

# The Graduate

*A Magazine for the  
Graduate Community*

UNIVERSITY OF CALIFORNIA, BERKELEY



Spring 2008



## 2006–2007 Graduate Degrees Awarded

Academic Master's	779
Professional Master's	1,184
Juris Doctorates	314
D. Optometry	71
Certificates	122
Doctorates	896

# Graduate education at a glance

Arnold Yip photo

## Who are the graduate students at Berkeley?

If we begin with the entering class in fall 2007, they are 2,977 men and women who come from throughout the United States and around the world. Almost half are from California. Thirty percent come from other states, with the highest numbers from New York, Massachusetts, Illinois, Washington, and Texas. The rest are international students who represent 67 countries, with the highest numbers from India, China, Korea, Canada, and Taiwan.

Nearly a half century separates the life experience of the youngest (18) from the oldest (66), though both of them are interested in math and physical science. The average age in this group is 27. They will be studying in 95 different majors, with 37 percent seeking a Ph.D. For a fuller picture of the graduate community at Berkeley, we offer the following data.

### Fall 2007

#### Graduate Applicants

Total	32,293
Admitted	5,856
Entering students	2,977

#### Graduate Enrollment

Total	10,317
Men	5,677
Women	4,640

California residents	6,345
Nonresidents	3,025
No designation	947

African American	322
American Indian/ Alaska Native	121
Caucasian/White	4,505
Chinese American	783
East Indian/ Pakistani American	425
Filipino American	102
Japanese American	130
Korean American	186
Pacific Islander	24
Vietnamese American	112
Other Asian American	54
Chicano	311
Latino	309
Other/no ethnic data	1,090
International	1,843

#### Field of Study

Biological Science	582	Journalism	113
Business	1,493	Jurisprudence & Social Policy	38
Chemistry	512	Law	934
Education	430	Natural Resources	317
Energy/Resources Group	59	Optometry	279
Engineering	1,673	Physical Science	593
Environmental Design	356	Public Health	438
Health/Medical Science	42	Public Policy	159
Humanities	801	Social Sciences	1,186
Information	79	Social Welfare	233

#### Major Extramural Fellowships Awarded to Berkeley Graduate Students

National Science Foundation	358
<i>First Year</i>	94
<i>Continuing</i>	264
Foreign Language & Area Studies	62
Institute of International Education (IIE) Fulbright	19
U.S. Department of Education—Fulbright-Hays Doctoral Dissertation Research Abroad (DDRA)	14

#### Academic Appointments

Graduate Student Instructors	2,000 per semester on average
Graduate Student Researchers	2,300 per semester on average

Source: Graduate Division

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## ON THE COVER

University House, a handsome sandstone brick mansion, serves as the official residence of Chancellor and Mrs. Birgeneau and is used by the campus to host events and welcome visiting dignitaries. Built in the Italian Renaissance-style, the structure is listed on the National Register of Historic Places. A photograph taken in 1911 shows Teddy Roosevelt seated in a motor car at the foot of the entry steps when the building was completed. Our cover shot, showing the sundial around noon, was taken more recently. (Arnold Yip photo)

# Portraits & Observations

*Emily Prince documents the cost of war*

By Lisa Harrington



**American Servicemen and Women Who Have Died in Iraq and Afghanistan (but Not including the Wounded, nor the Iraqis, nor the Afghanis):** "The numbers kept coming up in the daily reports. Five here, fourteen there, one day after another. And then the growing figure mounting over a thousand. Peripherally it was ever-present, but still only an abstraction.... I needed to see pictures of them, to familiarize myself just a tiny bit more with what was happening far from my warm home," writes Emily Prince in an introduction to her project. Shown above at the 52nd Venice Biennale, the artwork has been seen by thousands of people from around the world. (Courtesy of designboom.com)

In her San Francisco studio, artist Emily Prince quietly continues a work-in-progress, her vast memorial to U.S. troops whose lives were lost in Operations Iraqi Freedom and Enduring Freedom. The artwork she's created, completely by hand, consists of thousands of individual, wallet-size portraits, finely drawn in graphite, that, when arranged on a wall, create a very large map of America.

Conceived by Prince on November 4, 2004, the day after the last presidential election, her project *American Servicemen and Women Who Have Died in Iraq and Afghanistan (but Not including the Wounded, nor the Iraqis, nor the Afghanis)* was prominently displayed at the 52nd Venice Biennale, the historic and prestigious international art festival held in Italy last summer through fall. Prince, then 26, was one of the youngest artists invited to participate. "I was stunned," she says. "I never thought my work would be in it at any point, and certainly not now."

Before leaving for Venice, she confessed some fears regarding reception, but reports Prince, "People were so kind to me there. I met artists from several continents who were directly kind to me about my work." Her apprehensions about physically installing the work there ("because it's such a large piece and the size is always changing — I wasn't even sure that it would fit") quickly dissipated as an eager crew composed of artist Shaun O' Dell (her husband), two Italian art students, a gallery rep from New York, and a Greek journalist who just happened to be going through



**Face to face:** During the Venice show, her wall of portraits brought Prince considerable notice and praise from the press. Michael Kimmelman, chief art critic of *The New York Times*, called her installation a "remarkable work." (Courtesy of designboom.com)



© Michael Winkler Photography

**Portrait of the artist:** Emily Prince, who will earn an MFA degree from Berkeley this year, has completed over 4,000 drawings of fallen servicemen and women. "I'm just continually trying to catch up," says Prince. "The more I draw, the more there are to draw."

the gallery helped her pin the portraits in place (to specific locations representing their hometowns), finishing well ahead of time.

During the 10 days she spent there, Prince was pleased to see such attentive crowds viewing the work, including a group of women janitors who paused each evening to study the portraits. She also had some time to herself, to view pieces by other artists. "When I saw their work, I was just amazed to be among them," says Prince. "It felt like a great privilege to have the experience not just of being in the show but seeing it too."

Committed to the project, for as long as the war continues, Prince makes weekly visits to *The Military Times*, an online memorial site (<http://www.militarycity.com/valor/honor.html>), where casualties, as confirmed by U.S. Central Command, are listed and photographs and biographical details can often be found. She saves the information she finds there in a journal. She uses 4 x 3 inch sheets of vellum for the portraits, in colors meant to correspond to the race of each soldier, as a way to document racial demographics. Her project also includes a chronology of military deployment and casualties.

Most moving are portraits on which she has included remembrances from family and friends of the soldiers. For example, a private first class from Troy Alabama, 21, is remembered by his sister as a "big teddy bear" of a brother who "would do anything for you." Another portrait shows a 19-year-old service woman from Davenport, Iowa, who "was determined in everything she did" and wrote to her parents that "being deployed was one of the hardest things." A high school teacher remembers a service-

man, 18, from Paradise, California, who was a "deep thinker" and excelled at math and physics, "who had a bright future as an engineer."

Prince, who grew up in the Sierras in Gold Run (pop.125), says her artworks (including an exhibit called *Familiar* at the Eleanor Harwood Gallery in San Francisco in which she catalogued all the hats, all the lamps, and other items in her apartment) share common threads: they map her environment and focus on things, one at a time. "It's the way I look at the world," she says. Spending time with each soldier's face is her way of engaging with the information on a personal level "somewhat akin to prayer."

Her memorial to the troops will appear next in a group show (May 18–October 19) on loss and remembrance at the Wanas Foundation in Sweden (<http://www.wanas.se/>), and later will travel to the Saatchi Gallery in London (<http://www.saatchi-gallery.co.uk/>).

Though the portraits are a large part of her practice, Prince devotes most of her time to the MFA program at Berkeley, where she's been studying with Ann Walsh, Justine Taylor, and Brody Reiman, faculty in Art Practice whom she calls "very supportive." With an undergraduate degree in studio art and psychology from Stanford, she chose graduate school at Berkeley because she had been questioning her work and needed "a safe place to experiment." She also wanted to try her hand at teaching here. Fall semester, she taught an introductory art class to 26 undergrads and found that she "thoroughly loved it." In May Prince will present a new work, using animation to show passage of time, in the MFA Exhibit on campus.

