hit such a nerve? They used to accuse me of having the ideas behind the songs be so pitiful. But if you notice, the music was always upbeat and gave you a feeling that it's going to be better tomorrow. Women were the record buyers in those days. They wanted to hear a guy emptying his heart out on his bended knee: "Baby, please don't leave me. Take me back. I'll do better next time." They loved that. That's universal.

Can you teach songwriting? Yeah. First you have to be a good listener and an observer. A lot of people don't know how to listen. They're too busy trying to tell you about themselves. Also, I find myself opening my window early in the morning to listen to the birds. And you know some of the sweetest melodies and counter melodies come from birds chirping and tweaking little rhythms and things.

Have you ever stolen a melody from the birds? I've borrowed a few ideas. I think all songwriters have listened to birds. I remember seeing a movie about Johann Strauss, the waltz king. He was riding through a forest and birds gave him the melody for "Vienna Woods."

What was your reaction to the USC Thornton students' showcase of Motown songs last semester? By the time these young artists get to the popular music performance program, they have weeded out all the so-so ones and have gotten to the really seriously talented people. The showcase went very well. Motown songs have so many different ingredients that songwriters need: concentration, knowing what to sing and how to express those songs. And that's an art within itself.

Do you compose every day? I write every day. Seven days a week. I'm at the piano by 10 o'clock. Then I write for a couple of hours, take a break to watch my soap operas from 12 to 2 and then get back to the piano at about 3 o'clock.

By then you've probably seen enough drama for the day. Have you written your amnesia song yet? (laughs) I've been watching *All My Children* since the day it came on back in 1970.

They should have you on the show. Yeah! That's my dream, to be in Pine Valley.

For many more of Lamont Dozier's observations, visit ***tinyurl.com/49mmd6c***

Lab Work

Stories Set in Stone

USC College researchers explore English cliffs to search for "beefy" clues from an ancient ocean crisis.

WHEN FOUR MEMBERS of the USC College Department of Earth Sciences took a fieldwork expedition to the United Kingdom, they didn't have to venture out in the middle of nowhere, drive on dirt roads for hours or hike miles to get to their destination.

Instead, they walked along the scenic coastline of southern England, where families frolicked on the beach and tourists scrambled over dinner-plate-sized fossil ammonites to look for treasures in the rock. The group even went out for ice cream when the rising tides chased them away from the cliffs they were examining.

"Usually you think of scientists doing fieldwork somewhere remote, but here, we were in a cultured, civilized area," says David Bottjer, professor of Earth sciences and biological sciences. "It was still an adventure. We had some predictions about what we might find, and we found those and more."

Bottjer, along with Frank Corsetti, associate professor of Earth sciences, and graduate students Sarah Greene and Yadira Ibarra, spent two weeks abroad in August 2010 looking for evidence of an ancient ocean acidification crisis.

The England trip was inspired by an earlier field study that had taken Bottjer, chair of the Department of Earth Sciences, and Greene to Canada in 2008 to study layers of rock representing the Triassic-Jurassic extinction event. This extinction occurred nearly 200 million years ago, wiped out about half of the living species including the majority of aquatic life, and may have paved the way for dinosaurs to dominate the Earth.

"One of the reasons we're interested in this global mass extinction is that it might have been due to something similar to what's happening today," Bottjer says.

When carbon dioxide is released into the air, the gas is absorbed by the ocean, creating carbonic acid and making the water more acidic. At the time of the Triassic-Jurassic extinction, volcanoes released the carbon dioxide into the air, whereas today, fossil-fuel-burning humans are the culprit.

Although there is still much debate about the causes of this mass extinction, the Earth sciences group believes that there is a link between ocean acidification and the extinction. By studying this ancient event, the team hopes to develop a better idea of how acidification might affect ocean ecosystems in the future.

While Bottjer and Greene were exploring an outcropping of rock at Williston Lake in British Colombia that contained these extinction layers, they discovered very strange layers of rock made of calcium carbonate. After returning to USC, Greene discovered descriptions in a few scientific papers of a similar rock found in England that the locals called "beef" because of the rock's thin, vertical striations that resemble a slab of steak.

"Originally, we thought this was a late crack filling, unrelated to the extinction," Greene says. "But now we don't think that's what happened at all."

Instead of a layer that formed millions of years later as the layers of rock split apart, Greene and the Earth sciences team propose that beef may have formed just after the sediment was deposited, resulting from excess dissolved calcium carbonate in the ocean.

With the help of a National Science Foundation grant, Bottjer, Corsetti and Greene scheduled a trip to England to gather samples of beef to explore their theory, and to find out if ancient ocean acidification was a global phenomenon.

Second-year Earth sciences graduate student Ibarra, who studies stromatolites in California lake areas, joined Bottjer, Corsetti and Greene on the trip. Stromatolites, which form in ocean floor sediment like beef, are finely layered structures that are a product of microbial activity, and many scientists consider them to be the oldest fossils on Earth.

So the group set off for a two-week tour of England and Wales, planning to visit sites where the ancient sediments are exposed and hoping to find both beef and stromatolites. College alumnus Michael Lewis, who received his Ph.D. from the Department of Earth Sciences in 2008, met the team in England as their official British host.

Operating out of a 19th-century house, they made daily excursions to locales such as St Audrie's Bay and Lavernock Point, where they had to time their beef-collecting trips with the tides. When the tides

OVERHEARD » "It's not really appropriate to shame someone before they are found guilty (posting mug shots of people arrested on Facebook). There's a little bit of a 'presumption of innocence' problem."

*- **Clare Pastore**, professor of law at the USC Gould School of Law, speaking to the Associated Press*

ILLUSTRATION BY TIM BOWER

were in their favor, they explored the exposed cliffs, where they chiseled away at the stone and collected samples.

According to Greene's theory, beef is formed during times of ocean acidification that can also inhibit an organism's ability to create shells.

The scientists hypothesize that the dissolved calcium carbonate from the shells partially re-precipitated as layers of beef in a process called diagenesis, the change that sediment undergoes after its initial deposition.

"We're suggesting that there might be information in diagenesis that's relevant," Greene says. "It's a new place to look at mass extinction events."

The researchers returned with 200 pounds of beef and stromatolites to continue their study, which they believe will show that the sediments were formed during the mass extinction, and therefore that the acidification of the ocean had a severe impact on the ecosystem at that time.

"What kind of story will the rocks tell us about what was going on at this time?" Ibarra asks.

The team's research into the causes and effects of ocean acidification has just begun, Bottjer says. "There are other trips to be had. The detective story continues."

– Laurie Moore

NATURE'S NANOWIRES

Hairy Science

From fighting tooth decay to growing fuel cells, microbial hair holds out lustrous possibilities.

SOME BACTERIA CAN GROW electrical hair – known as bacterial nanowires – that lets them link up in big biological circuits. This remarkable finding, by USC biophysicist Mohamed El-Naggar and his collaborators, suggests that microbial colonies may survive, communicate and share energy via conduction.

"This is the first measurement of electron transport along biological nanowires produced by bacteria," says El-Naggar, an assistant professor of physics and astronomy at USC College.

Knowing how microbial communities thrive is the first step in finding ways to destroy harmful colonies, such as biofilms on teeth. Biofilms have proven highly resistant to antibiotics.

The same knowledge also could help promote useful colonies, such as those in bacterial fuel cells.

"The flow of electrons in various directions is intimately tied to the metabolic status of different parts of the biofilm," El-Naggar says. "Bacterial nanowires can provide the necessary links … for the survival of a microbial circuit."

A bacterial nanowire looks like a long hair sticking out of a microbe's body. Like human hair, it consists mostly of protein.

To test the conductivity of nanowires, the researchers grew cultures of *Shewanella oneidensis* MR-1, a microbe previously discovered by co-author Kenneth Nealson, the Wrigley Professor of Geobiology at USC College.

Shewanella tend to make nanowires in times of scarcity. By manipulating growing conditions, the researchers produced bacteria with plentiful nanowires.

The bacteria then were deposited on a surface dotted with microscopic electrodes. When a nanowire fell across two electrodes, it closed the circuit, enabling a flow of measurable current. The conductivity was similar to that of a semiconductor – modest but significant.

When the researchers cut the nanowire, the flow of current stopped.

Previous studies showed that electrons could move across a nanowire, but did not prove that nanowires conducted electrons along their length. El-Naggar's group is the first to carry out this technically difficult but more telling experiment. He and his team are among the pioneers in a young discipline. The term "bacterial nanowire" was coined in 2006. Fewer than 10 studies on the subject have been published. El-Naggar was the lead author of the current study, which appeared online in *Proceedings of the National Academy of Sciences*.

In addition to El-Naggar and Nealson, the study's authors were Thomas Yuzvinsky of USC College; Yuri Gorby and Greg Wanger of the J. Craig Venter Institute; and Kar Man Leung, Gordon Southam, Jun Yang and Woon Ming Lau of the University of Western Ontario.

– Carl Marziali

Inquiring MINDS

» NANOSATELLITE BLAST OFF

All systems were go Dec. 8 at Cape Canaveral, where a newly developed Falcon 9 heavy-lift vehicle sent into orbit a packet of nanosatellites. Called Mayflower, the three-unit cubesat was a joint effort of USC, Northrop Grumman and other companies. USC supplied the unit named Caerus, the Greek word for "opportunity," to support communications. Mayflower is now orbiting Earth about every 90 minutes at an altitude of more than 300 kilometers.

» PROSTATE CANCER THERAPY

The National Institutes of Health have awarded a USC Norris Comprehensive Cancer Center research team a three-year, $1.6 million grant for a clinical trial of a new drug, AEZS-108 (AN-152), to treat advanced prostate cancer. The drug holds promise for targeting only the diseased cells and avoiding side effects. Prostate cancer is primarily a disease of older men, who often have other medical conditions, so the toxicity of medication is a great concern during cancer treatments, says principal investigator **Jacek Pinski** of the Keck School of Medicine of USC.

» ALZHEIMER'S STAR

Liqin Zhao, a researcher at the USC School of Pharmacy, has been honored by the Alzheimer's Association for her work on phytoestrogens, which resulted in the discovery of the phyto-beta-SERM formulation currently being tested in clinical trials. Her efforts at identifying and testing different phytoestrogens as a safe and effective alternative to estrogen therapy were outlined in "Perspectives in Alzheimer Science," a report recently released by the association.

» VITAMIN-RICH OCEAN

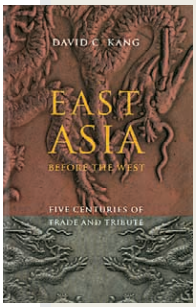
Where do B vitamins come from? "Some organisms, mostly bacteria, can make B vitamins, but everything else, including human beings, needs to get them from the environment, from food or water," says biologist **Sergio Sañudo-Wilhelmy.** He and colleague **Eric Webb** study the conditions that lead to the synthesis of B vitamins in the marine environment. Their research also has ramifications for climate change. The same organisms can convert carbon dioxide at the ocean surface into organic matter that settles on the ocean floor and can trap carbon there for decades or longer. ●

Find the latest USC science news at ***uscnews.usc.edu/science_technology***

Shelf Life

NewRELEASES

East Asia Before the West: Five Centuries of Trade and Tribute
by David C. Kang
COLUMBIA UNIVERSITY PRESS, $27.50

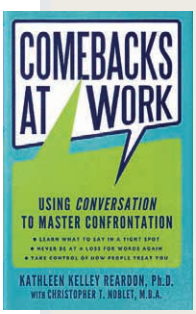


With China's growing global influence prompting fears of regional aggression, sinologist David Kang likes to call attention to this interesting fact: From the dawn of the Ming dynasty in 1368 to the the Opium Wars in 1841, China engaged in only two large-scale conflicts with its principal neighbors. Indeed, Kang argues that East Asian relations – while complex, vibrant and just as nuanced as European relations – were far less bellicose.

Lessons from the Holy Wars: A Pakistani-American Odyssey
by Rob Asghar
WHEATMARK, $16.95

This witty and thoughtful immigrant-family memoir offers such pearls of wisdom as this: "Happiness comes from letting people down." University communications professional Rob Asghar charts his own spiritual journey from moderate Islam to evangelical Christianity to none of the above. From his childhood in Pakistan to his undergraduate years at USC, he offers fresh insights into the causes of conflict within families and between cultures.

Comebacks at Work: Using Conversation to Master Confrontation
by Kathleen Kelley Reardon with Christopher T. Noblet
HARPER BUSINESS, $24.99

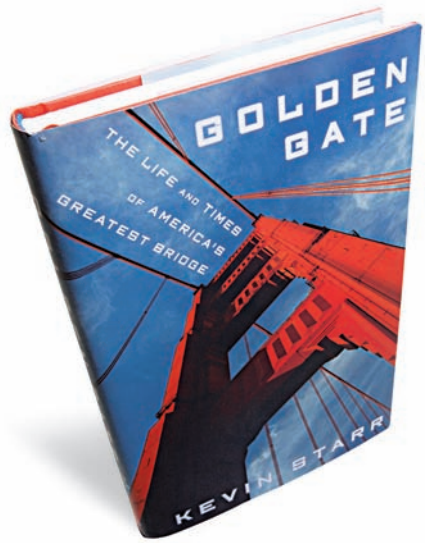


This handbook by USC business professor Kathleen Reardon breaks down the art of the comeback, emphasizing preparation, keeping your cool and handling conflicts constructively. Reardon offers strategies for telling when it's best to walk away and when it pays to engage. Readers also learn to hone their gut instincts, master facial expressions and beat the dreaded "comeback brain freeze." ●

Alumni author? Tell others about your book at ***alumni.usc.edu/news/authors***

Behind the Golden Gate

Quintessential California historian Kevin Starr retraces the birth, life and legacy of a timeless San Francisco landmark.



Golden Gate: The Life and Times of America's Greatest Bridge
By Kevin Starr
BLOOMSBURY PRESS $23

WHO WOULD have guessed that the audacity of a 5-foot-3 undergraduate trying out for football would lead to the creation of the landmark Golden Gate Bridge?

Yet that's just what happened. During his tryouts for the University of Cincinnati squad, Joseph Strauss was injured so badly he had to be hospitalized. From his infirmary room window, he had a clear view of the grand Cincinnati-Covington Bridge.

"Strauss had time aplenty to enjoy his view of the bridge," writes historian Kevin Starr in his latest book, *Golden Gate: The Life and Times of America's Greatest Bridge*. It took hold of Strauss' imagination "as a poetic engineering statement uniting beauty and practical achievement."

Speaking at his graduation, Strauss – who was class president – read from his senior thesis proposing a bridge across the Bering Strait. Forty years later, by then a highly successful bridge engineer, Strauss prepared to build that bridge across a different strait.

His original 1921 design was atrocious. Dubbed "an upside-down mousetrap," it drew the wrath of the Sierra Club and other opponents who claimed the jumble of trussed steel towers and gaudy superstructures would scar the majestic vista. In 1930, Strauss unveiled a new design for the longest suspension bridge in the world – 4,200 feet from tower to tower.

The result: "A structure of grace and beauty, emanating an almost supernatural amalgam of lightness and strength, its towers rising in Art Deco elegance against the California sky," according to Starr.

Starr's reverence is evident in the way he uppercases "Bridge" in each reference. The University Professor of History was born, raised and has lived most of his life in San Francisco. It is where he and his wife Sheila met, married and raised their two daughters. He even swam under the bridge as a member of the city's Dolphin Club.

"Living near the Golden Gate Bridge is like living on the site of the Hollywood sign or living in New York on the site of the Chrysler Building or the Empire State Building," he says.

Starr traces the bridge's construction history from the day work began (January 5, 1933) to the day it opened to pedestrian traffic (May 27, 1937). He tells the tragic story of the 10 construction workers killed when a platform gave way. He chronicles the politics and financing behind the bridge. A chapter is devoted to the bridge's troubling legacy. By the 1980s, it had become second only to Mount Mihara, a volcano in Japan, as a place to commit suicide. As of 2009, an estimated 1,300 people had hurled themselves off the Golden Gate Bridge.

ON A LIGHTER NOTE, Starr relates the history of the bridge's distinguishing burnt-orange color scheme. Consulting engineer Othmar Hermann Ammann had favored gray, the color he had used for the George Washington Bridge. Others wanted black. The Navy preferred yellow with black striping to increase visibility for ships traveling through fog. The Army Air Corps argued for red and white to enhance visibility from the air. While the debate raged on, a reddish lead-based primer covered

PHOTO BY MARK TANNER

the bridge to protect it during construction.

The primer, known as International Orange, caught on. It bespoke the gold of the Golden Gate, the gold of the Gold Rush that had created the Bay Area and the gold of the Golden Horn of the Bosporus, referenced by John Charles Frémont when he named the site in 1846. International Orange prevailed.

Starr outlines the contributions of others in the making of the bridge. San Francisco city engineer Michael Maurice O'Shaughnessy, for example, played a vital role. Yet at the bridge site, the only person remembered is Strauss, whose delicate frame – so ill-suited for football – is represented in bronze, dressed in a double-breasted suit, clutching a draft plan.

"Strauss, for all his faults, and there were many, was the impresario of the bridge," Starr says. "He was the Cecil B. DeMille of the bridge. He was the David Belasco of the bridge. Strauss envisioned the bridge initially. But the bridge ultimately was designed by a team."

– Pamela J. Johnson

I FEEL, THEREFORE I AM

Mind Games

Consciousness gets deconstructed by a humanistic neuroscientist.

Self Comes to Mind: Constructing the Conscious Brain
By Antonio Damasio
PANTHEON $28.95

HOW DOES THE BRAIN construct a mind? And how does the brain make that mind conscious?

That's the focus of USC neuroscientist Antonio Damasio's lifelong research and the subject of his latest book, *Self Comes to Mind: Constructing the Conscious Brain*.

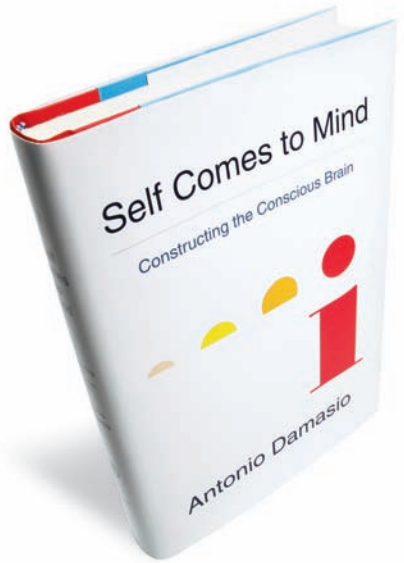
A prolific writer of scientific articles and books, including his international best seller *Descartes' Error*, Damasio starts over with *Self Comes to Mind*, having grown dissatisfied with his own account of consciousness. In this book, he discusses new and relevant research findings as well as what "we still do not know but wish we did."

He meticulously deconstructs the processes that lead to consciousness. The brain, he explains, uses specific mechanisms to produce consciousness – a function of mind and self.

The book opens with Damasio, who directs the USC Brain and Creativity Institute, en route to Los Angeles, waking up as the plane is preparing for landing: "I knew, almost instantly, with little hesitation if any, without effort, that this was me, sitting on an airplane," he writes.

However, Damasio cautions, consciousness does not happen instantly. Sequences recorded on brain scans show, for example, that if you wake up in a country several time zones from home, select areas of your brain will work together to bring you to full consciousness. "You wake up and it takes you more than an instant to realize that you are not in your bed," he says. "In several hundreds of milliseconds, you open your eyes, take in images that become increasingly vivid to form your proto self and receive a message of who you are from a high-level coordination of memory processes. The brain stem, cerebral cortex and memory act in unison in the complex mental process that tells us who we are and generates the feelings that are at the heart of being conscious."

Damasio believes humans are neither thinking machines nor feeling machines,



but rather feeling machines that think. Through evolutionary processes, he argues, the mind has combined emotion with the accrual of knowledge, logic and reasoning.

In addition to high-level reasoning, unique memory and rich language, what separates us from primates is a sense of autobiography. "We can look back at our past in great detail, including the places we have lived, a variety of events that are very marked, and we can create a memory of our anticipated future," he says.

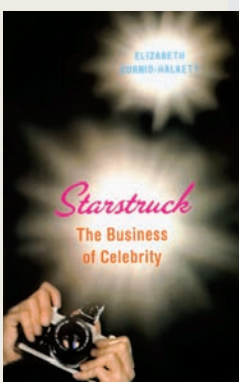
Released in November, *Self Comes to Mind* is already on several best-selling lists in Europe and is in its second printing in Spain and France. *Wired* calls it "a lucid and important work [that] scrambles all the conventional categories of the brain."

– Susan Andrews

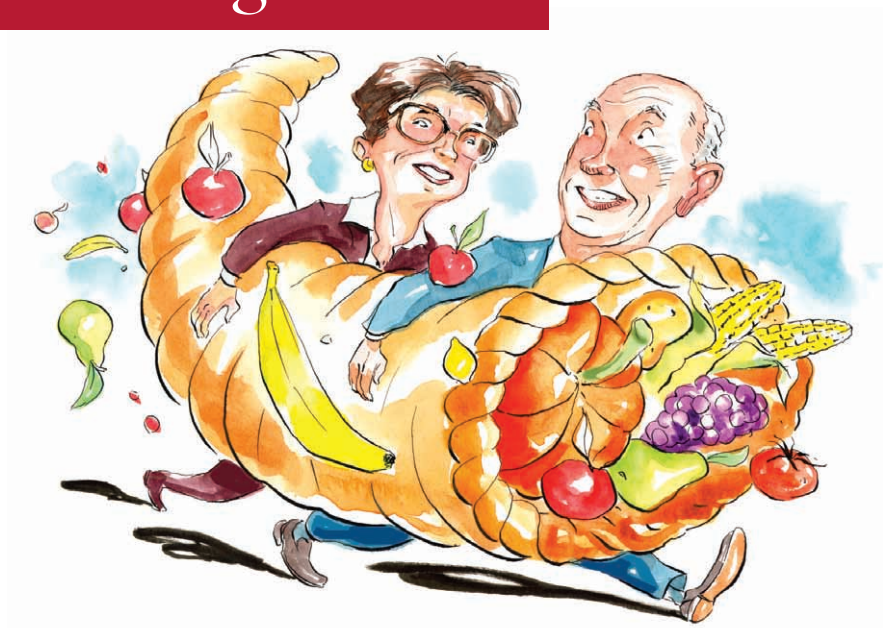
PHOTO BY MARK TANNER

[IN PRINT] Democratic Celebrity

In the age of YouTube, there isn't much difference between Angelina Jolie and the guys behind the Diet Coke and Mentos eruption. Celebrity has gone democratic. In *Starstruck: The Business of Celebrity* (Faber & Faber, $26), pop culture scholar **Elizabeth Currid-Halkett** probes the dynamics of present-day fame, explaining why we anoint some as stars but not others. "Celebrity is everywhere," says the assistant professor at the USC School of Policy, Planning, and Development. "Small-scale celebrity is a fractal version of mainstream stardom. Relative celebrities exist in all of our own worlds – in our hobbies, social groups and families." The new face of celebrity, Currid-Halkett contends, is a product of "the fusion of technology, free information and our need to bond socially." Our culture's insatiable consumption of reality television, the Internet and social networking has spawned the phenomenon of "democratic celebrity." *– Ariel Carpenter*



To watch a related video, visit ***youtube.com/watch?v=BTSOxPh6Xu4***



Taking It to the Food Bank

Clarke and Evans offer lessons for social service innovations from their 20 years of experience.

A NATIONAL ENTERPRISE we all take for granted – food banks – is getting a lot of attention these days, as a record recession straps home grocery budgets. But many Americans don't realize the extent of the effort that went into this public health success story.

Over the last 20 years, 156 food banks nationwide have stocked and distributed vast surpluses of fresh, nutritious produce that otherwise would have been dumped in landfills. This represented a revolutionary change in the operation of food banks, which traditionally stocked only canned and processed foods.

Transplanting that innovation from city to city did not happen on its own. Each program was initiated and nurtured by USC Annenberg School for Communication & Journalism professor Peter Clarke and his colleague, researcher Susan H. Evans.

The scholars stumbled upon this innovation in better nutrition in 1991, when they learned of a Los Angeles program started by veteran produce wholesaler Mickey Weiss. Clarke and Evans thought it would take a year to teach food banks about the value of produce and kick off a chain of programs. It took two years just to get the first one running.

Now, for the first time, they have chronicled their two decades of trial and error in the hope that other social innovators can learn from their mistakes and successes. In an article published in the current *Stanford Social Innovation Review*, the two recount their experiences in converting a nation of food banks into distributors of fresh food.

It may seem an unlikely project for two academics. Clarke was dean of USC Annenberg two decades ago and Evans was the school's director of academic development. But they saw an opportunity they couldn't turn away from. "We were looking at a potential major public health intervention the likes of which academic researchers can only dream," they wrote.

It wasn't easy. "For the longest time, we couldn't figure out what we were doing wrong," Clarke says.

The problem was that Clarke and Evans were trying to spark copycats of the Los Angeles program elsewhere. They landed a grant and held a conference, but after the first year, the participants had made no substantial progress. The researchers realized that each program would have to be tailored to overcome its particular obstacles in dealing with tons of perishable food.

They started in Baltimore, where they resorted to sending $1,000 of their own money to buy a food bank a new refrigerator and jumpstart a program. Next came Chicago, Dallas and Kansas City. Then Annapolis, Md., and St. Paul, Minn.

Clarke and Evans became experts in everything from refrigeration, warehouses and forklifts to trucks, trailers and the electrical panels of local soup kitchens.

Clarke and Evans hope the major lessons, recounted in their article, can influence an even wider field of innovators.

"There are all kinds of 'orphan' social innovations out there where people are doing something efficient and imaginative," Evans says. "If these talented and energetic people could learn from our lessons, they could make greater headway in getting these programs adopted in other cities across the country without the pain and struggle we endured."

– Gretchen Parker

[DOLLAR SENSE] Finance for Kids

What can elementary schoolchildren learn from MBA students? Priceless lessons in economics and basic financial literacy, that's what. On Oct. 1, nearly 170 full-time MBA students from the USC Marshall School of Business (including **Po Yu "Scott" Lin**, right) provided such instruction to 86 classrooms at the Charles Barrett and 93rd Street elementary schools in South Los Angeles. "Four hours can make a lasting impression," says **Jane Vaynerov**, who coordinated USC Marshall's participation in a day-long program sponsored by Junior Achievement of Southern California. "As future leaders, giving back to our community is one of the most important things we can do," says Vaynerov, who will graduate in May. *– Amy Blumenthal*

To learn more about USC Marshall outreach efforts, go to ***marshallc4c.com***

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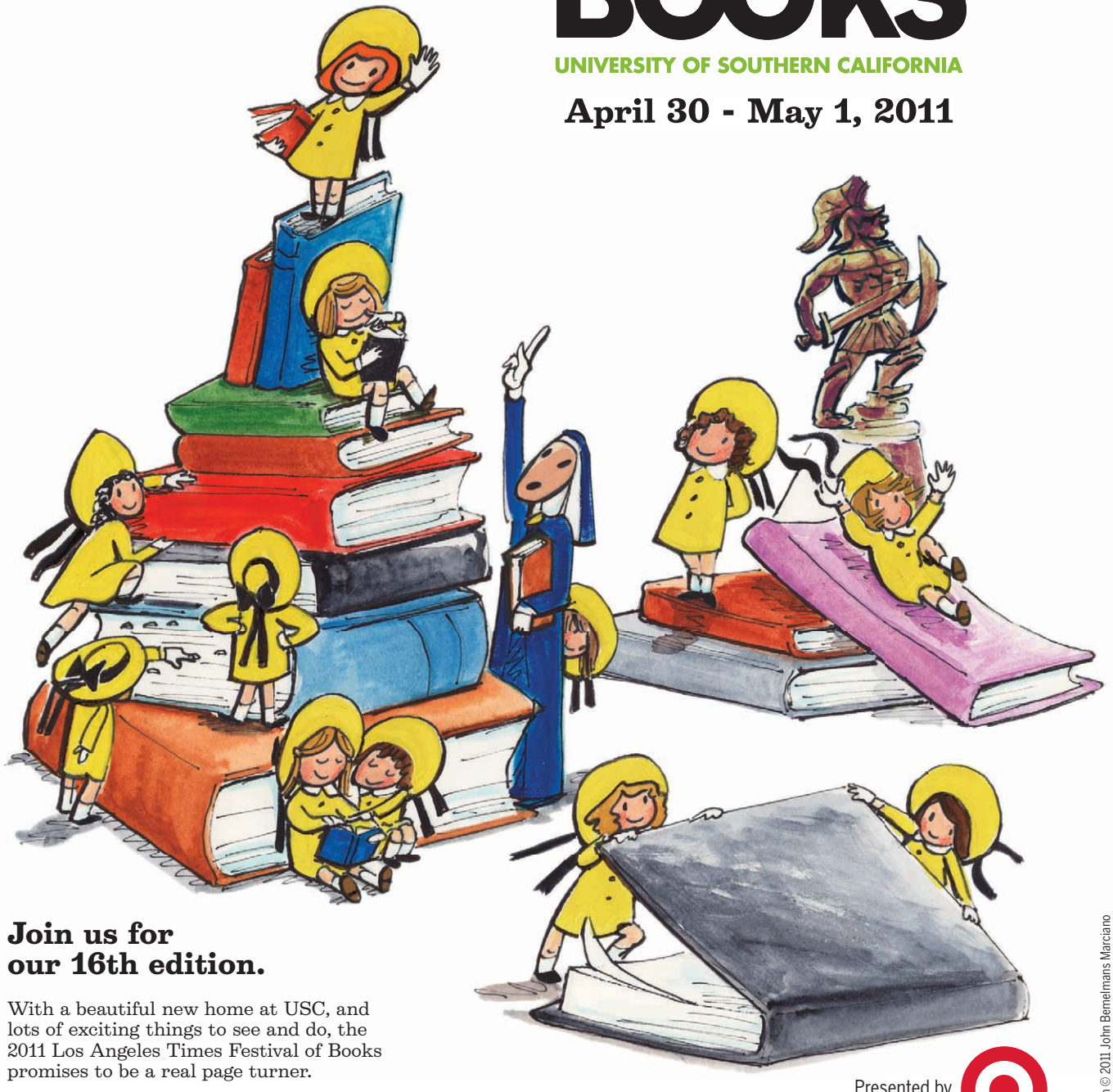

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HTE@USC

Reaching Toward the Biomedical Future

Thanks to nanoscale electronics, there's a revolution under way in the medical sciences. A new USC program joins engineering and medical students in the quest for miraculous devices to improve human health.

by Eric Mankin and Leslie Ridgeway

THE TWO YOUNG ACADEMICS sitting in a bare, basic conference room are smiling, excited, interrupting each other to talk about the project they are working on. The striking thing is that the source of their contagious youthful enthusiasm is not a new gadget (although one of them designs electrical devices) or a new business enterprise. Rather, George Tolomiczenko and Terry Sanger are redefining the educational program for two of the most venerable and human professions: medicine and engineering.

It is a project that brought Sanger from Stanford University to USC, and one that he and the Keck School

Professor Gerald Loeb has designed an artificial fingertip that can sense temperature, force and textures. *Photography by Mark Berndt*

of Medicine of USC and the USC Viterbi School of Engineering have been patiently nurturing for years.

It is now an official go: In August 2011, a class of 12 carefully selected candidates, half medical students and half graduate students in engineering, will begin studying and working together in a way never before done at any other university. In 2012 and beyond, the class size will double.

The program, HTE@USC (HTE stands for "Health, Technology, and Engineering"), is a major step in fulfilling a vision emphasized by USC president C. L. Max Nikias in his inaugural speech on the steps of Doheny Memorial Library last October. Nikias said he wanted "our Health Sciences campus and the University Park campus to represent one unified USC. … Our faculty and students must bridge the distance between the two campuses with interdisciplinary work."

Nikias often refers to the revolution in the making in the medical and biological sciences. "The queen of the sciences in the 20th century was physics – and as a result, electronics," he said during an address on the Health Sciences campus last August. But the very laws of physics limit the growth of conventional electronics, he continued, and electronics "will give up her crown to another queen in the 21st century. This century is poised to be the Age of Medicine and Biology.

"It is here that we will see the fastest-growing industries," Nikias told the gathering. "New technology can reshape medicine, with applications in drug delivery and patient care."

AT THE FOREFRONT in moving many of these new ideas from bench to bedside are USC scientists, engineers and physicians. Inter-disciplinary collaborations at labs across all campuses are yielding groundbreaking products that are already in the marketplace. One of the most astounding is a prosthetic retina developed by Mark Humayun and his colleagues that is restoring partial sight

A Combined History

Engineering and medicine have joined forces at USC for decades, in myriad ways.

HTE@USC is the latest program in a long and striking list of USC institutional efforts to bring together medicine and engineering.

On Oct. 15, only two weeks after the official announcement of the Health, Technology, and Engineering program, Ming Hsieh '83, MS '85, stepped to the podium at the inauguration ceremony of USC president C. L. Max Nikias.

Hsieh, whose $35 million gift to the USC Viterbi School in 2008 named its department of electrical engineering, announced that he was giving USC $50 million more, to establish a cross-disciplinary institute to combine medical and engineering tools to attack cancer.

The new institute will be the second at USC with this mission. The National Institutes of Health (NIH) are underwriting a national effort to bring new tools to bear on cancer, leading to the establishment of the USC Physical Sciences-Oncology Center, headed by W. Daniel Hillis and David B. Agus. Agus is a well-known medical specialist in cancer, while Hillis, who, like Agus, has appointments at both the USC Viterbi and Keck schools, has expertise in computer science. Hillis was a founder of Thinking Machines, Inc., and – surely an unusual résumé item for a cancer research director – director of research and development for Disney Imagineering.

Another direction comes from the epochal $57 million NIH grant, announced in June, funding the Los Angeles Basin Clinical and Translational Science Institute, led by Thomas Buchanan, the Keck School's associate dean of clinical research. Based at the Keck School, the institute's activity will cross to other schools, including USC Viterbi, where industrial and systems engineering professor Carl Kesselman directs the Center for Biomedical Information Systems, building on his collaboration with professors Agus and Hillis as well as his role as head of the NIH Biomedical Research Informatics Network Coordinating Center. That center works at making the exploding volume of research information more usefully accessible to biomedical researchers.

Yet another crossover medical engineering facility at USC is the Biomimetic MicroElectronic Systems (BMES) Engineering Research Center, established by the National Science Foundation in 2003. The central projects being shepherded by faculty members Mark Humayun, Gerald Loeb and Theodore Berger, who all hold joint Keck School and USC Viterbi appointments, sound like biblical miracles. In the words of then-USC Viterbi dean Nikias: "Our very ambitious goal is to help the blind see, the paralyzed walk and to restore the function of memory," by creating electronic systems that imitate (hence "biomimetic") the functions of living tissues.

The biomimetic center followed the initiative of biomedical entrepreneur Alfred E. Mann, who established his Institute for Biomedical Engineering at the university with a $160 million endowment "to foster the development of innovative medical devices that may significantly improve health and health care, to promote the application of new technologies in biomedical engineering, and to help in putting this technology swiftly into the hands of physicians."

Long before the Mann Institute's founding, USC was selected as the site of the Biomedical Simulations Resource (BMSR). This center, which continues today, is one of the most successful single medical/engineering research initiatives in the history of its funder, the National Institutes of Health. In 1985, the same year that Microsoft introduced Windows 1.0, USC Viterbi professors Vasilis Z. Marmarelis and

David Z. D'Argenio put forward the idea of using advanced systems modeling – a basic tool of engineering – in biomedical research.

All 15 of the world's largest pharmaceutical companies now use BMSR-developed methods and software as part of their process for testing new drugs. Thousands of scientists have attended training sessions held by BMSR to learn how to use BMSR software and other techniques to guide research.

Finally, BMSR would not exist here in the absence of the USC Viterbi School Department of Biomedical Engineering, founded in 1968 by then-dean Zohrab Kaprielian and Fred Grodins (the namesake of the department's annual lecture). "We are continuing to reap the benefits from the leadership of these two USC visionaries, who understood the promise of uniting medicine and engineering for improving human health," says D'Argenio. *– Eric Mankin*

George Tolomiczenko & Terry Sanger

The Health, Technology, and Engineering program grows directly out of Terry Sanger's unique career and vision. He is a physician (a pediatric neurologist treating children with cerebral palsy) and an inventor of medical devices. George Tolomiczenko, who is assembling the nuts and bolts of the program, combines a Ph.D. in clinicial psychology with master's degrees in public health and business administration.

The 21st-Century Doctor Bag

USC biomedical engineers and physicians are working on extraordinary new devices to diagnose and treat illnesses. Some examples:

Radiating Skin Cancer

A system of "pulsed power" technology utilizing intense electric fields is being investigated for the treatment of certain skin cancers, including basal cell carcinoma and melanoma, by Martin Gundersen, professor of electrical engineering at USC Viterbi, and David Sawcer, assistant professor of clinical dermatology at the Keck School.