To find more art by Emily Prince, visit:

All of the American Servicemen and Women project  
<http://www.alloftheamericanservicemenandwomen.com/>

Kent Gallery  
<http://www.kentgallery.com/>

Eleanor Harwood Gallery  
[http://www.eleanorharwood.com/Site/Emily\\_Prince.html](http://www.eleanorharwood.com/Site/Emily_Prince.html)



**National archive:** "The act of drawing is very intimate," says Robert Storr, curator of the 52nd Venice Biennale, which took place in Venice, Italy, from June 6 through November 21, 2007. Storr discovered Prince's memorial to American troops on display in archival boxes (above) at the Kent Gallery in New York City. (The gallery found her work in an *Art in America* article about the Bay Area Now 4 show in San Francisco in 2004.) "What's good about Emily's project is that it's not rhetorical or sentimental," notes Storr. "It really says, 'here are individuals.' And this honors the sacrifices." (Courtesy of the Artist and Kent Gallery)

# Berkeley reveals a new Starr

The C.V. Starr East Asian Library brings Berkeley's extensive collections together for the first time, opens scholarly opportunities

By Dick Cortén

On March 17, a treasure trove in the central core of campus opened its tall bronze doors to the public, ready for scholarly business and a certain degree of tourism.

Sought and planned for decades the C. V. Starr East Asian Library became a reality during two years of construction, just across Memorial Glade from its organizational parent, the Doe Library.

The treasures that now reside in Berkeley's newest library have for decades been scattered around the campus, often stored in less-than-ideal conditions. They include over 900,000 volumes of Chinese, Japanese, and Korean materials, the largest repository of academic materials on contemporary China outside of that country, and the largest collection of stone rubbings — some dating before the year 1000 — among all research libraries outside of Asia.



Now they have a home, together, in the first freestanding library in the United States constructed exclusively for an East Asian collection. Its Henry Fong Rare Book Room contains a vault for the rarest of the rare, with temperature and humidity controls and modern security measures.

The push for such a facility came initially in the 1980s, from faculty in fields related to East Asia. Today, more than 70 Berkeley scholars teach over 200 courses concerning East Asia each year to more than 5,500 undergraduate and graduate students. This campus is one of the few institutions in the U.S. to offer five years in Chinese, Japanese, and Korean language study.

Even in their former locations, with restricted hours of access, the library's materials have been compelling.

"When I graduate in spring 2008, the hardest part of leaving Berkeley will be saying farewell to the East Asian Library," said Janice Kanemitsu, a Ph.D. candidate in Japanese studies who is researching Japan's early modern period (1600–1868). "It is absolutely one of the top two libraries in the country for my field, both in primary texts and secondary scholarship."

"Not only does it have a vast collection of Japanese-language secondary scholarship in my field of specialization, I can also hold in my hands and read the very same books as readers of the Tokugawa period," she said. "Outside of Japan, perhaps only the Harvard-Yenching library (at Harvard University) has a larger collection of Tokugawa-period woodblock-printed books."

The facility will be a "knowledge hub to support scholastic research, exchanges of ideas and discoveries of new insights. It will become a key conduit where the East and the West converge," said Coleman Fung, a UC Berkeley alumnus and the CEO and founder of Open Link Financial Inc. He donated \$5 million for the new library's Coleman Fung Media Center, which will have links to public and private databases in Japan, Korea and China that relate to the humanities and social sciences. "It is critical," Fung said, "that Berkeley furthers its mission by providing such a constraint-free conduit where cultural gaps can be turned into educational opportunities and bridged accordingly."



## C. V. STARR EAST ASIAN LIBRARY BASICS:

Dedicated: October 20, 2007. Opened: March 17, 2008. Location: north of Doe Library, across Memorial Glade, near Haviland Hall, on Observatory Hill below McCone Hall. How big: four floors, 68,000 gross square feet. Designed by: Tod Williams Billie Tsien Architects. How much: \$46.4 million. Private sources: more than a thousand donors, among them the C. V. Starr Foundation (cornerstone gift of \$8 million, pivotal to the project) and a donor group honoring former Berkeley Chancellor Chang-Lin Tien, the engineer-scholar who became the first Asian-American to lead a major U.S. research university (collective contribution more than \$6 million). Named for: Cornelius Vander Starr (1892–1968), a Berkeley undergrad, who became an insurance pioneer with the American International Group with a deep interest in Asia. Peg Skorpinski photo





© Paul Marcellini Photography

**Into the wild:** Sangre de Cristo Mountains, Colorado

## A Grammy-winning CD showcases American Indian singer-scholar

By Cathy Cockrell

As a musician and a scholar, “I’m very much about saying ‘we’re here,’ says American Indian singer and composer John-Carlos Perea. In February, that message of survival got a worldwide stage, when the Paul Winter Consort CD *Crestone* — featuring Native American contributions from the Berkeley doctoral student — won a Grammy for Best New Age Album.

Perea, 33, was in San Francisco watching the award ceremony online as the envelope was opened and the winning recording announced. “When they read our names, I almost had a heart attack,” he says

Celebrating a high corner of the Sangre de Cristo Mountains of southern Colorado, *Crestone* features a handful of original pieces by Perea (performing voice, pow-wow drums, and cedar flute). It also showcases “Witchi Tai To,” a song from the Native American church that saxophonist Jim Pepper introduced to mainstream audiences in 1969, in a fusion-jazz arrangement that remained on the Billboard charts for weeks.

As it happens, Pepper, a Creek-Kaw jazz musician who died in 1992, is the subject of Perea’s dissertation at Berkeley, where he studies ethnomusicology with a focus on American Indian music. His research, in part, probes the origins of “Witchi Tai To,” which is said to be of Comanche origins.

For the *Crestone* arrangement of the song, Paul Winter used a Brazilian rhythm section, overdubbed with Perea’s singing. He also invited Perea to write a portion of the liner notes. “One of Paul’s major concerns was that the history of the native people in the U.S. is being erased,” says Perea, who discusses American Indian musical tradition in his written contribution to the CD. “If I didn’t have the background from Berkeley,” he says, “I wouldn’t have been able to do that in as effective a way.”

Of Mescalero Apache and German-Irish descent, Perea first began playing professionally at 19. His solo and collaborative recordings (featuring his Northern Plains vocals, pow-wow drumming, and electric-bass guitar licks) date back to the late 1990s. After hearing Perea on a recent release, Paul Winter invited the young musician to participate in the *Crestone* project.

“When he called I was totally blown away,” Perea recalls.

The primary recordings for *Crestone* were done at 15,000 feet, capturing the natural acoustics of North Crestone Lake. Perea, however, was studying for his qualifying exams at the time and couldn’t join Winters. Luckily, the renowned world-music exponent offered to record the Berkeley grad student in a less-pristine setting, in Redwood City.



Niki Megeloo photo

**Singer-scholar:** John-Carlos Perea

For Perea, the collaboration on *Crestone* has opened up new research possibilities. Through Winters he has met musicians who played with Jim Pepper — whom Perea regards as a major figure in popularizing American Indian music. “Without him, I wouldn’t have much of a musical or performing or academic career,” he says.

Not only Pepper but “a lot of the family” inform Perea’s contributions to *Crestone*. Some tracks — including “Blue Horse Special,” composed by Perea’s grandfather — are by or about “local American Indian community members who have passed on,” he notes. “It couldn’t get any better.”

For more information, see John-Carlos Perea’s [discography and downloadable musical tracks \(http://www.myspace.com/johncarlosperea\)](http://www.myspace.com/johncarlosperea).

Cathy Cockrell is a writer for UC Berkeley’s NewsCenter.

# Enriching the culture, Educating the next generation

*An interview with Andrew J. Szeri, Dean of the Graduate Division*

By Lisa Harrington

Andrew Szeri savors his walk to work each day, winding through the scenic neighborhoods of Berkeley. He says the journey to Sproul Hall is peaceful and provides time to think before he dives into the emails and voicemails that await him.

A professor of mechanical engineering, Szeri has served the Graduate Division since 2005. As an associate dean, he led the Berkeley campus in collecting data for the upcoming national rankings of graduate programs, a peer review conducted once a decade by the National Research Council. (The new report is expected to be released in fall 2008.) He also participated in fundraising efforts, financial planning, and measures to ensure the security of graduate student records.