Aiding Vision

Norberto Grzywacz, chair of the Department of Biomedical Engineering and director of the Center for Vision Science and Technology at USC Viterbi, is working on two devices to help those with visual disabilities – optical and molecular imaging methods for very early diagnosis of diabetic retinopathy, and new visual displays to improve the quality of life for people with age-related macular degeneration.

Eyesight to the Blind

Mark Humayun, of the Keck School and USC Viterbi, and his colleagues have developed award-winning prosthetic retinas (above) that are restoring partial sight to some blind persons.

Anti-Cancer Gold

Embedding energy-exposing microscopic gold particles in tissues can kill adjacent cancer cells – and also help image areas where cancer may exist. This work is being done in the lab of Michelle Povinelli, assistant professor of electrical engineering/electrophysics.

Continued on page 25

to the blind. (Humayun himself is a study in interdisciplinarity, as a professor of ophthalmology, biomedical engineering and cell neurobiology.) But his is not the only jaw-dropping device. Replacement arm muscles, silicon brain tissue, sensors to differentiate stable arterial plaque from dangerous heart attack-causing plaque – USC engineers and physicians are deep into a brave new world of medical devices. Some of the devices, such as the strength-dexterity system designed by neuromuscular researcher Francisco Valero-Cuevas, a professor of biomedical engineering and biokinesiology and physical therapy, seek to quantify movements as well as strengthen the neural pathways in the brain that enable dexterity.

Researchers are looking at serious virtual reality games as the delivery vehicles for these sensory-motor rehabilitations, which could promote successful aging with disability. This has the potential to synergize three of USC's particular strengths – cinematic arts, engineering and medicine. (To learn about more of USC's biomedical innovations, see pages 23 to 29.)

"Health care and technology are changing rapidly," agrees Keck School dean Carmen A. Puliafito. "Future physicians and engineers need the intellectual tools to stay ahead of this change." His goal is to train national leaders in the quest for devices and processes to improve health care.

USC Viterbi dean Yannis C. Yortsos notes that USC has long emphasized interdisciplinary work. "The synergies between medicine and engineering are natural, multiple and enabling," he says. "We have a good history of such interaction at USC." (See "A Combined History," on page 22.) But this new educational effort goes far beyond, and in a new direction. "We are delighted to be pioneering this path," Yortsos says.

Sanger, a medical doctor with a Ph.D. in electrical engineering who holds the title of Provost's Associate Professor of Biomedical Engineering, Neurology and Biokinesiology, methodically ticks off points of difference between HTE@USC and programs elsewhere. Stanford has a biodesign program – in which Sanger taught – with similar goals. But the Stanford program is a one-year research effort that enrolls participants who have completed most of their education. Making HTE a part – and a central part – of Ph.D. and M.D. training is new.

Another core difference is that HTE students will learn by working together to solve real medical problems. From day one, Sanger elaborates, "supervised matchmaking" will be used to group students into four-person teams of two physicians and two engineers who will stay together throughout the four-year graduate certificate program. (M.D. students will enter the program when they start medical school, while engineers will enter in their second year of graduate studies.)

The students will start by "finding the problems, then developing expertise to solve them," says Sanger. They will learn what they need to know while researching and inventing what's needed, helping each other along the way.

Collaboration, he emphasizes, is not just part of the program. In a crucial way, it *is* the program. The aim is not just to teach engineering and medicine, but to train engineers and physicians to collaborate effectively, because their teachers have coached and mentored them to work together. USC faculty, staff and others affiliated with HTE will guide the process of identifying problems, producing designs, creating and testing prototypes, and, ideally, applying for patents.

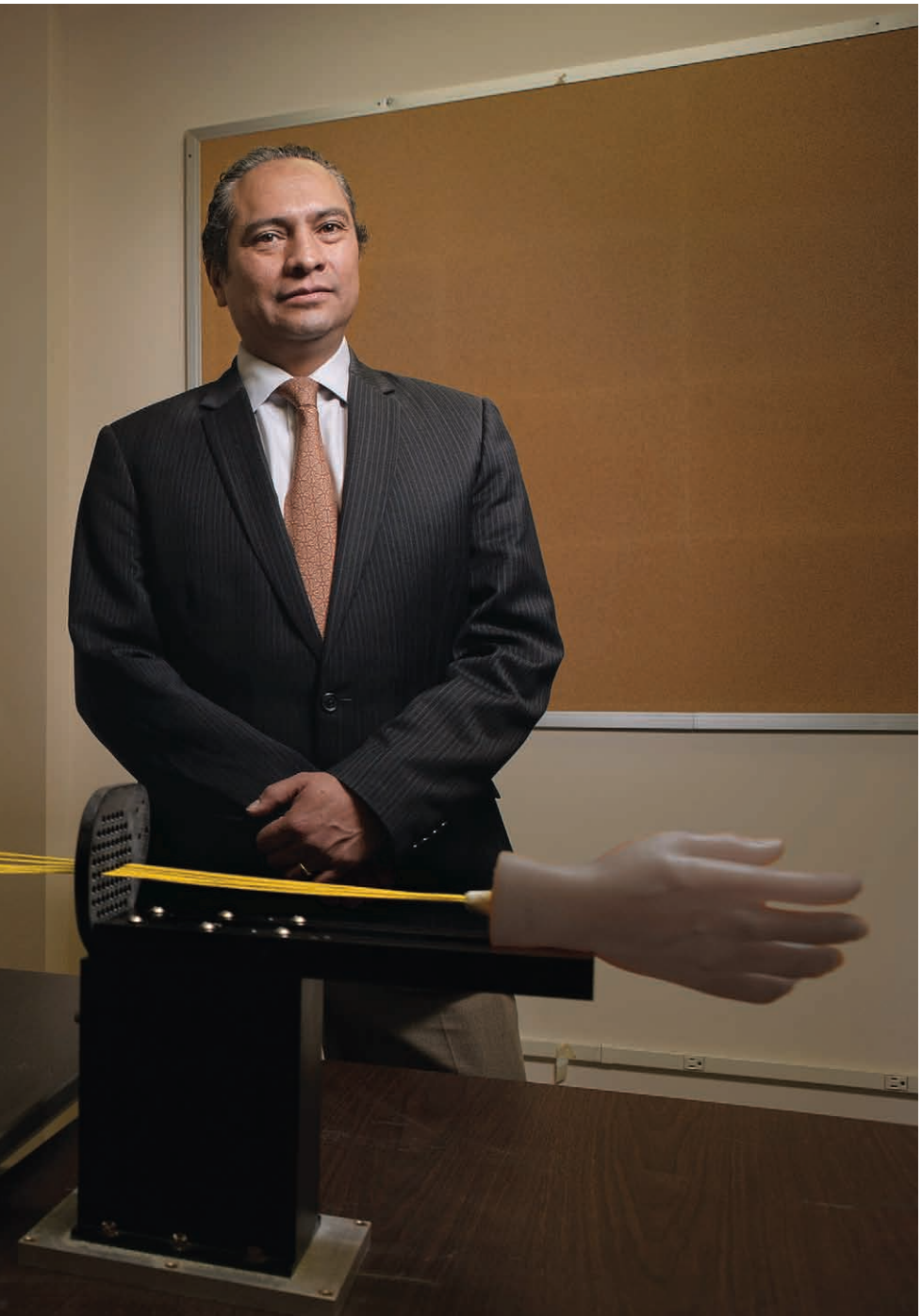
FOR STUDENTS, the time frame is right, says Tolomiczenko, the youthful HTE adminis-

Francisco Valero-Cuevas

Trying to create artificial hands, and help natural ones with nerve issues, is the mission of neuromuscular researcher Francisco Valero-Cuevas. His strength-dexterity system seeks to fortify the neural pathways that enable dexterity.

trative director who has been painstakingly assembling the institutional nuts and bolts of this unusual program. "Paul Diamandis says people reach their creative peak before they're 30," Tolomiczenko notes, referring to the X Prize founder who has been working with USC on various projects, including an X Prize class.

Tolomiczenko's background neatly supplements Sanger's: He is neither a physician nor an engineer. Rather, he combines a Ph.D. in clinical psychology with master's degrees in public health (from Harvard University, where he met Sanger) and business adminis-

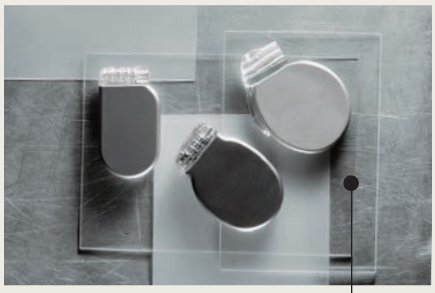


Windows of the Soul

Researchers in the lab of Laurent Itti, associate professor of computer science, are finding clues to psychological conditions such as ADHD by following eye movement patterns.

Virus and Bacteria ID

New laser devices developed in the lab of Andrea Armani, assistant professor of chemical engineering, can be exquisitely tuned to identify extremely small samples of suspect cells of viruses or cancers.



Don't Call Me in the Morning

Leslie Saxon, chief of cardiovascular medicine at the Keck School, implants defibrillators (above) that transmit data wirelessly. As founder of the USC Center for Body Computing, she is developing wireless monitors that surgeons can leave with patients.

Heart Disease: Treat or Operate?

A new sensor can examine arterial plaque in heart tissue, distinguishing stable plaque that can be managed from unstable plaque that demands emergency surgery. The sensor is the work of Tzung Hsiai, associate professor of biomedical engineering.

Cardiac Output and Blood Monitor

This technology, developed by Jean-Michel Maarek, associate professor of engineering practice, and Daniel Holschneider, associate professor of psychiatry, neurology and cell and neurobiology, injects fluorescent dye into a patient and uses near infrared light to measure the fluorescence at a specific point in the body. This technology can be used to detect hypotension before a patient undergoes dialysis or other procedures.
Continued on page 27

tration, where he specialized in "energizing interactions with students, faculty, staff and clinical personnel in a variety of settings."

Energizing interactions is, of course, the essence of the collaboration training.

As the description for prospective students notes: "Upon graduation from HTE@USC … you will also have begun lifelong relationships with a select group of students and faculty from very different backgrounds who will be your contacts and collaborators for future projects. Our graduates will look at health care with critical eyes, always thinking of ways to make processes and devices better."

The HTE program grows directly out of Sanger's unique career and vision. Sanger is both a medical practitioner (a pediatric neurologist specializing in treating children with cerebral palsy and other movement disorders) and an inventor of medical devices he can use in his practice.

In his office at USC Viterbi, he shows one such device, a sensor that vibrates when it detects nerve signals in the limbs of paralyzed

A Body that Computes

The USC Center for Body Computing welcomes more physician-engineers to the fold.

As the groundwork is laid for the HTE@USC program, one Keck School of Medicine of USC faculty member is particularly pleased to have more converts to the nexus of engineering and medicine.

Leslie Saxon, chief of the division of cardiovascular medicine at the Keck School, recently established the new USC Center for Body Computing, which has a similar goal to HTE@USC – encouraging innovation across disciplines to improve health care.

For the past four years, Saxon has hosted the USC Body Computing conference, which brings together leaders in health care, engineering, cinematic arts and other disciplines.

CEOs, academics, experts in technology and government officials discuss the future of wireless medicine, preview new interactive health care products headed for market and ponder the ethical issues surrounding patient privacy in the midst of the social media explosion.

In September 2010, Saxon founded the USC Center for Body Computing to formalize the work of the conference, actively pursuing product and policy development with a goal of making health care more accessible and effective for patients and physicians alike.

Saxon has worked for years with engineers and says she believes the cross training offered by HTE@USC is essential to pushing health care to the next level. "The presence of engineers on the Health Sciences campus and embedded within the medical school educational programs will really facilitate interaction and innovative projects between doctors and engineers," says Saxon.

"In my specialty, cardiac electrophysiology, training in engineering is a huge advantage as we deal daily with engineering issues such as signal processing, implanted device function, radio frequency communication and more," she says. "I look forward to incorporating the engineering students into our programs."

Saxon sees immediate opportunities for HTE@USC students to contribute ideas to products currently germinating at the USC Center for Body Computing.

"We are independently or co-developing several products within the center that require engineering expertise," she says. "These include wearable sensors that wirelessly transmit to devices, software engineering and design of minimally invasive diagnostic and therapeutic devices. We are also working with others to use game theory and games to fully engage patients. We have active projects that utilize social media to facilitate patient education and outcomes. All of these projects require engineering support."

By providing the bedrock for cross-disciplinary learning and research, USC is clearing the way to advance the future of the modern academic center, Saxon said.

Saxon envisions USC at the forefront of developing products and processes that help patients connect more effectively with their doctors, as well as new, fun ways for people to monitor their own health and the health of loved ones. HTE@USC students are in a unique position to lead the next generation of researchers from the planning stage into creating tangible results, she says.

"I expect we will have real projects, products and grant support that will establish USC's leadership in the expanding interface between engineering and medicine," Saxon says. "It's an exciting time."

– Leslie Ridgeway

Leslie Saxon

Shown with nurse-practitioner Grace Kang (left), Leslie Saxon checks on a cardiac patient, using an iPad to see data from a defibrillator Saxon implanted earlier. Saxon, chief of cardiovascular medicine at the Keck School, founded the USC Center for Body Computing, where researchers are developing wireless sensors as well as minimally invasive diagnostic and therapeutic devices.

children. The children, Sanger explains, have been unable to move muscles for so long that they often can't tell if they are sending a nerve signal. The device is meant to give instant feedback, so children immobilized since birth can learn to use their muscles.

Such devices are for him a way station on the route to understanding–and modeling– the extraordinarily complex machine that is a living patient. At Children's Hospital Los Angeles, Sanger looks at a tiny baby, a boy whose brain images he has spent the last 20 minutes examining with minute care. He speaks to the mother, asks questions about her pregnancy and the baby's longtime difficulties in breathing and getting enough oxygen, smiles at the baby, and pulls a small brass bell out of his pocket. He moves it to the left – the baby's head turns to follow it. He moves it to the right – the baby's movement is not as fast. Sanger pauses and thinks, engineer and physician at work, trying to understand the complex biological-medical phenomena he sees as a system.

SANGER REMEMBERS clearly when he first saw the concept that now has guided years of clinical and laboratory work and will illuminate the studies at HTE. He was a senior at Harvard majoring in applied mathematics, taking a course that included intense scrutiny of vision. "It was a course that looked at mathematical approaches to biological models of retinal processing," he says. "I was struck by the beauty of the mathematical explanations of vision. I loved the link between the mathematical model and the biology."

His specific research focus soon shifted from vision to motor control, as the movement of muscles triggered by nerve cells seemed more amenable to the mathematical tools and engineering models he wanted to bring to bear. After rapidly earning both a doctor of medicine degree (from Harvard Medical School) and a doctor of electrical engineering degree (from MIT, where USC Viterbi senior associate dean for research Maja Matarić was a classmate), he plunged into a concerted attack on child movement disorders and cerebral palsy, and was soon at the center of a major effort to systematize and organize definitions and understanding of the multifaceted disease.

Since 2001, he has been principal investigator of a National Institutes of Health Task Force on Childhood Motor Disorders, creating uniform definitions and measures of what has been a helter-skelter cluster of disorders.

His method is not to describe, but to under-

Beyond the Syringe

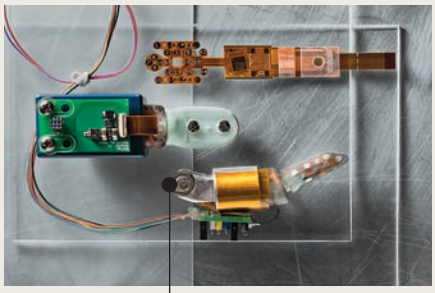
Microscopic devices that live inside the body and can deliver drugs and interface with biological systems are taking shape in the labs of Aristides Requicha, professor of computer science. Peter Will of the USC Information Sciences Institute has folded "mini-origami" containers to deliver microdoses of drugs.

Preventing Palsy

Terry Sanger, associate professor in the Medical Device Development Facility at USC Viterbi, is creating feedback devices to help children with cerebral palsy take back control of their bodies.

Plasma Super Toothbrush

Electrical engineering researcher Chunqi Jiang of USC Viterbi is collaborating with Parish Sedghizadeh of the Herman Ostrow School of Dentistry of USC on a "nanosecond pulsed plasma dental probe" that can destroy decay bacteria biofilms.



New Nerves

Arm muscle doesn't work? Try an implantable muscle stimulator developed by Gerald Loeb, director of USC Viterbi's Medical Device Development Facility. Above, Loeb's prosthetic fingers and internal electronic components.

Your Brain: What's It Up To?

Brainstorm software that can analyze real-time functioning is the brainchild of Richard Leahy, professor of signal and image processing at USC Viterbi.

How about Some New Brain Tissue?

Silicon may substitute for damaged amygdala cells, according to research being done by Ted Berger of the Center for Neural Engineering at USC Viterbi.

Continued on page 29

stand. "I distinguish," he says, "between using engineering to build a better device, and using the engineering way of thinking to understand disease.

"Medicine is very observational and very statistical," Sanger continues. "For example, we might see that for people with certain symptoms, some percent will get better if you give them a particular drug. It's inductive, pattern-matching and often very successful, but for some of these very complex conditions that are so multifaceted, it often breaks down."

The biological approach is based on experiments – and has a different set of limitations. The thinking is hypothesis driven, he says, and hypotheses tend to ignore the big picture. "You have a very straightforward question: Does an alteration in this chemical cause this outcome? But it's not about trying to model the system, it's about understanding how the system interacts."

The engineering approach is different: "To an engineer, understanding something means you know how it's built. For me to understand a disease as a engineer, I want to be able to build a robot that mimics that disease."

Sanger regards as critical a framework that can pull together the disparate elements and foster collaboration. And he is emphatic that USC is the place where he can help bring this to reality.

For one thing, USC is the home of many friends and colleagues who helped persuade Sanger to come. One old friend, neuromuscular researcher Francisco Valero-Cuevas, was one of the first to contact him, along with former classmate Matarić. He also knows and admires USC Viterbi neuroscientist Gerald Loeb and robot expert Stefan Schaal, and is a good friend of Bartlett Mel, an associate professor at the school's Center for Vision Science and Technology.

Beyond personal connections, Sanger says, "USC is very serious about the combination between medical, biology and engineering applications.

"A lot of places will say, 'If you're an oncologist and want to work with a molecular biologist, that kind of makes sense.' But if you're a child neurologist, and you want to work with an engineer, that's further out there. I think that USC really sees those links as equally important as the nontraditional links. I think it is because of the strength of the engineering program. And this really appeals to me.

"It's profound," he continues. "There are a lot of people who talk about medical engineering and transdisciplinary studies, but I think USC has really put a lot of effort behind it, has put its money where its mouth is."

THERE ALREADY ARE many examples across both campuses of biomedical engineers and physicians working on new devices to diagnose and treat illnesses. One notable effort is the USC Center for Body Computing. Established by Leslie Saxon, chief of the division of cardiovascular medicine at the Keck School, the center is developing several products that require engineering expertise, such as wearable sensors and minimally invasive diagnostic and therapeutic devices. (To learn more, see page 26.)

Linking engineering and medicine "is a fantastic marriage," says David Agus, co-director of the National Cancer Institute Physical Science-Oncology Center, established in October 2009 at USC. The center illustrates the HTE@USC effort to join engineering and medicine to meet a common goal – in this case, finding effective ways to control cancer. The center, established by a $16 million grant from the National Institutes of Health, has as its other co-director W. Daniel Hillis, a renowned technology innovator and entrepreneur who is a research professor at both USC Viterbi and the Keck School. Agus is a professor of medicine at the Keck School, with a joint appointment at USC Viterbi, and director of the USC Center for Applied Molecular Medicine and the USC Westside Cancer Center.

One of the top goals of the Physical Science-Oncology Center is to build what Agus calls a "virtual model" of cancer, using data and data collection to develop a new way to visualize cancer and model treatment effects. Students enrolled in HTE@USC will be key to reaching that goal, he says.

"Engineers look at new and different ways of describing a system," he says. "They see cancer and say: 'What is its shape and structure? For example, if I poke a cancer cell, how resistant is it to poking?' They are good at boiling things down to key elements and developing modeling systems from those elements. This is a new approach to try and control cancer."

That's one aspect of HTE@USC that appeals to Thomas Cummins, a Ph.D. student in biomedical engineering at USC Viterbi. Cummins, who plans to apply to the program, envisions a continuum of research enabled by bringing medical students and engineering students together to ponder the clues to controlling or eliminating disease.

"You need both sides of the story to conduct translational research," he says. "You

Mark Humayun

Mark Humayun, a professor of ophthalmology and biomedical engineering and cell neurobiology, studies the interface of biological tissue and electronics. The retinal prosthesis Humayun and colleagues developed evolved from a 16-pixel model in 2002 to a 60-pixel version in 2007, allowing wearers to recognize large objects. Scientists are working on a 200-pixel model, and say that 1,000 pixels is in sight.

need doctors to define the needs and engineers to provide the solutions. A classmate of mine, who is in his second year of medical school at Keck, agrees with me that there are things I know that he could benefit from, and things he knows that I could benefit from. … Many problems will become apparent by physicians and engineers talking to each other."

Cummins is attracted by the opportunity to shadow physicians in the hospital and operating room as part of the program. Agus says that meshes with the Physical Science-Oncology Center's ambitions.

"We want engineering students to be in the clinic with us," he says. "We want them to see cancer patients and see what they go through. We want them to live and smell cancer, so they are part of the process, not just studying textbooks."

Incoming Keck medical student Christina Yen, another prospective HTE@USC participant, applauds the program's potential to transform health care into a pathway of discovery that pushes the limits of what is considered possible today.

"Based on my personal experiences in the lab and the clinic, the future of medical progress must come from integration between disciplines," she says. "This program could lead to new discoveries in bioengineering and the medical field and revolutionize the way we perceive medical and engineering education and discovery in the future."

Students accepted into the program are the kind of people who aren't satisfied with things the way they are and are excited by change, says HTE@USC administrative director Tolomiczenko. The entrepreneurial aspect of the program, plus the enthusiasm and support for research and development at USC, will give these students the tools and contacts they need to turn groundbreaking ideas into real solutions for health care improvement.

"These students want to see the impact of their creativity and ingenuity on a short time line," he says. "That's why people pick engineering. They want to make a change in the world and see the difference they made. That connects with physicians – who want to help people and also see the difference they made."●

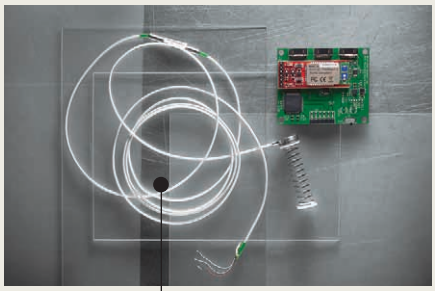
If you have questions or comments on this article, please send them to magazines@usc.edu.

Image without Radiation

Ultrasound, which is not dangerous to cell tissues, soon may detect different organs and cancers in three dimensions, according to Jesse Yen, associate professor of biomedical engineering. The development of new high-frequency ultrasound transducers by Kirk Shung and his colleagues at the ultrasonic transducer resource center and the Department of Biomedical Engineering is increasing the spatial resolution of the images and allowing tissue manipulation. Vasilis Marmarelis, in the same department, is working on another ultrasonic technology, multiband ultrasonic transmission tomography, which has shown capacity for better resolution of lesions in breast cancers.

Speak, MRIs

Magnetic resonance imaging is widely used, but better software and analysis can improve the results and expand applications to new areas, including the heart, vocal dynamics and even obesity, using research under way in the labs of two professors in the USC Viterbi Signal and Image Processing Institute: Shrikanth Narayanan and Krishna Nayak.



New Hands

Five fingers and a wrist make a very complicated system. Francisco Valero-Cuevas, associate professor of biomedical engineering, has developed a strength-dexterity system (above) to quantify movements and fortify neural pathways.

24-hour Imaging

Taking medical snapshots of people while they are engaging in day-to-day activity is the challenge undertaken by Hossein Hashemi, associate professor of electrical engineering/electrophysics.

USC Trojan Family Magazine invited three media scholars from the USC Annenberg School for Communication & Journalism to a roundtable discussion on video games. The focus was on massively multiplayer online games such as *World of Warcraft*, which today dominates the industry with more than 12 million subscribers. Can these notoriously violent outlets for adolescent fantasy be a force for good? Our expert panelists unanimously think they can. And they ought to know. **Henry Jenkins** is one of the founding fathers of "games studies" and was recently named one of the "top 10 brains of the digital future" by *Prospect* magazine. He spent much of his career at MIT, where he was the founder and co-director of the Comparative Media Studies program. The author of 14 books, including *From Barbie® to Mortal Kombat: Gender and Computer Games* (1998) and *Fans, Bloggers, and Gamers: Exploring Participatory Culture* (2006), he joined USC in 2009 as a Provost's Professor. Associate professor **Douglas Thomas** is founding editor of the journal *Games and Culture* and the author of *Hacker Culture* (2003), a study of the cultural, social and political dimensions of computer hacking. **Dmitri Williams** has published more than 40 scholarly articles on games. An associate professor, he was the first researcher to use online games for experiments and to undertake longitudinal research on their effects.

After the Columbine massacre, there was a panicked backlash against video games. Dmitri and Henry, you gave expert testimony placing yourselves as defenders of games.

Dmitri Williams I have to be very careful. I don't consider myself a defender of games. I can name lots of research that suggests games have deleterious effects. But I tend not to think of games as pervasively bad, or any more or less bad than books or television.

Henry Jenkins The nature of a hearing room is that you're either a defender or a critic. As academics, we are much more likely to take a moderate position on such matters. In this particular case, after Columbine, I was less concerned about games being regulated than about the impact on young people – gamers, Goth kids, kids who were different. We were seeing lots of reports coming out post-Columbine of kids being put into therapy because they liked to play video games. Of kids being punished for wearing certain symbols attached to games or Goth culture to school. What I was defending before the Senate was the rights of kids to be different, to find themselves.

Deep Play

Three communications scholars hew through a thicket of misconceptions to show how online games, far from corrupting our youth, may help salvage our failing schools, take the guesswork out of economics and even bust up drug cartels.

Interview by Diane Krieger / Illustrations by Charlie Griak

Douglas Thomas I think I'm in a very similar position to Henry and Dmitri. One of the problems we have in defending games is that the people out to attack them are such absolutists. You don't fight fascists by being in the middle. You get somebody like Jack Thompson …

Who is that?

Thomas He is – was – an attorney in Florida. He was disbarred two years ago. If anybody in any way has been injured by a game, he's at the doorstep wanting to sue for millions. He writes personal letters to the CEOs of game companies accusing them of hate crimes.

Williams A few years ago, I got to testify before the Senate right after one of Jack Thompson's clients. There had been a horrible real-life accident, which they were trying to blame on games. This guy gives a long speech about how games killed his family and *Grand Theft Auto* causes death in the real world. How do you take the middle ground there?

Jenkins I saw a headline in the newspaper the other day. It said: "Teenager Killed by Game." It turned out it was by asphyxiation, with a game involving ropes.

Where does it come from – this notion of games as dangerous things that corrupt our youth?

Williams Games are part of a long tradition going back to swing music, rock 'n' roll and comic books. New technology is disruptive and scary because it takes away people's sense of control and stability. If you can watch kids and know what they're doing, then you don't worry as much. But add a technology like the transistor radio, and suddenly they're not listening to music in your living room. Now they're listening to music with each other in a car, and it's a dark space, and God only knows what else they're doing. We really weren't worried about rock 'n' roll or the transistor. What we were worried about was race, sex, age and change.

Games have certainly been no exception. I testified in *Entertainment Software Association v. Blagojevich*, challenging Illinois' ban on the sale or rental of violent games to minors. I was specifically talking about whether or not the case had been proven. It's a very murky area. There are now two dozen similar laws around the country. The Supreme Court heard arguments on the California law last November and is expected to hand down its decision in June.

Sticks and stones

There are strong parallels with 19th-century boys' backyard culture and present-day video-game play. The difference is, in the 19th century, boys really did beat each other up, throw bricks at each others' heads and have physical battles. Now these battles are virtual. If we take a long historical view, the themes are the same. Actual violence has been displaced by virtual violence or fantasies of violence.

You did a study that showed conclusively that games do not actually increase aggression.

Williams It was part of my dissertation. There's been about 30 years of research on people who come into a lab and play a game for about 15 or 20 minutes. Afterward, researchers would find that Billy's more likely to punch Johnny. Looking at this research, I said to myself, "It's weird that people are coming into labs because that's not where we play. And it's weird that they're only playing for 15 or 20 minutes." In fact, nobody had ever done a study on game effects past 45 minutes.

So I did one where the average exposure time was about 60 hours. In that, I didn't see any aggression effects. In fact, it started going in the other direction. Granted, this wasn't with kids, and it wasn't a first-person shooter game.

Now there's a strong case for short-term effects of aggression. There's a body of work showing that when people come out of an exciting game session, they're pumped up. But we've known that about other media for a long time. When you leave a motion picture, the excitation can transfer into other stuff in the parking lot. That's very different from saying, "This destroys moral values, this will turn our kids into killers."

The long-term effects – the cultural ones, the deep ones, the personality-changing ones – are still up in the air. We don't have many answers.

Personally, I think if you want to know what the effect of something is over a week or a month or a year, you have to study it over a week or a month or a year. My study did that. We need about 10 more like it to be able to say something definitive.

Jenkins If you look at games historically, there are two important parallels to think about. The first is an ongoing anxiety about role-playing – what people describe as the anti-theatrical bias. Plato tells us actors are dangerous, both because they lie and because they begin to believe their own deceptions. This double anxiety about playing a role and confusing that role with reality is deeply rooted in our culture. It's the same anxiety that surrounds "cosplay" and fanfic and avatars. (See glossary on page 33.) Taking on an identity other than their own, do people really know that they're playing? After Columbine, we were afraid that fantasies were spilling over into reality with deadly effects. We were trying to figure out what was in the heads of "the monsters next door."

The other historical parallel to keep in mind involves a set of transitions in the games industry. As video games go from a child's medium to a product for adult consumers, the content shifts, but the public perception stays the same. People look at violent and gory games and wonder why game developers are creating this disturbing content for children. But the developers aren't targeting young people. They are very much about preserving the interest of more mature players.

This is what happened with comics of the World War II vintage. They moved from a children's medium into something that GIs carried with them on the battlefield. And after they returned from war, these veterans continued to read comics. So we got waves of crime and horror comics that were primarily reaching more mature readers. They were full of social satire and commentary. The pushback came at that moment when a children's medium was trying to become a more mature medium. The Comics Code held comics hostage for 20 to 30 years of self-regulation, preventing them from achieving the depths they were capable of fulfilling as a medium.

So if I defend games, it's not because I'm defending the interests of the games industry, but because I see games as a medium capable of a broad range of expression. And when we give ourselves over to fear and regulate adult content to only that which is appropriate for children, we stifle the growth of new forms of human expression.

Williams I think it's important to ask in any line of media inquiry involving new technology: What is it replacing? People usually look at the new thing in isolation. Are video games good or bad? Are comic books good or bad? That's the wrong question. It should be: Are they better or worse than what they displaced? So what did games take the place of? For a big chunk of gamers out there, it's television. That's an important piece of context.

Thomas With games, there's something very powerful going on that's threatening to people who don't understand these spaces. Dutch historian Johan Huizinga wrote a book in 1938 called *Homo Ludens*, which means "man, the player." His argument was not that play is part of every culture, but that culture actually emerges from play. Play is the most fundamental aspect of who we are. And if we look back at certain games, they come from pretty hideous places. Look at lacrosse: It used to be played with people's heads. Games are oftentimes proxies for war. They can be fiercely competitive; they can be about killing others. Look at football, either American or European. So I think people are right to look at them and say, "There's something pretty intense going on here." If you don't

understand it, that's terribly frightening. That's what we have to be defending at some level, and it's sometimes tricky.

Jenkins Historian Anthony Rotundo wrote an account of 19th-century boys' backyard culture, and there are strong parallels with present-day video-game play – the fisticuffs, proving mastery by beating each other up. The difference is, in the 19th century, boys really did beat each other up, throw bricks at each others' heads and have physical battles. Now those battles are virtual. If we take a long historical view, the themes are the same. Actual violence has been displaced by virtual violence or fantasies of violence.

Thomas I made that argument in a book I wrote about computer hackers, using Anthony Rotundo's work quite extensively. Hacking is a snapshot of boy culture.

One of the great pleasures of games is that they are subversive. Video games are often described as either player-versus-player or player-versus-environment – PvP or PvE. The thing we never talk about is that they are actually PvD – player-versus-developer. There's this sense that somebody has designed an exercise for you that's a challenge, and your goal is to get past that challenge and outsmart that person. This is an environment where being subversive – outsmarting, tricking, finding the easiest way to do things, using the virtual world in unique ways, being clever and improvising – is part and parcel of the pleasure of play.

Williams Kids love being subversive. That's what play is all about.

And yet online games aren't only about being subversive. Doug, you have done research that says massively multiplayer online (MMO) gamers make great employees.

Thomas They do. They are learning to manage themselves in a world that is in constant flux – a skill set that will make them good employees of the 21st century. In our study, former Xerox chief scientist John Seely Brown and I looked at guilds in *World of Warcraft* to see the kinds of people who are attracted to these spaces. What makes for good players? What qualities do they have? We found that they're people who like change. People who like creating solutions and problem-solving. They're bottom-line oriented.

Harvard Business Review *cited this research as a Breakthrough Idea of 2008. Are employers on top of this finding?*

Thomas Some are, some aren't. One of the things that's really fascinating to me about guilds is that they cost nothing to join and they cost nothing to run, other than your time and your subscription to the game. But here's a space where somebody – maybe an 18-year-old kid – can become a leader. You can't walk into IBM and say: "Hey, I'm 18 and I'm here. Let's see what I can do."

The MMO guild is almost like a sandbox, or laboratory. There's this unlimited ability to find who you are – not only to learn that you're a great leader, but also to learn that you're not a great leader, but you're really good at some other part of being on a team. Because you're more self-aware, hopefully you're going to pick the kind of job, the kind of education, the kind of work group that will allow you to express those skills.

Jenkins Doug is focusing on individual skills, but it's also about collective skills. What you discover in guilds is that people have multiple strengths and need to work together to solve complex problems that are bigger than any one character's abilities to solve. The long-term implication for that would be, rather than companies preferring gamers in their hiring decisions, maybe they should hire subsets of guilds: people who already work together, already pool knowledge well, have developed habits in relation to each other. We've got a team-driven workplace. Why not hire units bigger than the individual to sit within that workplace?

In *Bowling Alone*, Robert Putnam wrote about the decline of civic engagement in the era of television. Well, whatever is going on in *World of Warcraft*, it's not bowling alone! The guild structure suggests strong social ties, mutual responsibilities, opportunities for leadership, that can feed back into civic involvement.

I was in Chile recently and met with a national senator who firmly believes that *World of Warcraft* is the key for Latin Americans to gain greater access to power and influence in the modern era. He's running leadership camps for political and business leaders to learn – while playing *World of Warcraft* – how to participate in a global community with real stakes in the decisions they make.

Thomas Given the thesis that the world is starting to look more and more like an MMO, and less and less like a traditional institution, what does that tell us about education in the 21st century? You talk to any kid who's reached sixth grade, and all of the joy of learning is gone, all the playfulness, all the curiosity. They're learning how to be good, disciplined subjects within the institution of education. Games are exactly the opposite of that. The institutions themselves are completely fluid, constantly changing.

You're implying that the games do what schools do, only better.

Thomas They do things rather differently. I don't think we should replace all of our schools with MMOs. There are lessons to be learned from what's happening not just in MMOs but in everything that circulates around them – Facebook, Web pages, guild portal sites, databases.

If you look at our schools, the model of learning has been about transferring. The teacher stands in front and tells the students what they need to know. Then the teacher gives them a test to see how much of it they got. That's great if knowledge is a consistent thing. But in today's world, the knowledge system is changing fast. So the idea that schools can simply teach facts is starting to break down.

I had a very interesting experience with this. I had read a Gallup poll that said 70 percent of students couldn't find Iraq on the map. I thought that sounded exactly wrong. So I went to a computer lab with 20 of my students and asked them, "Can you find Iraq on a map?" And they said: "You want an aerial shot? You want just Baghdad? Would you like me to zoom in on the streets?" They had no problem finding Iraq on a map. It's just that they didn't do it in the way schools taught it. Geography for them has been much more about where you find information than what you know. That's the lesson our schools need to take and start adapting.

Henry, you have done work with MIT's Education Arcade developing projects like Revolution, *a role-playing game where schoolchildren take on the identity of characters in colonial Williamsburg.*

Glossary of Terms

Cosplay – short for "costume play," a type of performance art in which participants dress as characters primarily from Japanese comics and cartoons

Fanfic – fiction written by fans set within an existing media franchise

Gold farmers – players who sell in-game possessions for real-world currency on a virtual black market

Guild – (also called "clan") a group of players who work together to defeat a powerful enemy, participating in regularly scheduled missions called "raids"

Hawthorne effect – a form of reactivity whereby research subjects improve or modify an aspect of their behavior being experimentally measured simply in response to the fact that they are being studied

Healer and **tank** – classes of characters in gaming (Tanks – also known as meat shields – attract enemy attacks toward themselves to protect allies; healers restore allies' health to delay or prevent their defeat.)