When Szeri was appointed Graduate Dean last year, Executive Vice Chancellor and Provost George W. Breslauer, who oversees the Graduate Division, noted that “Andrew Szeri has a distinguished career of engagement on issues surrounding graduate education, and interest in the welfare of graduate students. He has an impressive ability to build consensus and to deal effectively with delicate issues, and has a reputation for being an excellent listener who can respond quickly and cogently to issues in graduate education.”

Szeri's leadership on campus has involved various positions in the Academic Senate's Graduate Council, where he has served as chair and on key committees dealing with student services, enrollment balance, and graduate-student-instructor affairs. As Graduate Dean, he succeeds Mary Ann Mason, who stepped down in July 2007.

A specialist in fluid dynamics, Szeri will continue his research while serving as Dean. He currently guides the graduate work of seven doctoral students in mechanical engineering. Together they are conducting research that he hopes will lead to improvements in the medical treatment of patients with epilepsy, the prevention of HIV transmission, and several other areas.

A man of many interests, Szeri was born in England and spent time as a child living in Chile before his family moved to the United States. He earned his bachelor's degree at the University of Pittsburgh and his Ph.D. at Cornell. In his spare time, he enjoys hiking in the mountains, sailing on the Bay, and, on occasion, playing the ukulele.

Over the past few months, Szeri has met with deans on campus to assess student support gaps, and with focus groups of students to better plan for needed resources and services. He has also crisscrossed the globe to meet with deans of comparable graduate schools, policymakers, foundations, alumni, and friends of the University, trips he often shares in *eGrad*, the Graduate Division's electronic newsletter.

His own path to an academic career was, in some respects, following in the footsteps of his father, a professor (now emeritus) at the University of Delaware. “I find it very satisfying to help people achieve their goals,” says Szeri, who adds, “It's inspiring to me.”



Dick Coriën photo

Andrew J. Szeri, Dean of the Graduate Division

In February, he talked about his initial priorities as Dean.

**Q:** During your first year as Dean, you've met with faculty and graduate students across the campus. What have you learned about graduate education at Berkeley?

**A:** I've learned that there is a very high standard of excellence in graduate programs, from the tiniest of majors, like medical anthropology, to the largest departments, like molecular and cell biology. There's tremendous evidence in the number of graduate students who compete successfully for NSF fellowships, Fulbrights, and other major external awards and those who do well in our own campus fellowship competition.

**Q:** Let's talk about graduate students. Professor Y. T. Lee, who earned his Ph.D. from Berkeley in 1965 and later won the Nobel Prize in Chemistry, said, “I came to Berkeley as a graduate student to work with the world's greatest faculty. I came back to Berkeley as a professor to work with the world's greatest graduate students.” Are Berkeley's students unique?

**A:** Well, I've had experience with graduate

students at Cornell, Caltech, UC Santa Barbara and UC Irvine. I'd have to say that every graduate student I've met at Berkeley wants to change the world. They usually like to tell me why within seconds of meeting! That keen motivation sets Berkeley students apart.

**Q: As Dean and the chief advocate for graduate students, what do you hope to achieve?**

A: My primary goal is to try to diversify the sources of funding for graduate student support. The proposed budget cuts are a reinforcement of this goal — we really need to get out of the business of relying on the state for a great majority of funding for graduate students. For this reason, I've been involved in several foundation proposals, some of which I'm happy to say already were successful.

*“...graduate alumni enrich the culture, they support the social fabric of the state, educate the next generation, and make the discoveries that are the basis of new industries. We need all of those things to thrive.”*

My second priority is to encourage mentorship at all levels. For example, this fall for the first time we held a reception and orientation for faculty members who are new to the campus, to introduce them to the Graduate Division and teach them what there is to know about services available, to help them work with graduate students. I've also been involved in generating a proposal for mentorship of undergraduate research by graduate students, and I'm particularly excited about that.

**Q: Over the past year, several gifts from foundations have included provisions for graduate education. Tell us about the Hewlett Foundation's \$113 million gift.**

A: The Hewlett gift provides matching funds for the establishment of 100 faculty chairs. These will be uniformly distributed around campus. Most important is that the payout of the chair endowments will support graduate students in the chair-holder's discipline directly. This is a concrete acknowledgement of the synergism that exists at the foundation of Berkeley's excellence: great professors are attracted by great students. Great students are attracted by great faculty members. Professor Lee said it best!

**Q: One of the newest gifts, \$6 million, comes from the Mellon Foundation. What will this mean for Berkeley?**

A: The Mellon gift is a wonderful acknowledgment of our superb humanities doctoral programs. This gift establishes an endowment, which will be used to 'top off' the multi-year fellowships that humanities applicants win in our campus-wide fellowship competition. The fellowship recipients will receive stipends that are competitive with the best offered anywhere. After the initial ramp-up, there will be some 50 students supported in this way at any one time — forever, as this is an endowment. This is a terrific way to help recruit the best students in the humanities.

**Q: How are private gifts making a difference?**

A: Private endowments fund a large number of individual awards — including fellowships — and support about 30 percent of the funds we distribute to graduate programs around campus for graduate student support. Without private funds, Berkeley would simply not be the same place.

**Q: Last year's Named Fund Initiative did quite a bit to boost fellowship support. Were you surprised by the large number of faculty who participated? What does it tell you about the potential for the Chancellor's Challenge, a program modeled on the NFI?**

A: Through the NFI and the Chancellor's Challenge we have raised about \$4 million in new endowments for graduate fel-

lowships. As for potential, we made a calculation that if every tenured professor set up the minimum-sized named fund devoted to graduate student support, the campus would gain \$27 million in endowment — which is the size of the graduate fellowships part of the Hewlett gift! Of course, not everyone is in a position to give; balancing that, some are able to give more than the minimum.

Moreover, the pool of eligible donors in the Chancellor's Challenge includes not only current and retired faculty, but also staff and their spouses or partners. In this program, even gifts by current students are eligible. It's encouraging to see the campus community step forward to support what they truly believe in.

**Q: You established a fund for international students. Getting at motivation, tell us about your own experience working with international graduate students.**

A: Recently in my own research group I've had the pleasure of working with French, Korean, and Swedish students. They bring a wonderful richness to the group, sharing what they've learned during their academic preparation in different cultures. Domestic students benefit greatly from that. The mixing helps with the development of 'intercultural competence' about which Chancellor Birgeneau speaks so eloquently.

As for my fund, I am aware that international students are sometimes admitted and offered financial support, but have no resources to travel to Berkeley to start their studies. I saw that my own modest graduate student support fund could make a difference there, one student at a time.

**Q: How have graduate students inspired your teaching and research?**

A: The many ways in which graduate students contribute to the excellence of Berkeley, to the research and teaching, are immeasurable. My own graduate students are constantly pulling me into new fields. I do research into mesoscale models of the human cerebral cortex thanks to a couple of doctoral students whose dissertations I advised. I collaborate with researchers in the school of public health on social acceptability considerations of our research into anti-HIV microbicides — again because of a doctoral student who pulled me in that direction. Without such inspiring graduate students, I wouldn't have such interesting ways to engage in research.

**Q: Why is graduate education so important to California?**

A: Because graduate alumni enrich the culture, they support the social fabric of the state, educate the next generation, and make the discoveries that are the basis of new industries. We need all of those things to thrive.

**Q: What makes Berkeley's programs so highly competitive with top private universities? For instance, why do students who get offers from Princeton, Harvard, and Yale decide to come to Berkeley?**

A: I think it's the quality of the scholarship, the comprehensive excellence in research across the campus, the warm social climate of shared purpose — these are all aspects of Berkeley's attractiveness.

We do very well in our competition for the best students. When we offer a student who triumphs in the campus-wide fellowship competition one of our most competitive multi-year fellowships, that student accepts nearly 60 percent of the time. That's terrific, considering that the best students often have multiple offers. So we do find success when we have the resources. What will determine the long term prospects for the future of many distinguished graduate programs at Berkeley is: how many graduate fellowships of this kind will we be in a position to offer?

**Q: Berkeley came out on top in the last survey by the National Research Council in 1995. Tell us about the soon-to-be-released NRC survey. And, what are your thoughts, in general, about rankings?**

A: In the most recent round of the NRC Survey of Doctoral Programs, I was charged with organizing the data collection



**Stepping up:** The associate graduate deans (from top, left to right) Carlos Fernandez-Pello, Joseph J. Duggan, and Susan J. Muller join Dean Andrew J. Szeri on the steps of the Valley Life Sciences Building.

Peg Skorpiński photo

effort. I'm delighted to say our faculty rose to the challenge of answering their online surveys in great numbers. This was crucial because the NRC has significantly changed the way rankings will be done this time around; they will be based on quantitative measures of doctoral program quality and only indirectly on assessments of reputation.

In general, I think there's too much emphasis by prospective students on the fine detail in rankings. Rather than obsess over whether to attend a department receiving a ranking of 97 or 96 percent in *U.S. News & World Report*, I think it would be far more productive to look at the rankings of other programs they will likely depend on indirectly at the same institution. This is a better reflection of how students engage in graduate study now.

**Q: Diversity is an important issue at the graduate level. What efforts are there to increase the number of underrepresented students?**

A: Recent analysis shows that when underrepresented minority students apply to Berkeley for graduate study, they gain admission and accept offers of admission in the same proportion as majority students. That's excellent, as it shows where we need to concentrate our efforts: on increasing the numbers of high quality applicants.

For this reason, I've been working with the new Vice Chancellor for Equity & Inclusion, Gibor Basri, and Vice Provost Christina Maslach on a proposal for a large, structured undergraduate research program. In the program, doctoral students advanced to candidacy for the Ph.D. will mentor undergraduate research interns. Through the program, undergraduates will have a window into the life of a graduate student and, we hope, will see the way to graduate school as open and clear.

**Q: If a terrific candidate for admission were torn between Berkeley and another first-rate graduate school, and you had only a few minutes to convince him or her to enroll here, what would you say?**

A: I would say it's the quality of the research and teaching in every field at Berkeley that is its greatest asset. That means you can learn what you need to of other subjects to enrich your own research. You can't find that at universities that are best in just a handful of disciplines.



# The tech world's **BIG BOOST FROM BERKELEY**

by Dick Cortén

This is not a Cold War stereotype with impossible claims to breakthrough inventions. UC Berkeley has not felt the need, for institutional pride, to assert pioneering involvement in, say, the steam engine, the electric light, or the airplane.

However: Berkeley's role in advancing the computer, the transformative invention of our time, may not be widely understood.

First, the computer itself. While distantly related to the abacus — a calculator that predates our written numerical system and may be 2,400 years old — the computer, like a student, takes instructions. It's programmable. An early example of such instruction is Joseph Marie Jacquard's 1801 textile loom, which used punched paper cards to tell the device how to weave intricate patterns automatically. The 1890 U.S. Census used punched cards to count Americans in the first use of large-scale data processing, with machines made by a company that turned into IBM.

The conflicting priorities of World War II stepped up the evolution of the computer, mainly in Germany, the United Kingdom, and the U.S. (Encoding and decoding on the German side, code-breaking on Allied side, which enlisted English mathematician/logician/cryptographer **Alan Turing**, who is frequently seen as the father of modern computer science.)

The opposing sides used punched cards to tell mechanical devices employing vacuum tubes how to manipulate and extract data. These were analog computers. A Michigan-and-MIT alumnus named **Claude Shannon**, in what has been called the most important master's thesis of all time, essentially founded information theory and the theory behind the digital computer and digital circuit design. (He was 21 at that point.)

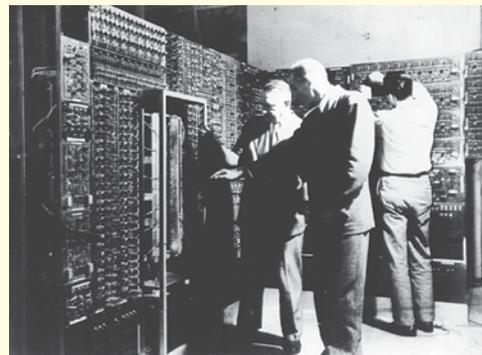
Transistors replaced vacuum tubes, and computers got smaller, faster, cheaper, and more reliable. In the 1970s, the integrated circuit did the same thing but more so, and the stage was set for computing power to move out of air-conditioned "computer rooms" and the sole control of the technical class and arrive in the hands and offices and homes of average citizens.

In the next steps of this revolution, nobody invented the personal computer, the operating system, or the mouse, much less the Internet, entirely alone.

But we wouldn't be where we are today without the major pieces UC Berkeley has placed solidly into those separate but intertwined jigsaw puzzles through the work — and inventive genius — of its faculty, its graduate students, and its undergraduate and graduate alumni.

What follows is a selection, not a complete list, of Berkeley-connected puzzle-solvers, with brief explanations of what they did. Names of Berkeley alumni are in **blue** in the narrative for ease of identification.

## **CALDIC:**



### the big, many-tubed instructional ground floor

Back in 1948, **Paul Morton** Ph.D. '43, a young associate professor of engineering, began work on a project called CALDIC (the California Digital Computer). Your wristwatch may have more



Photo courtesy of the Morton family

**PAUL MORTON**

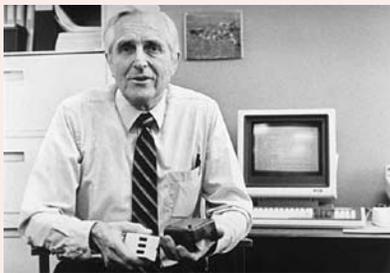
computing power now, but CALDIC was inexpensive and simple to operate for its day. Preceding transistors, it used more than a thousand vacuum tubes. Its memory unit was a rotating magnetic drum. It was a notable step in computer design, but it was far more important as an educational component for a generation of Cal master's and doctoral students, soon to be leaders in the computer industry. Morton developed Berkeley's first computer courses and set up the first computational service center on campus (with IBM punch-card machines). And Cal students went out to do their share of changing the world.

## THE MOUSE:



to the world from the mind of a Berkeley grad

The familiar computer mouse had an accurate but uncanny name — “X-Y position indicator for a display system” — on the patent application **Doug Engelbart** filed in 1967 (after inventing the device in 1963). By the time he received patent number 3,541,541, he had gone with the “mouse” nickname, which arose from the wire that came, tail-like, out the end. (The prototype beast, mainly unrodentlike and cumbersome by current standards, was built primarily out of wood by Engelbart’s colleague William English.)



**DOUG ENGELBART:** the man behind the mouse — and far more

Engelbart had earned his 1952 B.S. and his 1955 Ph.D. in electrical engineering at Berkeley (working on CALDIC with Paul Morton and Al Hoagland B.S. ’47, M.S. ’48, Ph.D. ’54, who would become a pioneer in the magnetic disk drive industry, along the way), after which he soon joined Stanford Research Institute (the precursor of SRI International), where he not only did the mousework, but also, with his team, pioneered much of today’s human and computer interaction, online computing, and e-mail, including such things as bit-mapped screens, hypermedia, and what turned into the graphical user interface, or GUI, and onscreen video teleconferencing.

His computer mouse patent expired in 1987, before the mouse became the must-have input device of the personal computer revolution he envisioned, when most individuals were no longer kept away from computers. He never received royalties for the invention.

Engelbart received the Turing Award (often called “the Nobel Prize of computing”) in 1997 and the National Medal of Technology in 2000. Now 83, he directs his own company, the Bootstrap Institute, with one of his daughters, in Menlo Park. Richard Karp, long a Berkeley computer science and mathematics professor who is himself a Turing winner, says “Engelbart was ahead of his time in understanding how computers could augment human intellect.”

## AN APPLE & A DESKTOP: making it easier and more fun

In 1972, handheld electronic calculators were available and all the rage, but not yet cheap. In the dorms at Berkeley, undergrad **Steve Wozniak**, who would later go on to co-found



Peg Skorpinski photo

**STEVE WOZNIAK**

Apple Computer, built and sold what he called his “blue box,” a tone generator that let people make free phone calls. That same year, ’72, **Butler Lampson**, who got his Ph.D. at Berkeley in 1967 wrote a now-famous memo to the home office at Xerox, parent company of the seminal Palo Alto Research Center (PARC), where he then worked. In it, he outlined a conceptual “architecture for information” from which grew many key elements of personal computing, including interfaces with windows and icons, on-screen full-page document creation (remember WYSIWYG?), laser printing, and more.