MMO – massively multiplayer online games, such as *EverQuest* and *World of Warcraft*; sometimes also called MMORPG, for massively multiplayer online role-playing games

PvP or **PvE** – game design pitting player-versus-player or player-versus-environment

Jenkins My work for the Education Arcade is largely ancient history, but the example of *Revolution* is an interesting one. We basically took *Neverwinter Nights* and created a layer over it. What we were hoping would happen, and it did happen, was that each kid would have a different experience of history. Of course, role-playing games have been part of the social studies curriculum for a long time. *Model United Nations* is a classic role-playing game. The vision that came out of the Education Arcade in general, and *Revolution* in particular, was that the metagame – the discussion around the game – is as important as the game itself. Being part of a community that has undergone a powerful play experience – one that catalyzed students' imagination and motivated a range of other research and learning – is what made it exciting.

Is that taking off at a commercial level? Are we starting to see these sorts of tools integrate into classrooms?

Jenkins The space of games and learning has exploded over the last decade. Eric Klopfer and Scot Osterweil, who now run Education Arcade, have released a number of games through Maryland Public Television. The Department of Education has a new call out for transmedia learning experiences, including games for teaching math and literacy skills. Kurt Squire, who started the Games-to-Teach Project with me at MIT, found that when you embed a video game called *Civilization* in school, hundreds of the terms on national history standards emerge more or less organically from playing the game. The textbook becomes a cheat book. Kids were sneaking into the classroom and looking ahead in their textbook to see what the Vikings did.

Thomas All of this can be summed up with one question: What's the opposite of work? Play. Most people in education live by that dichotomy. There's almost a sense that study shouldn't be pleasurable. Which strikes me as an absurd thing to say. Everything we know about childhood education tells us exactly the opposite: that kids have enormous amounts of fun when they're learning. It's not until they get to school that they learn that learning's not fun.

Jenkins I like the word "engagement" rather than "fun."

It's a word educators can recognize and respect. And in games, you're grinding an awful lot. There are plenty of moments when the first thought in your head is not, "This is fun." It's something you're willing to do and keep doing in order to get to the point where pleasure is the reward.

Williams The difference between work and play is that in play – role-play in particular – you're allowed to fail. And our students are deathly afraid of failure. Video games are algorithms. You're failing over and over and over till you learn how to do it.

Jenkins If we think about ways to succeed in a game, there are multiple routes to solving any problem. The school is saying everybody has got to succeed in the same way, by the same standards. It's not as open to alternative ways forward as a good game is.

Thomas A good game allows you to set your own standards for success. Say you want to be a great healer. That doesn't say anything about your ability to tank.

Jenkins The model of collective intelligence depends on people having ownership of different kinds of skills and expertise that they bring to the group dynamic. That's the opposite of what our schools do. Students are measured a failure if they don't know the exact same thing as the person sitting in the next seat. We create a hierarchy that values some skill sets over others.

Thomas Good games have that sense of engagement and being able to direct the passion. But we need to recognize, in terms of games and education, that it's hard to make a good game. I've actually co-designed a couple of games now. People come to me and say, "The equation is very simple: Kids will play eight hours a day. My research is very important. Therefore, if I put my research into a game, they'll play it eight hours a day and learn all about it." The problem is that their research doesn't make a good game. It doesn't grab the kids' passion, it doesn't give them something to be engaged with.

What about virtual worlds, like Second Life, *as a platform for better education? Schools and universities are tapping into this.*

Jenkins There are good reasons to use virtual worlds. It's a good space to create a sense of telepresence for people who are geographically scattered. It's a good way for simulating or modeling certain things that would be difficult to directly engage with in the classroom. But we've seen an awful lot of experiments with *Second Life* that amount to creating the equivalent of a classroom in a virtual world for no good reason. That's not going to enrich the educational experience.

Thomas I was talking to some people at the State Department who wanted to use *Second Life* as a way to promote American culture across the globe. My first question to them was: "Why not just do this on a YouTube video? You get a million hits of people watching a jazz concert, instead of 40 people wandering by over a three-month period." They said, "No, no, no, we've got to do this in *Second Life*."

Williams The hype around *Second Life* has been almost as bad as the backlash to the hype around *Second Life*. I think it's a really innovative, powerful toolset when used in the right way. But it's not going to replace e-mail, it's not going to replace the telephone, it's not going to replace face-to-face conversation. It's a niche.

Jenkins One way of thinking of it is not as a niche but as a function. People say: "Look at all the turnover in *Second Life*; most people pass through it and don't stay there." Well, think about all the turnover at Disneyland, all the people who pass through it and don't stay there. Maybe settlement is the wrong model. Virtual worlds are not a place where we will live. The business model has got to reflect that occasional-use strategy in the same way that Disney theme parks do. No one expects people to camp out at the Pirates of the Caribbean ride for the rest of their lives.

Thomas There is something visceral about having an avatar in *Second Life* walking around that experience. There's a feeling that you're there with other people. I don't know if you guys had the same experience, but even in *World of Warcraft*, when you're in the cave with Onyxia, you are there with 39 other people.

Williams The science that describes this is called "presence" – the feeling that you are there, or that the agent with whom you are interacting is real. If I see a hand on the screen, it feels like my hand. There's been really good research in this area by Jeremy Bailenson and his Virtual Human Interaction Lab at Stanford. They have been figuring out what kinds of interpersonal activities do in fact "map up" to *Second Life*. Personal space, eye-gaze, height and gender – a lot of these things do translate from real life to *Second Life*. The more that maps in, the more it can be a mirror of real life. But who said that was the goal? The goal isn't to recreate the classroom experience. That's a waste of time. Can you do something different, thinking laterally?

Thomas Nobody's been able to figure out a clever way to get some benefit from that sense of presence other than: "It feels kind of cool." One thing that's sorely missing from education is imagination. In fact, I think imagination oftentimes is penalized. *Second Life* really is a world that's only governed by your imagination. It has a few physics rule sets, but if you have any skill at all, you can build some pretty amazing things.

Jenkins An architecture school in Australia had an assignment using *Second Life* that I thought was really clever. One of their challenges is getting students to respect human culture and human demands on architecture. Forcing them to design a building for a world where people can fly defamiliarizes that. It forces them to think about

Gold fingers

In virtual worlds, people are hacking into others' accounts or engaging in a banned activity called gold farming, or real-money trade. It turns out that gold farmers are organized like drug cartels, arrayed in hub-and-spoke networks, just like we all are. Could you use these network signatures to find bad guys in real space? The answer is yes, if you had the correct data and could get past all the ethical issues.

humans as behaving differently. Once they've done that, they can think about what it means to design a building for people who walk.

Thomas That's like the joke: "In *Second Life*, why do they have roofs? To keep the rain out." There's no rain in *Second Life*. It's absurd to have a roof on a house when you can fly. But we bring certain things with us. Houses have roofs. That's a rule.

Dmitri, you mentioned "mapping." Can you talk about your work in that area?

Williams Mapping is the extent to which the real and virtual worlds match in behaviors, attitudes and outcomes. So if people in the real world would behave in a certain way, when there is perfect mapping they would behave in exactly the same way in the virtual world. If there is mapping between the real and online, we could then use virtual research as a proxy for research that would be impractical, unethical or impossible in the real world.

Your current research involves developing a framework or methodology for online mapping. Can you describe this?

Williams We are trying to figure out the playbook – when mapping applies and when it doesn't. It's my starting assumption that mapping is the exception, not the rule.

But we have already identified some situations where it works. For example, people in virtual spaces seem to behave economically just as they do offline. An initial study we did a couple of years ago found that if a game world had a stable GDP and a stable inflation rate, people responded to price changes the same way they would in the real world. Things happened just the way the economists said they would.

Two years ago, the United States spent $700 billion on TARP funds. It was essentially an experiment with no control group. Our economy was melting down and nobody knew how to fix it. So we said, "Let's try this thing and see if it works." But we didn't have a parallel version – an America where we didn't apply TARP funds. In virtual spaces, you can do stuff like that.

Thomas The mapping research is fascinating, but whenever somebody claims it mirrors reality, I always want to put a little asterisk next to it: "Except for the fact that you can't die; the money isn't real; you have no need for clothing, food or shelter; and you can quit anytime you want." Other than that, it's identical.

Where mapping does work, Dmitri, you have suggested that research in virtual worlds could be more reliable than real-world research because it avoids problems like reactivity and sample bias.

Williams One problem in social science research is the person in the white lab coat holding the clipboard. That person's presence throws things off. It's called the Hawthorne effect. Doing research in virtual worlds, there is no one in the room. The gamers are not aware they're being watched. We collect data on them without saying we're collecting data. And in the virtual space, we never use a random sample. We look at the total population. We get perfect data and complete data. That's an advantage over regular social science research that we usually don't see.

The ability to surreptitiously watch gamers has benefits beyond social science research, doesn't it? You have consulted for game makers and security firms.

Williams Some of the work that my team is doing involves deviants or cheaters. In virtual worlds, that comes down to people who are hacking someone else's account or people who are engaging in a banned activity called gold farming, or real-money trade. Gold farmers gather in-game resources to then sell them to other players for real-world money. Game makers are interested in ways to find those people. They have these vast troves of data, of behaviors. Anything you do in this space, they're recording. The question is: Can we look at those data with some advanced techniques and spot the bad guys? We found a number of ways to do that, by looking at what is called their "network signatures."

It turns out that gold farmers are organized like drug cartels. They're arrayed in hub-and-spoke networks, just like we all are. But different network shapes go along with different kinds of activities, and certain shapes could only be gold farmers: There is no in-game function that would match that shape. It's a neat methodological innovation to be able to find people by network-signaturing pattern. It has some commercial application as well. The science and the math for this are coming out of law enforcement. Could you use these network signatures to find bad guys in real space? The answer is yes, if you only had the correct data to look at and you could get past all the ethical issues. Two significant hurdles. ●

If you have questions or comments on this article, please send them to magazines@usc.edu.

MOVING FORWARD For years, Patty Meredith suffered from debilitating pain due to endometriosis, but surgery let her get back on her feet.

USC gynecologists offer improved quality of life to patients with endometriosis.

BY SARA REEVE

Female Trouble

WHEN PATTY MEREDITH'S PAIN GREW SO BAD THAT SHE HAD to move out of her second-story bedroom and into a guest room on the first floor of her home, she knew something had to change.

"It was so horrible," says Meredith, now 49. "I was incapacitated. I live in a two-story house, and going upstairs was awful. I am a very active person, and it was very depressing to be that sick."

Meredith has endometriosis, a condition in which the cells lining the uterus implant themselves and grow in other areas of the body, causing pain, irregular bleeding and possibly infertility. The course of the disease can vary greatly among women. Some experience few or no symptoms, while others may experience chronic pain or infertility.

"Patients with endometriosis come to us either with a mass on an ovary (an endometrioma), or they come with pain," says Claire Templeman, assistant professor of clinical obstetrics and gynecology at the Keck School of Medicine of USC. "It can be pain with periods, pain with ovulation, pain with bowel movements, pain with sex, pain with urination, and it may be some or all of those. And you've got a third set of women who see a doctor because they can't get pregnant, and their endometriosis diagnosis comes about as a result of an infertility workup."

Meredith, who lives in Lincoln, Calif., which is near Sacramento, remembers first experiencing very painful menstrual cramps at age 20, but credits pregnancies with her two children in her mid-twenties with keeping the pain at bay. By the time she was in her thirties, Meredith learned to schedule her work and home lives around her monthly cycle.

Photographs by Philip Channing

"The pain was like really, horribly bad cramps – much beyond normal," she says. "When it got really bad, if my period lasted for five days, I would have to stay in bed at least one of those days. I learned to schedule my life around my period. When I was planning major events, I would count out 28 days, just to make sure I wouldn't be on my period."

The causes of the disease are not known, and many experts believe that while diagnosis often occurs between the ages of 25 and 35, the condition may have been present for many years prior.

"There are lots of theories about why women get endometriosis, but there is no one theory that covers everybody who gets it," says Templeman. "What we do know is that it tends to be a disease that is progressive over time, at least in some women. The reason we try and make the diagnosis early is so we can intervene early in the hope of easing symptoms and stemming progression of the disease."

Meredith managed her life around her condition every month for several years until she turned 40, when the pain increased significantly. But searching for better solutions led her in circles. She visited multiple doctors in several different specialties, but the advice she received didn't work for her.

"At this point, I was vomiting when I'd get my period," says Meredith. "I'd lost 35 pounds, going from 140 pounds to 105. I was miserable. … One doctor told me she was convinced my only solution was a hysterectomy. 'Take it all out – that's your only course!'"

Removal of the uterus used to be a standard treatment for women suffering from endometriosis, but as the disease has begun to be diagnosed in younger women, preferred treatments have changed.

"The way we understand endometriosis now is that, for young patients, performing a hysterectomy is a bit like trying to remove weeds without removing the roots," says Templeman. "You've taken out the weed, but it's going to grow back because the roots are still there. There has been a shift in approach that radical surgery is removing the disease rather than removing the uterus and the ovaries, which essentially puts someone into menopause. There are sometimes other reasons for a woman to have a hysterectomy, such as large fibroids or cancer, but that procedure as a primary treatment for endometriosis is not what we do."

Treatment for endometriosis begins with medications to control the pain, as well as hormonal treatments – such as birth control pills – although surgical options can be necessary for severe cases.

"If someone has a persistent mass on an ovary that we suspect may be an endometrioma, we'll operate so we can confirm that it is not ovarian cancer," says Templeman. "We'll operate in patients who have severe pain, who may not have responded to medical treatment, if patients have involvement of organs such as the bladder or the bowel, or severe bleeding from these organs. And sometimes we'll operate in patients who are trying to become pregnant because that can certainly help from a pain perspective and from the fertility perspective. What's important is that treatment needs to be individualized."

When looking for treatment options that could help her overcome the debilitating pain while not sacrificing her uterus, Meredith found USC University Hospital. Despite the fact that she lived more than 400 miles away, Meredith made an appointment with Templeman.

"When I saw her, she told me she had good news and bad news," says Meredith. "She said: 'The bad news is that you have deep endometrial disease. The good news is this type benefits the most from surgery.' She gave me the perfect balance of hope and reality."

SHEDDING LIGHT USC assistant professor of clinical obstetrics and gynecology Claire Templeman's research is extending knowledge of the disease process of endometriosis.

THE GYNECOLOGY SERVICE AT USC University Hospital takes a multidisciplinary approach to endometriosis treatment, working in conjunction with physicians and surgeons from the Division of Colorectal Surgery and the Department of Urology.

"The gynecology service provides patients with up-to-date medical treatment options that are individualized to specific patient needs," says Laila Muderspach, chair of the Department of Obstetrics and Gynecology at the Keck School. "This team of gynecologists is amazing and has specialized and advanced training in caring for women. The physicians are skilled and compassionate and committed to excellence."

Another strength of the program is its research component. Being at a major academic medical center means that patients know their doctors are engaged in the process of discovering new treatments. "Our patients are offered the opportunity to participate in tissue studies we are doing," says Templeman. "We have an active interest in understanding the disease and pursuing new therapeutics of the disease."

Endometrial tissue had spread throughout Meredith's pelvis, invading her upper and lower bowel and bladder. Her colon had become completely blocked, which had led to her drastic weight loss and vom-

iting. She required extensive surgery to remove the tissue. Templeman utilized pelvic laparoscopy – a minimally invasive surgery – to remove all of the endometrial tissue and adhesions.

According to Templeman, most surgeries last a couple of hours. "Patricia's case was very extensive disease that involved the small and large bowel, and a lot of areas in her pelvis," she says. "So her surgery was obviously very extensive, and even though it was done laparoscopically, she had to recover in the hospital for several days because she had segments of her bowel resected."

After several procedures, including two colon resections and the removal of her appendix, Meredith began to see a glimmer of hope that she would be able to live free of the pain that had plagued her for years.

Now, six years later, Meredith is active once again. She doesn't have to schedule her activities around her monthly cycle. She even plans to complete a "resolution run" in Carmel, Calif., to celebrate.

"I am so amazed to think back to where I was, and to realize that I have recovered from the depths of despair," she says. "It's just night and day from where I was to where I am now."

The long-term chronic pain associated with endometriosis can cause depression and other emotional and psychological problems in the women who suffer from it.

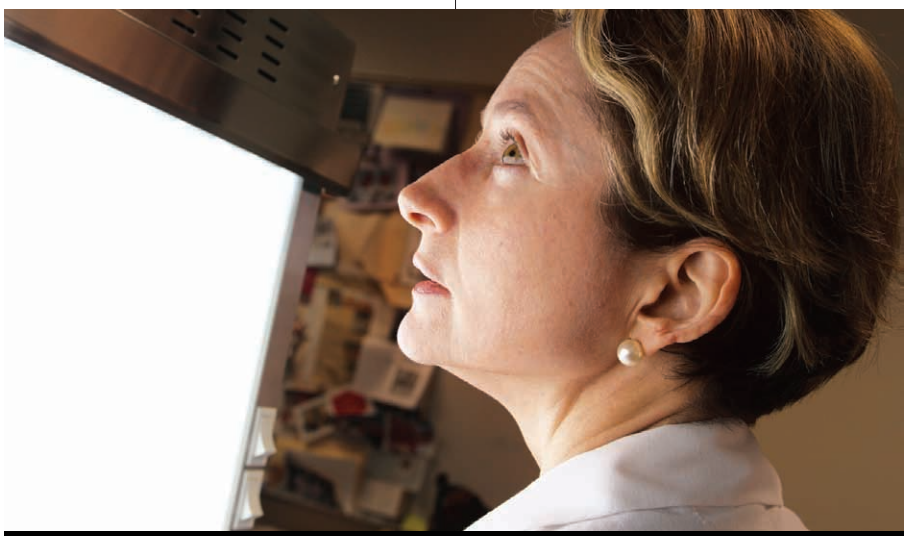
"Chronic pain and infertility can be a huge drain, not only on a patient, but also on her relationships with various members of her family and friends," Templeman says. "It's important for women to know that endometriosis is actually a very common disease. I think what people need to know is that they are not alone, and that it is a disease that we are learning more about. If they think that they have symptoms, they need to seek medical attention and see whether this could be what's going on."

Surgery such as Meredith's can be a welcome option for women whose endometriosis has not responded to medical therapies. According to Templeman, providing relief that can change women's lives has been very gratifying to her as a physician.