Lampson’s career work won him the Turing Award in 1992.

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Peg Skorpinski photo

**BUTLER LAMPSON:** he saw the elements of desktop publishing

## UNIX:

You could take it with you. And change it.

**Ken Thompson** B.S. ’65, M.S. ’66 has been called “the most talented programmer the computer industry has ever seen.” After he left Berkeley, Thompson worked for over three decades at Bell Labs, where he was the principal inventor of UNIX, a computer operating system that even now, several decades later — an eternity in the computer world — is regarded, with its descendants, as among the best operating systems ever devised.

In the early ’70s, Thompson’s first public presentation about UNIX and his paper in a prestigious journal piqued interest about it in the academic community, including Berkeley. The first copy of the operating system was shipped here, and UC began using UNIX. Thompson returned to Berkeley in the mid-’70s as a visiting professor, and encour-



Peg Skorpinski photo

**KEN THOMPSON:** known simply as “ken” in hacker circles, co-created UNIX and, among other things, Belle, the first computer made solely for chess-playing.

aged changes in the operating system. UNIX soon had two leading developers — Bell Labs and Berkeley.

In 1983, Thompson and UNIX co-author Dennis Ritchie jointly received the Turing Award for their development of generic operating systems theory. In 1999, they both received the National Medal of Technology from President Bill Clinton for co-inventing the UNIX operating system and the C programming language, which have “led to enormous advances in computer hardware, software, and networking systems and stimulated growth of an entire industry.” On the day of the presentation, Bell Labs also paid tribute to their contributions: “Without operating systems, computer hardware is useless; before UNIX, operating systems were large, vendor-specific, and designed to cope with particular features of a given machine. UNIX was the first commercially important portable operating system, usable almost without change across the span of hardware from the smallest laptops to supercomputers. It embodies visionary ideas — deliberate generality and openness — that continue to be a strong force today. Many of its approaches and notations influence the entire span of operating systems.”

Thompson retired from Bell Labs in 2000 and now works at Google.

## SENDMAIL: most e-mail gets where it's going because a Berkeley grad student solved a problem

When the UNIX source code became available at Berkeley, and could be modified, the local talents immediately started customizing it. One of these was **Eric Allman** B.S. '77, who was on his way to earning his master's degree, which he did in 1980. Working on an early (and later influential) relational database management system



Patti Meagher photo

that had defense applications, he was one of the few who had access to Arpanet, the U.S. Defense Department's network that linked academic researchers, which later evolved into the Internet. What we know today as e-mail was already happening in a limited way on Arpanet, but it was cumbersome and un-uniform. Allman simplified the process, in what he calls a quick hack that worked. On his own time, he improved his hack and

### ERIC ALLMAN

distributed it free through Berkeley's Computer Systems Research Group. In 1981, the software product became known as **sendmail**. He continued supporting sendmail for free until 1998, by which time e-mail had become massively popular and he needed help, so he founded Sendmail, Inc. The company is headquartered in Emeryville, and Allman is its chief science officer, spending much of his time on authentication and encryption tools to protect electronic messages and discourage spamming, a use of e-mail unanticipated in the early days when the emphasis was on sharing. Now more than a quarter of a century old, sendmail at this point delivers more than 70 percent of the world's e-mail.

## SUN: What's red and blue and extremely bright?

**Sun Microsystems** is a classic Silicon Valley business. Started in (cliché alert) a garage and now headquartered in Santa Clara, it's been powered since its early-'80s start by the brains and energies of Stanford and Berkeley. From a good idea and a modest start, it's grown massively, from a handful of employees to around 34,000 (in 2007), was hit by (but survived) the dot-com meltdown, and last year posted revenues

of almost \$14 billion.

Of Sun's founding fathers, three were from Stanford (an engineering Ph.D. student and a pair of 1980 M.B.A.s) and two left grad school at Berkeley early, all gambling on what seemed like a good idea at the time.

The Computer Science department lost **Bill Joy**, who had earned his M.S. in '79 and was on his way to the Ph.D.



Peg Skorpinski photo

**BILL JOY:** as an undergrad, he was fired from the International House of Pancakes. He's done better since.

before he signed Sun's articles of incorporation.

The other key player from Berkeley was **John Gage**, who became “employee 21” at Sun. Gage's econometrics studies involved huge sets of data. He needed computer time to analyze what he had, and Bill Joy was the helpful Evans Hall system administrator he went through. They talked beyond Gage's projects, about the future and a wide range of theory, and each liked the way the other's mind worked. They got together



**JOHN GAGE:** at an earlier stage, he was a record-setting All-American swimmer for Cal.

with the trio from Stanford and evolved what looked like a path to the way things should be: without mainframes, everyone with a machine and power to spare.

Joy already had a reputation as a UNIX guru. He was the primary author of a revision that took Ken Thompson's work even farther. It became known as Berkeley UNIX. As the first open-source operating system with built-in communications protocols, Berkeley UNIX became the backbone of the Internet,

which was then taking its baby steps.

Joy's prowess as a programmer was already legendary, and at Sun he extended it. Under the title chief scientist, he led hardware and software architecture and came up with the idea for Java, a platform-independent programming language that helped web browsers explode with audio, animations, and real-time interactivity. Joy was also, initially, Sun's external spokesman. The holder of more than 40 patents, these days Joy is a partner at Kleiner Perkins Caulfield and Byers, perhaps Silicon Valley's premier venture capital firm. When he was on campus in 2005 being honored by the College of Engineering, Joy said the ideas and interactions of his seven years at Berkeley were exciting and set the stage: "In many ways, I spent the next 30 years finishing things we thought of here."

Because somebody had to do it, John Gage was Sun's original salesman. "The things basically sold themselves," he told *Wired* magazine in 1996, "— a \$30,000 machine that took the place of a million-dollar mainframe."

Still at Sun today, wearing the title Chief Researcher and Director of the Science Office, Gage has become an eclectic influential globe-trotting evangelist for all things computer (especially networks and Sun) and a social activist on a wide front.

According to the job description Gage wrote when he created the position, his duties are: "Find the world's smartest people, talk to them about what they're doing, and see how Sun can help." Sun engineer James Gosling, principal author of the code in Java, says Gage has "a thousand fingers, stuck into a thousand pies."

## THE PALM: handy and brainy

**Jeff Hawkins** was, in a way, a re-entry, and then a de-entry, grad student at Berkeley. He had become interested in biophysics in high school, got his bachelor's in electrical engineering from Cornell in 1979, and went to work in the computer industry. Ever more curious about intelligence



Jeff Kubina photo

**JEFF HAWKINS:** fascinated with intelligence, human and machine

and the brain, he veered away from his career in 1986 and came here to study neuroscience. The way he wanted to do this didn't mesh with the academic structure, and he left in 1988. The upside was that another bit of writing he did in that period, for a pattern classifier program, ultimately became the hand-printed-character recognizer that became a

central element in the Palm operating system.

He's been busy ever since. He created the first commercially successful handheld computer, co-founding Palm Computing and Handspring (which introduced the PalmPilot and Treo product lines), which helped stimulate, and satisfy, the world's sudden hunger for Personal Data Assistants. Those enterprises provided the financial wherewithall for Hawkins to keep going in neuroscience. In 2002 he endowed a new research center at Berkeley — the Redwood Center for Theoretical Neuroscience, which will operate within the Helen Wills



Brusselsshrek photo

**PALM TX:** one of many steps that hastened the advent of devices like today's iPhone

Neuroscience Institute — to develop mathematical and computational models of how the brain works. His endowment is designed, in part, to provide graduate student support and fund seminars and conferences.

In 2004, *On Intelligence*, the book Hawkins wrote with science writer (and Berkeley alumna) **Sandra Blakeslee** '65, was published. It outlines his theory of how the brain works.

And in 2005, based on that theory, he founded a new company called Numenta, where he and his team are creating an artificial intelligence program that may be the first software truly based on the principles that operate the human brain. Their first product, NuPIC, is now available in "research release" for the Macintosh, Linux, and Windows platforms.

## POWERPOINT: About 30 million presentations a day, give or take

The world's most pervasive software program for presentations, PowerPoint, was co-created (with Dennis Austin) by **Robert Gaskins**, who did graduate work at Berkeley in the 1970s. The program was released in 1987, initially for the Macintosh platform, back when "desktop publishing" was a new concept, always in quotes. It allowed people to quickly and

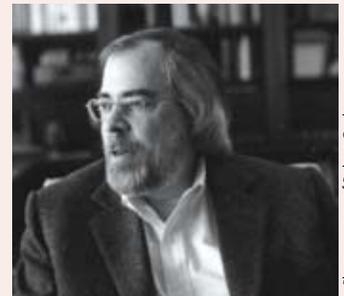


Photo courtesy of Robert Gaskins

**BOB GASKINS:** veteran of too many manually-created slides and flipcharts, he came up with a better way

easily crank out text-and-graphics slide pages for overhead transparencies, spurring the sales of overhead projectors, and then, with the advent of laptop computers and digital projection, gutting that same market. Microsoft, which bought the program (and, of course, the company) soon after the launch, has estimated that at least 30 million PowerPoint presentations are made every day. Some believe the program has well over 90 percent of the presentations-software market.

Gaskins worked for Microsoft for nearly six years, direct-

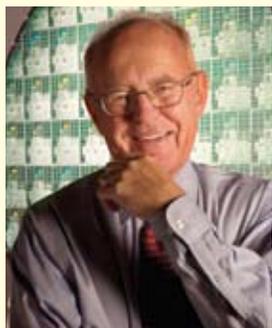
ing its business graphics unit, after which he and his wife moved to London, restored an 1890 Victorian “mansion flat,” and he became seriously interested in the concertina (“the only native English musical instrument,” according to his website). In 2001, they moved back to San Francisco, where he lives and creates “authoritative websites about concertina history.”

At Berkeley, Gaskins had earned an M.A. in 1973, and most of a Ph.D. in computer science, linguistics, and English, with the help of a fellowship from the Ford Foundation.

## INTEL:

Everything will get smaller, faster, and cheaper. It's the law.

Intel Corporation was founded by two scientists, MIT physics Ph.D. **Robert Noyce** — who co-invented the integrated circuit, also known as the microchip, which fueled the personal computer revolution and gave Silicon



**GORDON MOORE**

Valley its nickname — and chemist/physicist **Gordon Moore**, who did his undergrad work at Cal (B.S. '50), then went to CalTech for his Ph.D. Intel's third employee was **Andrew Grove**, who was born in Hungary and emigrated to the U.S. in the mid-1950s. He earned his Ph.D. in chemical engineering from Berkeley in 1963.

All three served lengthy stints as CEO, and wore various other top titles as well. Grove is remembered as the chief strategist during the company's period of greatest growth. He was named *Time* magazine's Man of the Year in 1997.

Intel is now the world's largest semiconductor corporation. Moore is most famous for promulgating **Moore's Law** — the semiconductor industry's guiding



**ANDREW GROVE**

axiom for delivering smaller, ever-more-powerful chips while making the electronics cheaper. Noyce died in 1990; both Moore and Grove are retired from the company but are highly active as philanthropists and industry advisers. **Paul Otellini** M.B.A. '74 has been CEO since 2005.



**PAUL OTELLINI**

## GOOGLE'S CEO:

Stanford lads search the world, find Schmidt

The late-'90s startup Google had been the search-engine research project of the Stanford Ph.D. students **Larry Page** and **Sergey Brin**. It became one of the greatest dot-com success stories ever.

Cal's main solace in this saga is that in 2001, Page and Brin needed some Berkeley sensibility to help guide Google's path and they recruited **Eric Schmidt**, who earned his M.S. in '79 and Ph.D. in '82 here in EECS, to be their chairman and CEO. (He had been CEO of Novell and chief technology officer of Sun, and reportedly was the only candidate who had been to Burning Man — a definite plus in the eyes of Google's young founders.)

His advice certainly hasn't hurt. Google is now the stock everyone wishes they'd bought, like IBM before the split, and Schmidt has hopped firmly onto the Forbes list of the world's richest people.



Peg Skorpiński photo

**ERIC SCHMIDT:** chatting in his company's HQ, the Googleplex

*The "Nobel Prize of computing," given by the Association for Computer Machinery (ACM)*

## TURING AWARD WINNERS

at or from Berkeley, 1966–2007

- 1983 Ken Thompson\* B.S. '65, M.S. '66
- 1984 Niklaus Wirth\* Ph.D. '63
- 1985 Richard M. Karp\*\* (faculty)
- 1989 William (Velvel) Kahan\*\* (faculty)
- 1992 Butler W. Lampson\* Ph.D. '67
- 1995 Manuel Blum\*\* (faculty; left UCB in 1999)
- 1997 Douglas Engelbart\* B.S. '52, Ph.D. '55
- 1998 Jim Gray\* B.S. '66, Ph.D. '69

\* = alum \*\* = faculty

## How to Save a Life

# Ashok Gadgil, Ph.D. '79

# Christina Galitsky, M.S. '99

The conflict in Darfur, an arid place the size of Texas, has left rural villages burned to the ground, families torn apart, and the landscape devastated. As many as 400,000 people have died there due to violence, disease, and starvation over the past five years. Some 2.5 million now struggle to survive in the Internally Displaced Persons (IDP) camps in Darfur and neighboring Chad, where women must trek several miles to search for firewood. These journeys take nearly seven hours roundtrip and often expose them to the brutality of the Janjaweed, roving militias that prey upon refugees.

In 2004, the United States Agency for International Development contacted Ashok Gadgil, of the Lawrence Berkeley National Laboratory, for help. Gadgil's idea: design a fuel-efficient, portable stove for Darfur. To do so, he enlisted Christina Galitsky and a team of graduate students, who were eager to join the project. "Anything we can do to minimize the time they spend foraging for firewood increases the chance the women will return safely," says Galitsky.

In November 2005, the researchers traveled to Darfur and brought along a cylindrical stove made of sheet metal, two feet high and 14 inches in diameter. At one of the camps they visited, in Kalma, they found over 90,000 men, women, and children living in mud huts. "The conditions were appalling," recalls Galitsky. "You could see the desperation everywhere, the terror in their eyes and voices."

There, Galitsky rolled up her sleeves, lit the stove, and cooked a potful of assida, a sticky dough made of flour, oil, and water that the Sudanese top with fried onions, tomatoes, meat or yogurt, okra, and spices — their daily staple. As the women watched her cook using only half as much wood as in traditional three-stone fires, word spread quickly. At an encore demonstration, over 250 women, 100 sheikhs, and others of high rank came to witness this feat. Even the camp leader, running a high fever, left his sickbed to attend.

The trip to Darfur was high risk since aid workers had been targeted in



**Making assida:** Galitsky shows the women of Darfur how to use the cookstove.

Sudan, prompting the United Nations to pull its workers out of West Darfur the week prior. The Berkeley team "monitored the situation as closely as we could on a daily basis," says Gadgil, and only traveled by air since overland passage was dangerous. "We were not going there to prove our bravery!"

Back safely in their lab high above the campus, they have further refined the stove, making it strong enough for vigor-

ous stirring and able to withstand the wind. The Berkeley-Darfur stove is now four times more fuel-efficient and requires 75 percent less wood. Not only that, it can be assembled easily from flat kits and without access to electricity. In other words, they will soon be able to turn over production to the people of Darfur, bringing them jobs and income. The first 50 stoves produced were snapped up quickly. Plans are in motion to begin mass-producing the stoves, as at least 300,000 are needed. The researchers are working with two nonprof-



Photo courtesy of LBNL

**Lab partners:** Ashok Gadgil, senior staff scientist, and Christina Galitsky, principal research associate, work together in the Environmental Energy Technologies Division at Lawrence Berkeley National Laboratory.

its, Engineers without Borders and CHF International, to establish workshops in Sudan.