"Working with patients like Patty Meredith, who've had bladder endometriosis or bowel disease, and who have had the disease resected and whose pain has really responded well to that, is really wonderful," says Templeman. "Or young women who've been told that a hysterectomy is their only option, and they've come to USC and had their pelvis operated on and their fertility preserved, and they've gone on to have pregnancies and their own families. When we hear stories like that, it makes it a very gratifying area to work in." Because the disease can return – even after a hysterectomy – Templeman states that women need to continue to be followed by their doctors. Meredith took hormonal medications for four years after her surgery and continues to visit Templeman every six to 12 months, but she has had no recurrence of disease.

"There is always a possibility of my disease coming back," Meredith notes. "Hysterectomy isn't always an answer. Even menopause doesn't guarantee that it's gone. With this disease, there are no guarantees." ●

For more information, or to make an appointment with a physician at the gynecology service at USC University Hospital, please call (800) USC-CARE or visit doctorsofusc.com/gynecology



PAIN RELIEF **Keck School of Medicine of USC professor Claire Templeman finds emotional rewards in relieving patients' chronic pain and helping them overcome infertility issues.**

Delicate Subjects

Conventional wisdom says that discussing certain bodily functions is not "ladylike." But avoiding topics such as incontinence, pelvic pain and defecation problems can hide serious medical issues.

"Many women are reluctant to bring up these issues in their general gynecology visits," says Azin Shahryarinejad, assistant professor of female pelvic medicine and reconstructive surgery and urogynecology at the Keck School of Medicine of USC. "Many feel that incontinence is just a normal part of aging, that they just have to live with it. But these issues can be very devastating to women's lives."

Women may not connect symptoms such as pain during sex, incontinence or increased vaginal bleeding with important health issues like uterine prolaspe, the slipping of the uterus from its normal position in the pelvic cavity into the vaginal canal. Surgery may be necessary to correct the prolapse and prevent pain and infections.

"Patients are often reluctant to reveal certain symptoms, and so they are then not addressed as part of their care," says Begüm Özel, assistant professor of female pelvic medicine and reconstructive surgery at the Keck School. "Not revealing those symptoms can affect our ability to provide a correct diagnosis and provide appropriate treatment."

One condition that can be hidden when a woman is not honest with her gynecologist is a disease called interstitial cystitis. "This condition, in which the inner lining of the bladder gets destroyed, is incredibly painful for women," says Shahryarinejad. "One of the major symptoms is pain during sex. If women don't mention that symptom, their doctors may diagnose a simple urinary tract infection."

Women experiencing embarrassing symptoms may feel that they are alone, but gynecologists know that they affect many women at some point in their lives. "I tell my patients to tell their friends about their experience – not to boost my own practice, but because their friends may be experiencing the same problems and not know how to talk about them," says Shahryarinejad. ●

Family Ties

NEWS FROM THE USC ALUMNI ASSOCIATION

Great Numbers: 50, 25 and 10

Reunion Weekend 2010 brings three generations of Trojans together for tours, talks and long-lost history.

MORE THAN 800 ALUMNI AND friends returned to campus Oct. 29-30 for Reunion Weekend 2010.

Sponsored by the USC Alumni Association, the celebration coincided with Homecoming and welcomed three generations of alumni home to USC: the Class of 1960 for its 50-Year Reunion, the Class of 1985 for its 25-Year Reunion, and the Class of 2000 for the reestablished 10-Year Reunion.

Graduates from the classes of 2001 to 2010 also returned to campus for a young alumni tailgate before the Oct. 30 game.

The Class of 1960 opened the weekend with its 50th-reunion luncheon. Following a welcome by Alumni Association CEO Scott M. Mory, 50-Year Reunion Committee co-chairs Barbara Myers Cotler '60 and John Hubanks '60 led their classmates down memory lane to the days when Trojans played good-natured pranks on the UCLA campus during rivalry week.

Special guest Art Bartner regaled the crowd with an overview of his 40-year career leading the Spirit of Troy. He also thanked the Class of 1960 for its steadfast support of the university's band program.

Former student body president and current class legacy chair Wally Karabian '60 informed his classmates that their generous reunion giving will help ensure the Trojan Marching Band's continued success.

Friday afternoon, some attendees toured the campus, and others heard lectures on Duke Ellington and the 21st-century communications revolution.

Patrick Auerbach, executive director of alumni relations, introduced the panel "It's Been a Great Ride So Far … but What's Next?" featuring alumni from a variety of fields sharing their strategies for creating new professional opportunities.

Mory moderated the presentation "USC Today, Tomorrow and in the Future," with deans James Ellis of the USC Marshall School of Business, Karen Symms Gallagher of the USC Rossier School of Education and Howard Gillman of USC College.

At sunset, members of the Class of 1985 gathered for a special "rededication ceremony" of a long-lost piece of USC history: a plaque commemorating the class's original senior class gift of Senior Park.

The plaque has been restored to a plinth on the north lawn of Leavey Library thanks to the tireless efforts of Legacy co-chairs Steve Leland '85 and Michael Reilly '85.

The celebration continued at the Ronald Tutor Campus Center, where the Class of 1960 held a cocktail party at Moreton Fig.

In the Trojan Ballroom, a deejay spun classic '80s hits at the Class of 1985's 25th-Reunion Celebration Dinner.

Reunion Committee co-chairs Lisa Goodwin Michael '85 and Chris Schaller '85 emceed the dinner, which ended with a rousing performance by the Spirit of Troy.

Meanwhile, the Class of 2000 held its "Millennial Mayhem" 10th-Reunion Celebration at Town & Gown.

Under the leadership of co-chairs Liana Constantinescu '00 and Ross Necessary '00, the reunion committee created a late-'90s era lounge, complete with video games, pool tables and video clips.

With Reunion Weekend attendance on the rise and class-legacy giving currently at $150,000 – up 20 percent from last year – USC's expanded reunion program fulfilled two alumni association goals: providing alumni of all ages with meaningful opportunities to reconnect with USC, and inspiring philanthropic support for current university initiatives.

In the words of Carol C. Fox MS '62, the 2010-11 president of the USC Alumni Association Board of Governors, "Reunion Weekend 2010 represented another step forward in our efforts to build a reunion brand that resonates with Trojans of all eras."

– Timothy O. Knight

Class of 1985 members gathered outside Leavey Library to rededicate a plaque commemorating the class's senior class gift: Senior Park.

Class of 1960 grads enjoyed a tour of the USC School of Cinematic Arts complex.

"Millennial Mayhem" reigned at the Class of 2000's reunion celebration at Town & Gown.

PHOTOS BY DEVIN BEGLEY

A Conversation with **RONALD TUTOR**

Building a Legacy at USC

From the start, the construction magnate has kept the Trojan Family in his plans.

PHOTO BY PHILIP CHANNING

Ronald N. Tutor '63, USC trustee and longtime university benefactor, is the 2011 recipient of the USC Alumni Association Asa V. Call Alumni Achievement Award. Thanks to his generosity, his name graces two University Park campus buildings: the Ronald Tutor Campus Center and the USC Viterbi School of Engineering's Tutor Hall. He is chairman and CEO of Tutor Perini Corporation, a world leader in civil and building construction, and president of Tutor-Saliba Corporation, one of the nation's largest general contractors. Tutor is also co-owner of Miramax Films. He recently spoke with the USC Alumni Association's **Cheryl Collier**.

What inspired you to attend USC?
I went to a UCLA-USC football game when I was 11 years old, which incidentally USC won, but I was so excited about the experience, and for some reason, I was determined from that point on to go to USC.

What experiences and/or people at USC left the most lasting impressions on you?
The relationships I formed while I went to USC, the friendships that I made and all that I learned about the social interaction of people – thanks to the fellow Trojans I was fortunate enough to meet in college.

Two of your children are USC graduates. What advice did you give them about attending your alma mater?
I told them they had better go to USC if they wanted me to pay for their education.

Were you and/or your firm involved in the design and construction of the Ronald Tutor Campus Center?
Obviously we not only oversaw the design, but I also built the Ronald Tutor Campus Center. To give a beautiful building to a university that so richly deserves it is the most special feeling I can recall in terms of accomplishments.

You have taken your place among the university's greatest benefactors. Was there a particular moment or experience in your life that compelled you to link your legacy with USC's?
No. I've always had this deep feeling for USC and almost a compelling sense that I wanted to be involved in its growth, and I could not think of a better way than to give as I have to the university. I've been so proud of the progress the university has made in the last few years. As a former student, I think it's great to be able to help future students enjoy the Trojan experience as I did.

What does receiving the alumni association's highest honor, the Asa V. Call Alumni Achievement Award, mean to you?
It means everything to me to be acknowledged by my peers and friends at USC and their sense that somehow I've contributed significantly to the university.

In 2010, you and your business partners acquired Miramax Films, with its library of 700-plus films. Do you have any favorites among those? Or favorite films in general?
No, I just enjoy the movie business. When I was a kid growing up in the San Fernando Valley, my mother oversaw the ladies' wardrobe department at Universal Studios for a while, so I was always fascinated with the business and developed a curiosity about it.

Am I excited about making movies? No. Will we have no alternative but to make a certain level of movies? The answer is yes, because a film library of this magnitude, with so many classic films like *Chicago*, *Pulp Fiction* and *Shakespeare in Love*, will require it. It will be another challenge as we move forward. ●

For profiles of other Trojan luminaries, visit ***http://alumni.usc.edu/archives/profiles***

BICOASTAL CAMARADERIE

The Alumni SCene

Trojans come together over photography, wine and food.

PHOTO BY JULIE STAPEN PHOTOGRAPHY

1

PHOTO BY PHILIP CHANNING

2

PHOTO BY DAN AVILA

4

PHOTO COURTESY OF USC ALUMNI CLUB OF THE EAST BAY

3

1. Picture This

USC Roski School of Fine Arts dean Rochelle Steiner joined the USC Alumni Club of New York at the Museum of Modern Art on Oct. 12 for the "New Photography" exhibition, featuring the work of two USC alumni. Before a private tour of the exhibition, Dean Steiner led a discussion with one of the featured artists, Amanda Ross-Ho MFA '06. Pictured, left to right: USC Alumni Club of New York president Dawn Frojen '97, USC Alumni Association Board of Governors member Amir Akhavan '02, former USC Roski dean Ruth Weisberg, Janet Handtmann '74, Dean Steiner, Ross-Ho and artist Susie Gesundheit. Both Handtmann and Gesundheit are members of the USC Roski School of Fine Arts Board of Councilors.

2. Trojan Dynasty

Sixty years after Charles W. Wong '51 graduated from USC with a degree in architecture, five of his grandsons are carrying on his legacy by currently attending his alma mater. On Jan. 27, three generations of this close-knit Trojan Family came together to meet USC president C. L. Max Nikias in the Epstein Family Alumni Center. Pictured in the front, left to right: Darrell L. Wong '75, Charles W. Wong, Nikias, Charles' daughter Victoria J. Ho '74 and her husband, Kenneth C. Ho DDS '77. Back row, left to right: Brandon C. Ho DDS '05, Chandler G. Ho '08, DDS '12, Noah Lim '11, Darren A. Ho '11, Matthew Wong '13 and Alan Wong '14.

3. 'SC in Northern Cal

USC Alumni Association CEO Scott Mory and USC Alumni Association Board of Governors president-elect Lisa Barkett '81 joined a contingent of Bay Area alumni club officers at the USC Alumni Club of The East Bay meeting on Nov. 9. Pictured, left to right, at Massimo Ristorante in Walnut Creek: Sacramento club president Paul Danczyk MPA '02, Barkett, East Bay club president Kevin Hogan '65, North Bay co-president Bryan Koeberer '09, former East Bay club president Meribeth Farmer '74 and Mory.

4. Wining and Dining at Widney

Before the USC-Notre Dame game on Nov. 27, approximately 300 alumni and friends enjoyed a wine-tasting reception in Widney Alumni House co-hosted by the USC Alumni Clubs of Los Angeles and the Trojan Wine Society, a USC Alumni Association partner. Trojan Wine Society owner Paul Kalemkiarian '80 (behind the table) generously contributed a selection of fine wines from around the world and led the tasting, which eased the pain of USC's subsequent loss to the Fighting Irish, 20-16. ●

PHILANTHROPIC FEMALES

Behind Every Great University? Great Women!

When it comes to supporting the university and its students, USC's alumnae groups are in a class of their own.

Following the inauguration of USC president C. L. Max Nikias, the Half Century Trojans recognized the Trojan Guild of Los Angeles for 50 years of service. The honor was given by Janet Eddy '53, 2010-11 Half Century Trojans president (front, second from right). The Trojan League of Orange County has its 50th anniversary in 2011.

PHOTO BY ROSS M. LEVINE

HERE'S A RIDDLE: A CROWD of USC alumni are in a room when the only guy in the group steps out. Who's left? A crowd of USC alumnae, of course. Pardon the Latin lesson, but the word "alumnae" is particularly important at USC, given the strength and commitment of our university women's groups. Their story begins in 1904 with the founding of the Women's Club of USC, known since 1922 as Town and Gown of USC.

Today, there are 19 principal alumnae groups, operating under the auspices of the Alumnae Coordinating Council (ACC). The ACC was established in 1961 at the urging of then-USC president Norman Topping, who wanted the six alumnae groups in existence at the time to coordinate their efforts in support of the university. The current ACC president, Linda Josi Ball '83, has a seat on the USC Alumni Association Board of Governors, ensuring that the alumnae groups are well represented in all matters of importance to the Trojan Family. (In fact, all six female past presidents of the alumni association have been ACC members.) On May 20, the ACC will celebrate its 50th anniversary with a special luncheon at Town & Gown.

According to Ball, the ACC's 19 member organizations distribute only merit-based scholarships "to help those students who might not qualify for traditional financial aid." She adds, "This sets USC apart from other major universities and has a great impact on attracting and retaining active and involved students." At Homecoming 2010 alone, ACC's merchandise booth raised more than $30,000 in scholarship funds, and in fiscal year 2009-10, the ACC collectively distributed scholarships totaling $372,000. Many of the organizations also raise funds for university schools and programs.

Each ACC member organization has its own membership criteria, based on factors such as age and geographic location. All are based in Southern California, though USC women's groups not directly affiliated with the ACC are found throughout the country.

Town and Gown, not only the oldest but also the largest group, is open to all female Trojans as well as university administrators, faculty, researchers and professional staff. It has an endowment of approximately $36 million and holds an annual benefit at which past honorees have included Sophia Loren and Pat Nixon.

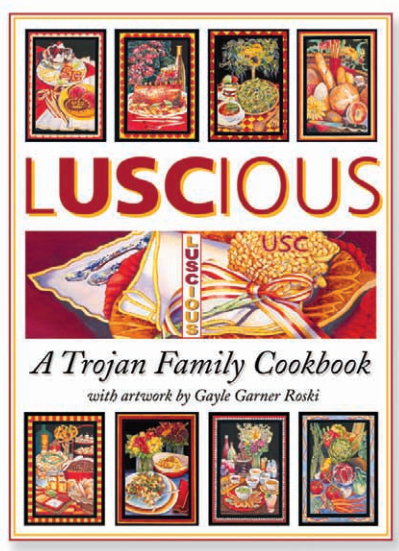
The seven groups known as Trojan Leagues – in Los Angeles, Orange County, the valleys, South Bay, Foothills, San Diego and the desert – foster a continued connection to USC and participate in neighborhood student receptions and in the awarding of undergraduate student scholarships. Other causes supported by the leagues have included the Epstein Family Alumni Center and new uniforms for the Trojan Marching Band.

The Trojan Guild of Los Angeles, which turned 50 in 2010 and celebrates this year in March, holds its meetings and events on the University Park campus and is composed of alumnae over the age of 30. The Trojan Guild of Orange County works to support students from the O.C., and invites USC speakers to its meetings at members' homes.

Younger women find Trojan camaraderie and meaningful volunteer opportunities through Town and Gown Junior Auxiliaries of Los Angeles (founded in 1933) and Orange County (founded in 1969 by then-USC first lady Elizabeth von KleinSmid). Trojan Affiliates (1966) is based in the San Gabriel Valley, and Trojan Junior Auxiliary (1936) attracts alumnae and friends in their 20s and 30s from L.A. and Orange counties. The other groups on the ACC roster are the Interfraternity (1931) and Intersorority (1959) Parents Councils (supporting the USC Greek community), the USC Norris Comprehensive Cancer Center Auxiliary (1987) and the USC University Hospital Guild (1993), which raise funds for the USC hospitals and the Keck School of Medicine of USC.

Looking to get involved with a USC alumnae group? Visit alumni.usc.edu/groups/alumnae

– Ross M. Levine



In 2010, the Alumnae Coordinating Council published the LUSCious cookbook, 500 recipes submitted by members of the Trojan Family. The book is illustrated by alumna Gayle Garner Roski.

To learn about prostate surgery options that maintain quality of life, call (323) 865-3700 or visit uschospitals.com/prostate.

Class Notes

WHO'S DOING WHAT & WHERE

»ORIGINAL SHRINE Before the current Moorish Revival Shrine Auditorium was built on Jefferson Boulevard, there was an earlier Al Malaikah Shrine Temple, built two decades earlier. Shown here, that structure also boasted onion domes and plenty of ornament. A 1920 fire destroyed the building in a mere 30 minutes. Six years later, the current building was completed. The newer Shrine Auditorium has been home to the Trojan basketball team, the Academy Awards, GRAMMYs and Emmys, and still sees plenty of red-carpet action with the SAG Awards, BET Awards, People's Choice Awards and others. ●

'39 Julian Myers of Marina del Rey, Calif., won 11 medals at the 24th Annual Huntsman World Senior Games.

'48 Bill Feathers of Tarzana, Calif., is president of Feathers Consulting & Executive Search, a company specializing in the real estate, construction and design industries.

'50 Tony DiMarco of Los Angeles released *The Three Keys*, a children's book, and *Los Angeles Potpourri*, a picture book featuring Los Angeles landmarks.

'55 Michael Halperin premiered his comedy *Driving James Dean* with the Celebrity Staged Reading Series in Los Angeles. He teaches in the School of Film and Television at Loyola Marymount University.

'60 Nedra Zachary received the Decoration of Honor in Silver for Services to the Republic of Austria, one of the highest Austrian honors conferred upon a private citizen. She is director of the National Vocal Competition for Young Opera Singers in Beverly Hills, Calif.

'61 Cleve Robert Ferguson JD '65 released *The Knights Templar and Scotland*, which details the history of the Knights Templar from the early 12th century to the present. He practices law in Claremont, Calif.

'65 John L. Colley Jr. PhD received a 2010 Thomas Jefferson Award from the University of Virginia, where he has been a business professor for more than 40 years.

'66 Gordon N. Ellison MA released his second book, *Thermal Computations for Electronics*, which discusses the theoretical basics of heat transfer in electronic systems. He teaches mechanical engineering at Portland State University in Oregon.