Gadgil, who is originally from Mumbai and came to Berkeley as an international graduate student to study physics, is drawn to projects that will improve life in developing countries. In the early 1990s, he designed a device that uses ultraviolet light to quickly, safely, and cheaply disinfect water of the viruses and bacteria that cause cholera, typhoid, dysentery and other deadly diseases. Now patented, and manufactured by Water Health International, the simple machine (called UV Waterworks) is used in Mexico, the Philippines, India, and Ghana.

More recently, he and Galitsky have been exploring ways to remove arsenic from well water in Bangladesh, using ash. "Christie is not only an outstanding thinker who applies her mind to solving real-world problems," says Gadgil, "she's a risk taker in the best sense of the word."

Galitsky clearly enjoys challenges and says her graduate training in chemical engineering gave her the skills for problem-solving. "I wanted to work on problems that had a direct, profound impact on people's lives," she says, "things like clean water or clean air, things we need just to live."

— Lisa Harrington

## Between the Barrio and Seminar Room

# Alvaro Huerta, Doctoral Student

“Hot and terrible” is how Alvaro Huerta recalls those summer weekends, as a teen, soliciting work with his father on Los Angeles County’s westernmost edge. Huerta’s parents hoped to impress on a slightly built and “lazy” 13 year-old what it’s like to do hard physical labor for a living. Conceivably, they thought, it might nudge him toward choices that they themselves, as immigrants from Michoacán, Mexico to East L.A. via Tijuana, had not had.

Their home-grown “Take Your Child to Work Day” worked: Huerta calls those sweaty weed-pulling, hole-digging, and lawn-tending sessions his “first push” into an academic world that no one in his family before him, or any of his scores of cousins, had ever entered. Fear of hard physical labor may have propelled Huerta out of the barrio. Yet he has never really left his roots behind.

“An L.A. sensibility with scholar-activist thoughts” is how fellow Ph.D. student Ricardo Huerta (no relation) has described him. “When he came to lecture in our class, it was like a George Lopez comedy act crossed with a César Chávez motivational speech.”

By Alvaro’s telling, luck as much as talent landed him at UCLA in 1985. “I want to break the American myth that if you

work hard, you’ll automatically succeed,” he’s quick to say. “What does that idea say about my cousins” who never made it to college, he asks, or “my mother who worked hard for 40 years as a domestic worker and was never able to afford to buy her own home?”

After earning his B.A. in history, Huerta devoted nearly two decades to community-organizing campaigns — supporting immigrants who faced deportation, indigenous people in Chiapas, an impoverished Latino neighborhood fighting the proposed construction of a 550-megawatt power plant in its midst, and Mexican immigrants who do the bulk of the paid landscape gardening and yard maintenance in L.A..

He got involved with the latter in the mid 1990s, when gardeners faced a proposed citywide ban with stiff penalties — misdemeanor charges, up to six months in jail, and a \$1,000 fine — on the use of leaf blowers.

Initially “I didn’t know what a leaf blower was,” Huerta recalls. “We didn’t have gardeners in the projects.” To help these workers articulate their concerns, Huerta, along with fellow Chicano/a activists (including his wife, Antonia), co-founded the Association of Latin American Gardeners of Los Angeles, the first organization of Latino gardeners in the U.S.



The South Gate neighborhood’s campaign to block a proposed power plant was featured in the L.A. Times’ Jan. 10, 2001 edition. The coverage “gave our campaign a lot of momentum to win,” says Alvaro Huerta (bottom left), who led the collective and ultimately successful effort to halt the project.



Graduate student Alvaro Huerta in the East L.A. neighborhood where he grew up. The mural is titled “Ghosts of the Barrio.”

After many years of community work, Huerta returned to UCLA to earn an M.A. in urban planning. Now a doctoral student in City and Regional Planning at Berkeley with both academic and activist accomplishments crowding his CV, Huerta received the first-ever Thomas I. Yamashita Prize. Named for a UC Berkeley undergrad whose studies were cut short when he was sent to a WWII internment camp for Japanese Americans, the \$2,500 award will be given annually to a scholar activist by the Institute for the Study of Social Change. The prize honors individuals who are “engaged in social change, not just studying it,” said Yamashita’s son Robert, a Cal State San Marcos teacher and UC Berkeley graduate.

Professor Judith Innes — Huerta’s dissertation adviser and his current intellectual influence — pictures him, one day, as “a leading academic” in the city-planning field. Under her direction, he’s doing doctoral research on how Mexican immigrant gardeners use social networks to survive and sometimes thrive.

A self-taught writer, he also seeks to illuminate the Latino experience by penning short stories based on his childhood. Huerta says he writes fiction with his 8-year-old son, Joaquin, in mind — so that should he ever aspire to be a writer, “it wouldn’t feel far fetched.”

“My wife originally encouraged me to pursue an academic career and write short stories. Many things we do are for Joaquin — so he can see that there are options, ones that we didn’t have growing up.”

— Cathy Cockrell, UC Berkeley NewsCenter



Alvaro Huerta accepts the Thomas I. Yamashita Prize, accompanied by his wife, Antonia Montes, and son, Joaquin.

## Public Health Hero is a Champion of Teens

# Dr. Barbara Staggers, '76, M.P.H. '80



Photo: Gery Turchin for Children's Hospital Oakland

**Doctor Mom:** William, the eldest of her three children, visits Dr. Barbara Staggers at work.

A summer job during high school proved to be life-changing for Barbara Staggers. The high achieving teen who aspired to be a ballerina or maybe a veterinarian was working for a recreation program for inner-city kids. “My job was to teach swimming and gymnastics so at the end of the day they’d be too tired to get into trouble,” she recalls. Among her youngsters was a quiet, beautiful 14-year old girl — until a man came to take her away. “He looked like the classic pimp from the movies and said he needed her to work,” recounts Staggers, who went to her supervisor. But when they phoned the girl’s mother, she said, “Let her go. We need the money.”

“I was 18 then and I’m 53 now, but I can still close my eyes and see that young lady’s face,” says Staggers. “I don’t know what happened to her. She just disappeared off the face of the Earth, but I’ll never forget her.”

And she hasn’t. As chief of the division of Adolescent Medicine at Children’s Hospital and Research Center in Oakland, Staggers has devoted her career to helping teens at risk. Many of the kids who come to her for a “check-up” (a term that can mean almost anything) are looking for love, food and shelter, and a place to be safe. Some of them don’t expect to reach adulthood, and some won’t. Others are more resilient and will rise above their circumstances. All of them, she says, need to be parented and loved unconditionally. “There has to be one person in their life that, come hell or high water, is going to be there for them.”

Growing up, Staggers and her siblings certainly had that, and more. “When I look back on my life, the reason I was able to do the things I

did and take the challenges I took was because my parents always told us we were respected, we were valued, we were loved,” says Staggers. Her mother had attended college at age 16, and her father was the first African-American surgical sub-specialist trained by the United States Navy. In later years, he served as president of the California Medical Association. From him, she learned that a physician can also be a social worker, a political advocate, and an educator.

With a desire to serve the most underserved, Staggers came to Berkeley to study psychology. Here she met Professor Reginald L. Jones, a pioneer in the field of Black Psychology, who became a mentor and guided her toward medical school at UCSF. After completing her M.D., Staggers returned to Berkeley for a Master of Public Health, and then went back to UCSF to complete the Adolescent Medicine Fellowship Program.

She believes strongly that adolescent health-care requires a public health perspective. “To me, it’s about the things that kill teenagers, not traditional medicine,” Staggers explains, noting that automobile accidents, homicides, and suicides account for 65 percent of adolescent deaths.

To promote prevention, Staggers persuaded Children’s Hospital to establish school-based clinics at McClymonds and Castlemont high schools in Oakland. There, teens can find a caring staff and talk openly about issues with eating disorders, sexuality, drugs, and alcohol. Staggers helps them learn how to make good decisions, “so they don’t do something that they’ll pay for with the rest of their lives.”

She and a colleague also developed a three-year internship called Faces for the Future to encourage teens to stay in school and go on to college. A “pipeline program,” it partners with local medical schools to introduce minority high school students to the health professions.

Recognized nationally for her work, her Berkeley honors include the Peter E. Haas Public Service Award (2004), the School of Public Health Alumna of the Year (2006), and, this spring, the Regional Public Health Hero Award (2008).