'67 Bill Altaffer MS '69 set a world record after visiting 675 UNESCO World Heritage sites. He lives in Carmel Valley, Calif.

'68 Pat Nolan JD '75 of Leesburg, Va., hosted actress Hilary Swank for a private screening of her movie *Conviction* at Prison Fellowship, a Christian prison outreach and criminal justice reform program. He serves as vice president.

'71 Stephen C. Morgan MS announced his plans to retire from his post as 17th president of the University of La Verne in Ontario, Calif.

'73 Ed Poll MBA received the Lifetime Achievement Award from the State Bar of California. He is a principal at LawBiz Management in Venice, Calif.

'74 William L. Tafoya MPA was appointed director of research at the Henry C. Lee College of Criminal Justice and Forensic Sciences at the University of New Haven in Connecticut. He has been a professor in its criminal justice department since 2002.

'75 Russell Gray "Cathal Liam" EdD of Cincinnati published his fourth book, *Fear Not the Storm: The Story of Tom Cullen, An Irish Revolutionary*. • **Michael R. Lawler Jr.,** who practices law in Newport Beach, Calif., completed a three-year circumnavigation of the world on his 47-foot sailboat. He visited 61 countries on six continents and sailed 31,145 nautical miles.

'77 Glenn Etow PharmD of Costa Mesa, Calif., is chief operating officer and president of Comprehensive Pharmacy Services. • **Dennis Mulhaupt,** founder and managing director of Commonwealth Partners, Inc., in Pasadena, Calif., was appointed chairman of the corporate board of Radio Free Europe. • **Ralph Winge** DDS of Los Angeles created the "Bite the Dentist Back Dance," which consists of bumping the arms together to mimic the movement of teeth.

'80 Alice P. Gast was appointed a science envoy for the U.S. State Department by Secretary of State Hillary Clinton. Gast is

We welcome news items from all USC alumni. Please include your name, street address, e-mail address, degree and year of graduation with each submission. Mail to: USC Trojan Family Magazine, University of Southern California, Los Angeles, CA 90089-7790 or e-mail us at: magazines@usc.edu. *Please note that, because of our long production schedule and the heavy volume of submissions, it might be several months before your notice appears.*

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USC Alumni ASSOCIATION

president of Lehigh University in Bethlehem, Pa. • **Steven M. McElhiney** MBA '85 serves as president-elect of the Chartered Property Casualty Underwriters Society, a community of credentialed insurance professionals. He is president of EWI Risk Services in Dallas. • **Richard Vladovic** PhD was appointed vice president of the Los Angeles Unified School District Board of Education. He has been a board member since 2007.

'81 **Ronnie Lott** of Cupertino, Calif., released *#SPORTStweet*, a playbook that details the life lessons he learned from coaches and sports. • **Phil Holthouse** MBT '86 serves as managing partner at Los Angeles-based Holthouse Carlin & Van Trigt LLP, a full-service CPA firm that received a "Best of the Best" award for the fifth consecutive year by *INSIDE Public Accounting*.

'83 **Mark R. Henschke** PharmD of Newington, N.H., was appointed assistant clinical professor of internal medicine at the University of New England College of Osteopathic Medicine.

'84 **Robbin Itkin** JD of Los Angeles was featured in a *Today* show segment discussing the double standards that exist for women in the workplace.

'87 **Adrienne Sharp** MPW released *The True Memoirs of Little K*, a novel that follows passion, politics and ballet in the court of Czar Nicholas II. She lives in Redondo Beach, Calif.

'88 **Susan Herbst** MA, PhD '89 was appointed the 15th president of the University of Connecticut. She is the first woman to be selected as the university's president since the school's founding in 1881. • **Hank Malanowski** MS of Lorton, Va., completed the accreditation requirements for the Certified Professional in Supply Management program from the Institute for Supply Management. He serves in the Pentagon's installations and logistics department. • **Robert E. McQuinn** MBA '89 was named vice president for alumni relations and development at Northwestern University.

'95 **R. David Chapel** EdD of Santa Ana, Calif., is a member of the Commission of the Future, which released the "2020 Vision for Student Success," a report that addresses the need to increase associate degree and certificate completions in California's community colleges. • **Joe Tellez** MS '99 of Rancho Cucamonga, Calif., is vice president of Utility Integration Solutions, a company focusing on business integration in the utilities industry.

PHOTO BY DIETMAR QUISTORF

ALUMNI PROFILE

Man the Brigades

Two years ago during the height of the recession, **Steven Atamian** '04 did the unthinkable: He left his job in corporate America. The foolhardy act of a restless young man? Not at all. He had simply decided to give his time and energy entirely to Global Brigades (globalbrigades.org), the nonprofit organization he co-founded a few years earlier.

It was not exactly what Atamian, a Fresno, Calif., native, had in mind when he entered the USC Marshall School of Business as an undergraduate. At that time, he had regarded himself as an entrepreneur-in-training. But one extracurricular course – professor David Andrus' peace and conflict studies class – changed his life. "He made me start questioning everything, from the systemic issues of poverty to societal influences … to alternative economies," says Atamian. The result was a second bachelor's degree in international relations.

Both degrees came in handy when he connected with a group of Marquette (Wis.) University students doing medical relief work in Honduras. Atamian made it his mission to help turn what was then an informal team of dedicated volunteers into a *bona fide* organization. To that end, he built a website for students interested in replicating the Marquette model. The first two schools to jump on board were USC and the University of Michigan.

"USC ignited the organization," says Atamian, who is the group's president and chief empowerment officer. "USC brought down more than 120 students to do medical relief work and really carried us through that first year. This allowed us to have enough margin to hire [Central American director and co-founder] Quique Rodriguez, and start laying the foundation for what everything would become."

The resulting Global Brigades has grown into the world's largest student-led sustainable development organization, overseeing nine other brigades dedicated to meeting community needs such as water sanitation, sustainable architecture and microfinance.

While Global Brigades, Inc. (USA), is headquartered in Fresno, the organization has seven separate entities based in different countries: Honduras, Panama, Ghana, Canada, Switzerland, the U.K. and Ireland. The heart of the organization, though, is the college chapters, boasting close to 5,000 participants on about 125 campuses. Focused on a single discipline, each club is an autonomous unit run by students who raise their own funds and plan their own trips.

A typical United States group travels to Honduras or Panama one to three times a year for one to two weeks. (Next academic year, they will start going to Ghana.) Fifteen to 30 volunteers from the brigade work with local professionals to help address both short- and long-term concerns. Atamian explains: "Our model is such that it's dependent on these groups of students from different disciplines coming to the same villages over and over again, continually doing that follow-up and pushing things forward."

Atamian's own work experience and, in particular, his USC Marshall degree, have been a plus for the organization. "We are a nonprofit with a social-cause mission, but we run like a business," he says.

And Atamian's personal plans? "I just want to be where I feel like I'm going to be able to make the best social impact." For the foreseeable future, that's Global Brigades. "I'm focusing on mostly new initiatives and business-growing initiatives," he says. "I see myself busy over the next 20, 30 years."

– Sandy Siegel





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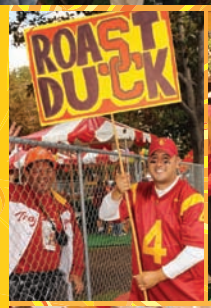












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'97 J. Scott Goldstein PhD, a senior vice president at ManTech International Corp. in Centreville, Va., was promoted to colonel in the Air Force Reserve, serving the Joint Chiefs of Staff at the Pentagon. He also was awarded his fifth U.S. patent in advanced signals processing. • **Rebecca Wilke** EdD co-authored *Corporate Family Matters: Creating and Developing Organizational Dynasties*, which explains how every business is like a corporate family. She is president of LEADon, Inc., a leadership development company based in Southern California.

'98 Eric Freedman PhD published *Transient Images: Personal Media in Public Frameworks*. He is an associate professor in the School of Communication and Multimedia Studies at Florida Atlantic University. • **Tiffany Legington Graham** was appointed director of development in the Freeman School of Business at Tulane University in New Orleans.

'99 Renata Simril MRED of Los Angeles was appointed managing director at Jones Lang LaSalle's Public Institutions practice, a provider of real estate advisory and transaction services. She is the former Los Angeles deputy mayor for economic development.

'01 James Penner MA, PhD '05 released his first book, *Pinks, Pansies, and Punks: The Rhetoric of Masculinity in American Literary Culture*. He teaches English at the University of Puerto Rico's Río Piedras campus.

'02 Brad Luck is executive producer of the Fox 5 *Morning News* at KSWB-TV in San Diego. Previously, he worked as a show producer for KTLA-TV in Los Angeles, where he won four Los Angeles area Emmy awards.

'07 Cesar Jimenez was promoted to national product planning manager at Toyota Materials Handling, U.S.A., Inc. He lives in Long Beach, Calif. • **Tom Prieto** MBT of Valencia, Calif., published articles about various tax-related issues in *SFO* magazine and the *Journal of Accountancy*.

'08 Scott Newhouse is a Jesuit volunteer at the Oasis Center in Nashville, Tenn.

'09 Tanya Syed was one of 18 individuals selected as a 2010-11 Capital Fellow for the Executive Fellowship Program in Sacramento.

'10 Radomir Avila is serving as a volunteer through the Jesuit Volunteer Corps in Chicago. • **Cornelious Burke** MPL/MPA was selected as a California Senate Fellow for the 2010-11 Capital Fellows Program in Sacramento. • **Alexander Jochai** MBA, with his

ALUMNI PROFILE

The Funny Frebergs

PHOTO BY HARRY LANGDON

Hunter Freberg '67 has loved her husband since she was 4 years old. But back then, she only knew Stan Freberg as the voice of her favorite television show puppet: Cecil, the seasick sea serpent on the popular children's series *Time for Beany* (1949-54).

A fortuitous meeting in 2000 brought her face to face with the legendary entertainer, satirist and iconic ad man, and it didn't take long before they were chatting like old friends and finishing each other's sentences. After 10 years together, they still do. It's a connection that not only fuels their marriage, but also makes for one dynamic comedy duo.

Billed as Two Funny Frebergs, Hunter and Stan entertain throughout the world and have launched a new CD, *Songs in the Key of Freberg: Songs about Life*, sharing their hilarious *bon mots* on life's daily frustrations, be they the pains of gridlock and home remodeling or the annoyances of other people's public cell-phone conversations and the silliness of pharmaceutical commercials that gleefully gloss over serious side effects.

Hunter writes half of the lyrics while Stan, a founding member of the board of governors for the National Academy of Recording Arts and Sciences who coined the word "GRAMMY," writes the music.

A native Angeleno, Hunter studied at the USC Thornton School of Music while majoring in psychology and education, and she later became a teacher in Bel Air. Although she credits a USC-sponsored conference for sparking her interest in her second career turn as an executive headhunter, marketing and keynote speaker, it's Stan who helped her hone her third act in comedy.

"I never particularly thought of myself as funny," Hunter says. "I mean, I always had a great sense of humor, but I never realized that the two of us together could set each other off."

Stan adds: "She's definitely funnier than me." That may be, but Stan has been making people laugh for decades. Raised in Pasadena, he jumped into show business at age 18 and has voiced more than 400 cartoon characters for Warner Bros. and Disney, recording countless Capitol albums that have sold millions. In 1957, he took over for Jack Benny on CBS radio and, as an advertising director, was dubbed "The Father of the Funny Commercial" by *Advertising Age*. *Mad Men* creator Matt Weiner paid homage to Stan in an episode of the series. Stan is a radio and animation hall of famer who received his star on the Hollywood Walk of Fame in 1960 – the same day as Marilyn Monroe. "But we had different talents," he says.

Of his titles, and there are many, he most loved being "Professor Freberg." While he taught communications at USC in the late 1960s, budding filmmaker George Lucas was among his students, and sought Freberg's advice for a "little sci-fi movie" called *Star Wars*.

Speaking of movies, the Frebergs now are working on an animated film based on Stan's popular 1959 single, *Green Chritma*, which takes aim at the over-commercialization of the Yuletide season.

Stan always told Hunter that she would make a great ambassador and recently, the legendary international jewelry firm Harry Winston named her to that position for the company. "Ambassador Hunter Freberg – it has a nice ring to it," she says.

They're also writing their memoirs – together. "It is a culmination of our whole lives separately and now together – personally and professionally," Hunter says. "We feel so lucky to be able to be at a point like this. But it's taken a lifetime for both of us to complete it, more or less."

– Janice Rhoshalle Littlejohn

78th Annual USC Alumni Awards

April 30, 2011 - Westin Bonaventure Hotel - Los Angeles

The USC Alumni Association proudly announces the recipients of the 2011 USC Alumni Awards:

Asa V. Call Alumni Achievement Award

Ronald N. Tutor '63

USC Trustee; Chairman and CEO of Tutor Perini Corporation; President of Tutor-Saliba Corporation; Co-owner of Miramax Films

Alumni Merit Awards

Larry S. Flax LLB '67, LLM '71

Co-founder and co-CEO of California Pizza Kitchen

Bryan Lourd '82

Managing Partner of Creative Artists Agency

Alumni Service Awards

George L. Pla MPA '74

Founding member of the USC Mexican American Alumni Association, now the USC Latino Alumni Association

Robert E. Plumleigh and Elizabeth Plumleigh MLA '84

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Fred B. Olds Award

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http://alumni.usc.edu/awards

father, launched a custom cabinet company, Stonebelt Cabinets, in Huntington Beach, Calif. • **David Reynaldo** co-founded a professional college counseling service in Beverly Hills, Calif., called College Zoom, based on an idea that started as a class project at the USC Marshall School of Business.

Marriages

Frances Shen '06 and Adam Michael Smith • **Jon Carpenter** '09 and **Midori Matsuoka** '10.

Births

• **Brian Izuhara** '92 and Kandis Izuhara, a son, Ethan Robert. He joins sister Lauren, 5, and brother Garrett, 3. He is the nephew of **Todd Izuhara** MBA '00 • **Nick Lim** '92 and Miia Lim, a daughter, Anna Karina. She joins brother Anthony Konrad, 4. She is the niece and goddaughter of **Joni Lim Ricard** '05 and **Fabien Ricard** '05 • **David Brenneman** '95 and Rachel Brenneman, a daughter, Tahlia Abigale. She is the niece of **Andrew Katz** '93 • **Jacob Ullman** '95 and Xandi Ullman, a daughter, Skylar Elizabeth • **Kristina Berg Chernick** '96, MAcc '99 and Andrew Chernick, a son, Jacob Andrew • **Dena Saumers** '97 and Randy Saumers, a daughter, Reagan Mae Rose. She joins brother Jacob Hawkins, 5. She is the granddaughter of **Paulette Teach** '70 • **Christopher Thomas Miller** '98, MBA '06 and Susan Miller, a daughter, Lauren Marie • **Jeffrey Cadmus** '99, MBA '10 and Sierra Cadmus, a son, Chase Austin • **Grace (Chen) Navarrete** '01 and Mark Navarrete, a daughter, Charlotte Lee • **Matt Wilson** '01 and **Shasta Wilson** '02, a daughter, Samantha. She is the granddaughter of **Tom Wilson** '73 and **Nancy Wilson** '74, MS '78. She is the niece of **Cody Bosz** '07 • **Ryan Gahagan** '03 and Ann Gahagan, a son, Ryan Michael Gahagan Jr. • **Jaime (Polley) Hoeven** '05 and **Drew Hoeven** '05, a daughter, Hadley Ryan.

Deaths

Vernon Rex Mottinger '32, '33, of Chagrin Falls, Ohio; March 9, at the age of 98. An executive with the Continental Can Company for 16 years, he later became director of quality control with Carrier Corporation for 26 years. He served as president of the West Covina School Board for nine years and was mayor of West Covina, Calif., from 1958 to 1959. He was a charter member of Community Presbyterian Church of West Covina and a member of the Covina Masonic Lodge. He was predeceased by his wife Virginia Lang. He is survived by his wife Jeanne, daughter Marcia Anderson, son Donald, daughter-in-law Janice, five grandchildren, three great-grandchildren and brother William.

Daniel E. Ziskin '32, MD '37, of Manhattan Beach, Calif.; July 14, at the age of 97. He was an ophthalmologist and practiced in Los Angeles for more than 50 years. He was survived by his wife of 67 years, Marjorie, who subsequently passed away 44 days later. He is survived by his sons Dan '74 and John, daughter-in-law Jo Ann and granddaughter Lauren.

Mary Dyer Tumilty '36, of Sierra Madre, Calif.; July 28, at the age of 95. While at USC, she was president of Alpha Chi Omega sorority. She served as city librarian for Sierra Madre from 1975 until her retirement in 1984. In 1982, she was honored as the Citizen of the Year. She was a member of the Friends of the Sierra Madre Public Library, the Gamble House in Pasadena and the Creative Arts Group. She also was active at USC with the Half Century Trojans. She was predeceased by her husbands, James Robert Matthews '36 and Bernard Tumilty. She is survived by her daughter, Cynthia Matthews Villani, son-in-law Edmond Dennis Villani and granddaughter Adrienne Alice Villani.

John "Jack" Michell Basler '47, MBA '61, of Hillsborough, Calif.; June 30, of cancer, at the age of 83. He served in World War II and as a marine during the Korean War. For 43 years, he worked at Pacific Bell and AT&T, eventually retiring as vice president. He served as a member of the Senate Advisory Commission on Cost Control in State Government and a board member of the San Francisco Opera Company for 15 years. He also was a member of the Archimedes Circle, a support group for the USC Viterbi School of Engineering. He is survived by his wife, Mary Ann, sons David and Jon, daughters-in-law Esmenia and Pamela, and grandsons Eric, Ryan and Jack.

Frank B. Snyder '48, JD '49, MS '59, of South Pasadena, Calif.; Oct. 31, at the age of 87. At USC, he was a member of Kappa Alpha fraternity. During World War II, he enlisted in the U.S. Naval Air Corps, where he flew the Grumann F4F Wildcat. After serving as deputy district attorney for San Mateo County, he held various positions in the field of education for 20 years, as a teacher, coach, principal and assistant superintendent of personnel. Later, he decided to combine his law and education backgrounds and practiced educational labor law. He is survived by his wife of 61 years, Anne Rose '49, children Steve, Lynne, Julie and Dan, seven grandchildren and sister Virginia.

Bob Chambers '50, of San Pedro, Calif.; Nov. 6, at the age of 83. A USC middle-distance runner, he was a four-year USC letterman from 1947 to 1950 and captain of the 1950 Trojan team. He competed in the 1948 Olympics, placing sixth in the 800-meter run. After his running days, he coached track at Los Angeles Pierce Junior College and for nearly 35 years was a Los Angeles County lifeguard. In 1995, the USC track and field program presented him with a Heritage Award. He is survived by his wife, Gail, and children David, Marc, Gail and Lyn.

Charles Robert Magadini '50, of Dallas; Nov. 3, at the age of 93. Prior to USC, he served as a first lieuenant in the U.S. Army Air Force in World War II. After graduating from USC, he started a structural engineering firm that later became known as Magadini-Alagia Associates. His firm designed several projects for Motorola and was responsible for the structural design of more than 2,000 buildings. He was predeceased by his wife of 64 years, Ruth Sara Baldwin, brothers Aldo and Adorno, and half brother William Caligari. He is survived by his wife, Marian Nichols, children Peter Charles, Christopher Michael, Patricia Ann and Debra "Lee," daughters-in-law Helene and Jamie Shenkman, son-in-law Randy Johnston, four grandchildren, seven step-grandchildren and four step-great-grandchildren.

Daniel Schiavone '51, of Ketchum, Idaho; May 28, of complications from a bicycle accident, at the age of 81. At USC, he played freshman football, served as president of his fraternity and was an active member of the Trojan Knights. At graduation, he was recognized with The Order of the Laurel & Palm, the highest honor of leadership bestowed on graduating seniors. He moved to Europe with his wife and, for 32 years, taught in American schools in France and Germany. He later moved back to the United States and was an instructor at Sun Valley Ski and Snowboard School. He is survived by his wife, Sally (Ballantyne), sons Joel and Dominic, and grandchildren Ansel, Nico and Sophie.

Donald Hirsh '53, of Los Angeles; February 2010. He was an announcer, disc jockey and actor on KUSC-FM from 1949 to 1952 and was the voice of USC Television channel 28 in 1953 and 1954. For 30 years, he worked as a publicist for ABC-TV and its local Los Angeles station, KABC-TV.

Barbara Harpster Beal '56, of Riverside, Calif.; April 9, of chronic obstructive pulmonary disease, at the age of 76. She was active in the Assistance League of Riverside, National Charity League, Panhellenic

Association and Victoria Club. She is survived by her husband of 53 years, John, children David, Karen O'Halloran, Linda Miller '82 and Lisa Straitt, daughter-in-law Cheryl, sons-in-law Mark O'Halloran, Scott Miller and Mike Straitt, and 10 grandchildren.

Arnold Diener '56, of Los Angeles; May 25, of Alzheimer's disease, at the age of 75. He worked in sales throughout his career, and was active in many Masonic organizations. He is survived by his wife, Gladys, children Jay and Jackie, daughter-in-law Vera and grandson Bryon.

Anthony "Tony" Psaltis '56, of Los Angeles; Oct. 30, of leukemia, at the age of 76. A three-year starting guard and forward, he helped the USC men's basketball team win the Pacific Coast Conference Southern Division in 1954 and was the MVP and team captain of the 1956 squad. After serving in the military for both the Army and Marines, he returned to his alma mater as assistant men's basketball coach from 1959 to 1966. He later became the owner and operator of Guarantee Pest Control in Los Angeles. He was an active Trojan, serving as a member of the Out-of-Bounders and Cardinal & Gold.

He was preceded in death by his wife, Phyllis (Angel) '55. He is survived by sons Spiro '81 and Arthur '84, daughter Katherine '84 and seven grandchildren.

Ben J. Day '57, of Soldotna, Alaska, and Dadeville, Ala.; June 24, at the age of 79. He joined the Marine Corps and served in the Korean War, earning a Presidential Citation and a Purple Heart. At USC, he was a member of Delta Sigma Phi fraternity. For 36 years, he served as an executive at America Air Liquide. He is survived by his wife of 53 years, Tamara Toney '56, children Martin and Kathleen, and four grandchildren.

Donald Shedlin Miller MS '57, PhD '71, of Phoenix; Oct. 28. He worked at TRW in Redondo Beach, Calif., for five years, and then as an associate professor of computer science at Washington State University. Since 1981, he had been a professor of computer science at Arizona State University. He is survived by his wife of 40 years, Jan, sister Ronee, and many nieces and nephews.

Phillip Knouse MS '68, of Loudon, Tenn.; Nov. 29, of pancreatic cancer, at the age of 73. In addition to a career in engineering, he taught electronics technology at Black Hawk College in Moline, Ill., and Virginia Highlands College in Abingdon, Va. During retirement, he taught computer classes on board cruise ships and was an active member of the Community Church at Tellico Village in Tennessee. He is survived by his wife of 46 years, Joyce, daughters Kathryn Ramp and Linda Batten, and sons-in-law David Ramp and Michael Batten.

Jesse Jay Easley '77, PhD '89, of Allentown, Pa.; Sept. 1, at the age of 54. He taught at Lehigh University in Pennsylvania as the Charles A. Dana Faculty Fellow in literature and arts. He held a variety of positions, from a curatorial and publications research assistant in the department of herpetology for the Natural History Museum of Los Angeles County to a fashion design assistant for J. P. Silver and Condor. Most recently, he was an adjunct instructor at Northampton Community College in Bethlehem, Pa. He also worked for DeSales University and ERASE Racism in Syosset, N.Y.

Gary Grandfield PharmD '90, of Newport Beach, Calif.; Dec. 5, of complications from a snowboarding accident, at the age of 47. He worked as a pharmacist, most recently serving as West Coast director of Central Admixture Pharmacy Services, Inc. He is survived by his parents, Larry and Mary Jo, sister Cary, brother Scott, nephew Andrew '09, and nieces Amanda and Andrea.

Richard J. Bing of La Cañada, Calif.; Nov. 8, at the age of 101. A longtime professor of medicine at USC, he wrote more than 500 scientific papers and five books of fiction. A pioneering cardiologist, he is well known for his work on congenital heart disease. He held dual appointments as professor at the Keck School of Medicine of USC and director of experimental cardiology at the Huntington Medical Research Institutes, and was a research associate at Caltech. He also was passionate about music, particularly composition. In 2000, he donated more than 300 original musical scores to the university. These now comprise the Richard J. Bing Collection of Music Scores.

Kent Carter of Rowland Heights, Calif.; Dec. 12, from a car crash, at the age of 60. He lettered in USC football in 1970 and 1971 as a linebacker, and later went on to play with the New England Patriots. In 1981, he joined the Los Angeles Police Department, where he spent nearly three decades, first working patrol in the Wilshire, Rampart and 77th divisions, and later in the labor relations division. He is survived by his wife, Sharon, children Preston and Courtney, and brother Darryl.

Henryk Górecki of Katowice, Poland; Nov. 12, at the age of 76. He was an acclaimed composer famous for his "Third Symphony," which was performed for the first time in America by the USC Symphony Orchestra in 1997 as part of a Górecki autumn music festival organized by USC's Polish Music Center. From 1975 to 1979, he served as head of faculty at State Higher School of Music in Katowice. He received Poland's highest distinction, the Order of the White Eagle. He is survived by his wife, Jadwiga, and children Anna Gorecka-Stanczyk and Mikolaj.

[IN MEMORIAM] Joseph R. Cerrell

Joseph R. Cerrell '57, a Los Angeles political consultant and public relations practitioner who co-founded the Jesse M. Unruh Institute of Politics at USC, died Dec. 3 at his home in Camarillo, Calif., of complications from pneumonia. He was 75.

"Joe Cerrell helped to create modern political consulting," said professor Ann N. Crigler, chair of the Department of Political Science at USC. "He shared his expertise and enthusiasm with hundreds of students over the years and inspired them to get more involved in politics at many levels."

Cerrell's political career began in the 1950s at USC, where, as an undergraduate studying political science, he started the Trojan Democratic Club. His political savvy caught the eye of Jesse M. Unruh, which eventually led to a position on Unruh's State Assembly campaign. Cerrell also played key roles in the presidential campaigns of John F. Kennedy, Lyndon B. Johnson, Hubert H. Humphrey, Lloyd Bentsen, John Glenn and Al Gore.

In 1966, with his wife, Lee, he founded Cerrell Associates in Los Angeles and built it into one of the most successful public affairs and political consulting firms in the nation.

Cerrell returned to his alma mater in 1979, serving as an adjunct professor for 15 years with USC College's Jesse M. Unruh Institute of Politics.

"Because of Joe, thousands of students … got a real education in politics – not just high-quality academic research but tangible, real-world lessons," said USC College dean Howard Gillman.

Cerrell also was a past member of the Board of Governors of the USC Alumni Association.

He was active with several Italian-American organizations, including the National Italian American Foundation and the Conference of Presidents of Major Italian American Organizations. Cerrell also served on the boards of the American Association of Political Consultants and the International Association of Political Consultants.

In 1980, the Public Relations Society of America-Los Angeles presented him with the Joe Roos Distinguished Award for Community Service, recognizing his contributions to Los Angeles.

He is survived by his wife of 47 years, children Sharon and Joe Jr. '91, and seven grandchildren. ●

A special message to the USC Trojan Family

USC
UNIVERSITY
OF SOUTHERN
CALIFORNIA

USC Latino Alumni ASSOCIATION
A legacy of the USC Mexican American Alumni Association since 1973

Dear friends,

The year 2011 marks an exciting time for USC's Latino community. We are excited to announce that after careful deliberation, the board of directors of the USC Mexican American Alumni Association has voted to change the name of our organization to the **USC Latino Alumni Association**.

Our new name reflects the broader role of Latinos in the USC community today, and the tagline "**A legacy of the USC Mexican American Alumni Association since 1973**" commemorates the association's proud history. We are pleased that this change has already been met with significant enthusiasm from the university and our community.

USC is evolving at every level, and our association continues to play an important role in that evolution. Since 1973, our purpose has been to provide scholarships to increase the number of Latino students attending USC. Today, our mission has expanded to provide leadership development and mentoring opportunities to ensure our students are among the most competitive college graduates in the country.

Furthermore, as we assess the needs of our Latino student population, it is clear how diverse our community has become during the last 40 years. Today, nearly 60 percent of Latino students enrolled at USC come from a mixture of Latino and non-Latino cultural and ethnic heritages.

This decision was made with great respect for our founders and our legacy as one of the largest and most dynamic Latino alumni associations in the United States. As USC gains prominence worldwide, the USC Latino Alumni Association must expand our presence for the benefit of our students. The best way to do this is to be inclusive and celebrate the diversity of our Latino culture.

Everyone at the USC Latino Alumni Association looks forward to hearing the ways you would like help in our mission to advance Latino excellence. We look forward to a successful future together.

Fight On!

Susan Sifuentes Trigueros, '82
Board Chair
USC Latino Alumni Association

Domenika Lynch, '98
Executive Director
USC Latino Alumni Association

Learn more at www.usc.edu/latinoalumni

Sheila Holenda of Santa Barbara, Calif.; Nov. 13. She was a cataloger in the USC School of Cinematic Arts' Hugh M. Hefner Moving Image Archive from 2005 to 2009. She sang with the band Thrifty People and produced performance art with Ballpeen Hammer Artists' Collective, which she co-founded in Santa Barbara. In the 1990s, she founded a 60s-influenced band, The Roulettes. She is survived by her mother, Margarete, brothers Forrest, Greg and Eric, sister-in-law Christina and many friends.

Irvin Kershner of Los Angeles; Nov. 27, of cancer, at the age of 87. He was a faculty member for the USC Master of Professional Writing Program. After serving in the Army Air Force as an airplane mechanic and flight engineer during World War II, he began his film career as a documentarian for the United States Information Service in Iran, Greece and Turkey. He directed several Hollywood movies, including *The Empire Strikes Back*, the second film in the original *Star Wars* trilogy, and the James Bond film *Never Say Never Again*. He is survived by his sons David and Dana.

Robert Rude of Los Angeles; Nov. 2, at the age of 68. He was a longtime faculty member of the Keck School of Medicine of USC and a leading researcher in the field of bone and mineral metabolism. In 1978, he joined the USC faculty in the department of medicine, where he remained throughout his academic career. He was a pioneer in translational research in magnesium balance and its role in osteoporosis, receiving the Alexander & Mildred Seelig Magnesium Award from the American College of Nutrition in 2008.

Catherine G. "Kate" Stern of Los Angeles; Sept. 23, at the age of 100. In 1997, she gave the USC Libraries decades worth of correspondence and records that chronicle the struggle for tolerance and civil rights in Southern California, which now comprise the Catherine G. Stern Collection. Beginning her community efforts with the Parent-Teachers Association, she served on the Los Angeles County Commission on Human Relations for more than 30 years. In 1964, she was appointed to the Governor's Advisory Committee on Children and Youth. She was active on other community panels, including the Jewish Federation of Greater Los Angeles' Community Relations Committee and the KCET Community Advisory Committee. She was preceded in death by her husband, Meyer Price. She is survived by her daughter, Mathilde, five grandchildren and three great-grandchildren.

James Tyler of Los Angeles; Nov. 23, at the age of 70. He was founding director of USC's early music program and a professor of music history and literature. A versatile musician, he studied the mandolin, banjo and lute. During the 1960s, he was part of the early music ensemble New York Pro Musica and the Consort Players. In 1977, he founded the London Early Music Group and also composed and arranged music for several BBC productions. He wrote several books about music, including *The Early Guitar: A History and a Handbook*. He retired from USC in 2006. He is survived by his wife of 35 years, Joyce.

Diane Talmage Van Iden of Los Angeles; Nov. 25, of cancer. She was a longtime event planner at USC, playing a key role in planning events involving members of the USC Board of Trustees. As assistant director of the trustee program in the USC Office of the President, she was instrumental in developing programs for the university's office in Washington, D.C. She is survived by her parents Fred and Ruth, children Will, Allie '10 and Tyler, sister Tammy Almquist and brother Rick.

John "Jack" Viljoen of Sierra Madre, Calif.; Nov. 27, of complications following a surgical procedure, at the age of 75. He served as chair of the LAC+USC Medical Center Department of Anesthesiology from 1982 to 1992. After emigrating to the United States from his hometown of Cape Town, South Africa, he joined the Cleveland Clinic Foundation as a cardiac anesthesia fellow, and eventually became director of the cardiac anesthesia division. He was an early investigator of the role and perioperative use of beta blockers in cardiac anesthesia. ●

[IN MEMORIAM] Lei Jieqiong

Lei Jieqiong MA '31, a key architect of China's social service system, died Jan. 9 in Beijing. She was 106.

"Lei Jieqiong was one of USC's most inspiring alumnae," said USC president C. L. Max Nikias. "A devoted teacher and an internationally renowned scholar whose academic work spanned law, sociology, demography and family dynamics, she also was extraordinarily dedicated to her country, achieving prominence as a political leader on the world stage."

Born in the southern city of Guangzhou, China, Lei left her home country in 1924 to study chemistry at Stanford University. She later decided to change course after realizing that her greater contributions would be in the social sciences. In 1926, Lei enrolled at USC to study under Emory S. Bogardus, a pioneer in sociological research on immigration, race and ethnicity.

Lei eventually returned to China, where she took her first teaching job at Yenching University, the predecessor of Peking University. She soon became recognized as one of China's most prominent educators, and was invited by the government to help develop welfare programs for women and children.

Lei also was active on the political scene. She became an organizer during the second Sino-Japanese War, rallying opposition to the invading Japanese. She was a founding member of the China Association for Promoting Democracy, which was formed in Shanghai in 1945. In 1956, she was elected a delegate to the National Peoples' Congress and later served as vice chair for two years. She also held the post of vice mayor of Beijing and served as vice chair of the 6th National Committee of the Chinese People's Political Consultative Conference from 1983 to 1988.

Although Lei never returned to Los Angeles, she maintained strong ties with her alma mater. In 2006, during the USC Board of Trustees' third official trip to China, then-USC president Steven B. Sample presented Lei with the university's International Alumna of the Century Award for her political leadership and longtime advocacy for women and children. ●

The Power of Print

USC Trojan Family Magazine will soon undergo a face-lift (after all, USC is located in the city of reinvention). After researching hundreds of different magazines for inspiration, one thing rang true: Print remains a powerful medium. Test your knowledge on the most famous, or infamous, moments in American magazine publishing.

» CONTEST RULES Calling all magazine junkies, bibliotrophs and printophiles! We are looking for correct answers to each magazine musing. Up to five $30 gift certificates from Borders Books and Music will be awarded to the most bibliocentric responses. If more than five perfect entries are received, the winners will be drawn by lot.

1. Charles Lindbergh's flight across the Atlantic landed him on the cover of *TIME* magazine's first "Person of the Year" issue in 1927. Which year was the first and only instance when an inanimate object was named "Machine of the Year," and what was the machine?

2. Debuting in 1969 and still going strong, this magazine was dubbed "the Crystal Ball of Pop Culture" by its creator, a legend of the pop art movement.

3. It was the first U.S. magazine devoted to upscale food, wine and fine dining. After 68 years of circulation, editors announced that they would cease monthly publication in 2009.

4. This infamous publishing pioneer became partially paralyzed and wheelchair bound when a radical white supremacist attempted to assassinate him outside of a courthouse in Lawrenceville, Ga.

5. Established in 1898 as a promotional piece for the Southern Pacific Transportation Company, this magazine was designed to combat the negative "Wild West" stereotypes about California. It initially was made available on trains and at boarding stations, but today boasts a national circulation rate of 1.2 million.

6. The 1995 inaugural cover of this political magazine featured supermodel Cindy Crawford dressed as George Washington. Although it had the largest circulation of any political magazine at the time, it ceased publication in 2001 after the untimely death of its founder.

7. In 1964, this sports-centric publication developed an annual special issue to brighten up the winter months, a typically slow point in the sporting calendar. It remains the most popular single issue of the magazine each year.

8. An heir to one of the largest publishing conglomerates in the world, she was sentenced to 35 years imprisonment in 1976 for allegedly partaking in a bank robbery with a radical urban militant group.

9. Several hours after this iconic photo was taken by famed photographer Annie Leibovitz, the male subject was murdered in New York City. Name the victim as well as the publication that ran the famed photo on the cover of its January 1981 issue.

10. The first widely distributed feminist publication, *Ms.* first appeared in 1971 as an insert in *New York* magazine. Name the DC Comics superheroine that graced *Ms.* magazine's first newsstand cover.

11. Following his controversial refusal to join the U.S. Army due to religious beliefs and an opposition to war, champion boxer Muhammad Ali, pierced by six arrows, posed for the cover of which magazine?

12. *Playboy* magazine began with a simple motto: "Entertainment for Men." Which budding Hollywood starlet defined the term "blonde bombshell" by appearing on the cover of its 1953 debut issue? ●

Send your answers no later than **April 15** to The Last Word c/o *USC Trojan Family Magazine*, University of Southern California, Los Angeles, CA 90089-7790. Submissions by fax (213-821-1100) and e-mail <magazines@usc.edu> are welcome.