— Lisa Harrington

## Protecting a National Treasure

# G. Wayne Clough, Ph.D. '69

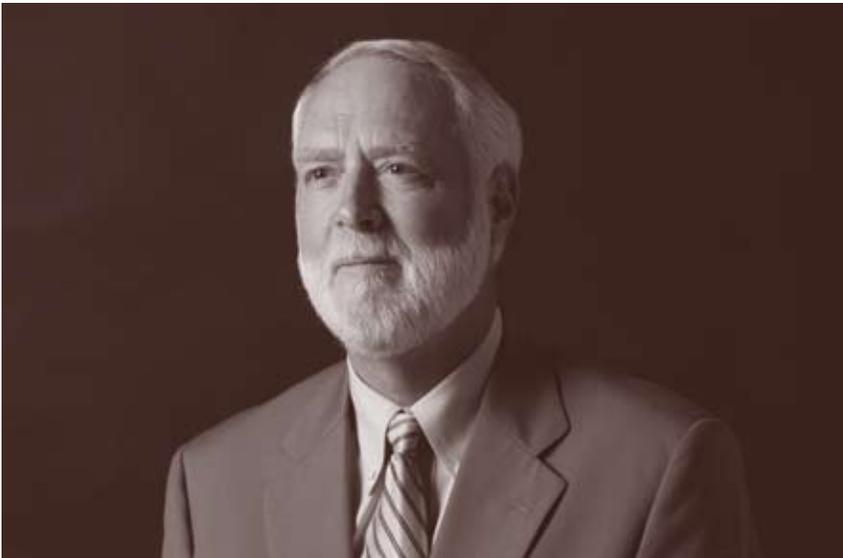


Photo courtesy of the Georgia Institute of Technology

12th Secretary of the Smithsonian: G. Wayne Clough

On Friday afternoon, March 14, as Wayne Clough (pronounced “cluff”) traveled on a train bound for New York, his cell phone rang. On the other end was Roger Sant, Regents Chairman of the Smithsonian Institution, with important news. The museum’s board, who had interviewed Clough earlier that day, had unanimously elected him the 12th Secretary of the Smithsonian. Clough clearly hadn’t expected to receive word so soon: “I was in a car with a gaggle of young girls. There was lots of noise, and Roger Sant calls and says, ‘This is Roger.’ I asked, ‘Who?’” recalled Clough, who added, “I was surprised — and gratified.”

At the news conference held in the Smithsonian’s Castle the next day, Clough said his appointment “comes with an enormous responsibility. This is a treasure of our country, and it needs to move forward.” Indeed, steering the Smithsonian in the best of times is a formidable challenge, and even more so now. The institution sits in need of an estimated \$2.5 billion to restore leaky structures that endanger its collections.

Often referred to as “the nation’s attic,” the Smithsonian is the largest museum complex in the world, with 19 museums and galleries, the National Zoological Park, and nine research centers. A repository of American history, it houses everything from moon rocks to the Hope Diamond, the original Star-Spangled Banner, the Wright Flyer, space capsules, and over 137 million artifacts, works of art, and scientific specimens. Last year alone, more than 24 million people from around the world visited the museums and zoo, and there were nearly 183 million virtual visits via [www.smithsonian.org](http://www.smithsonian.org).

Clough’s credentials to protect and serve the Smithsonian are impressive. As president of Georgia Tech since 1994, he’s set records as a fundraiser, boosted student enrollment, increased support for research, and established several campuses abroad, all of which have transformed the Atlanta school into a Top 10 public university. For his teaching and research, he has received nine national awards from the American Society of Civil Engineers and was twice-awarded civil engineering’s Norman Medal — in 1992 and 1996. He currently serves on the President’s Council of Advisors on Science and Technology and on the National Science Board.

Clough is the second Smithsonian Secretary from Berkeley. Ira Michael Heyman, a former law professor and chancellor, served from 1994 to 1999 and is credited with extending the museum’s reach far beyond the Beltway by, among other things, launching the first website and initiating traveling exhibits.



Photo courtesy of the Smithsonian

The Smithsonian Castle

He also oversaw the groundbreaking for the National Museum of the American Indian.

“I know the Smithsonian, for many people in their minds, is about the past,” said Clough. “But it is not. It is about America’s future....we need to reinvigorate the excitement about the Smithsonian.”

— Lisa Harrington

## Civil Rights Pioneer, Federal Judge, Biopic Subject, and Alumnus of the Year

# Thelton Henderson, '55, J.D. '62

Now an esteemed and controversial federal judge, Thelton Henderson came to Cal from Los Angeles on a football scholarship. The law was not on his mind. Even academics were not necessarily in the forefront. He was a standout on the gridiron and the basketball court, encouraged to attend Berkeley by his football coach and his counselor at Jefferson High, both UC alumni. "All I knew about Cal was that they had a good football team in those days," Henderson has reminisced. "I had not the foggiest idea that it was an excellent academic institution."

Circumstances alter plans. A leg injury suffered during a game scotched his ambition of becoming a professional athlete. He majored in political science, graduated in 1955, and went on to law school at Boalt, with only one other African American in his class. He received his law degree in 1962.

Race had been a factor, but not a major focus in his life. He had experienced first-hand discrimination as a student, when some apartment owners wouldn't rent to him. Henderson has said that Berkeley "is known as the liberal bastion now, but it wasn't all that liberal then, in terms of housing." He would see worse, and soon. His Boalt graduation wasn't long over when the Justice Department's civil rights division hired him and sent him to observe the administration of justice in the Deep South. In the early '60s, as the Civil Rights Movement simmered to a boil, it wasn't a pretty sight, nor was it safe. But it left strong impressions. He saw the law perverted by undisguised racists on the bench whose sole purpose was to preserve Jim Crow policies and segregation, and he saw other judges, especially on the Federal Fifth Circuit, who despite their own Southern roots upheld the law and ruled fairly.

Returning to the Bay Area, Henderson opened a practice in East Palo Alto, which grew popular, and began a flourishing relationship with the law school at nearby Stanford University. Stanford hired him as assistant dean of the law school, where he taught and helped increase minority enrollment for eight years (through that school's first minority recruiting program). He returned to private practice in 1977, as co-founder of a law firm in San Francisco. President Jimmy Carter appointed Henderson to the federal bench, the U.S. District of Northern California, in 1980. He became Chief Judge in 1990, the first African American to

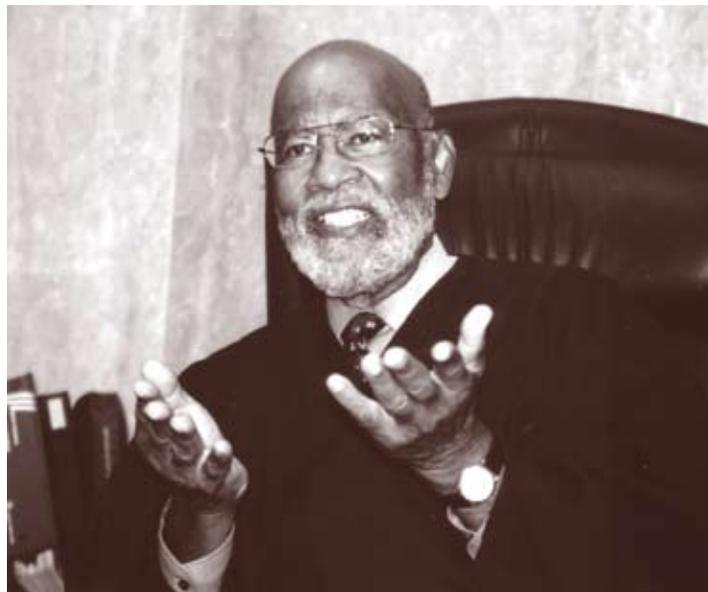


Photo: Abby Ginzberg/www.souljustice.org

hold that position, and in 1998 became Senior U.S. District Judge. The district covers 15 Northern California counties, hearing cases in its courtrooms in Eureka, Oakland, San Jose, and its headquarters in San Francisco.

In his judicial roles, Henderson has carved a distinct path, gaining ever more respect on the way — along with clusters of vehement critics.

His legal decisions have covered a wide, sometimes explosive, waterfront, protecting, among others, dolphins threatened by tuna nets, prison inmates subjected to substandard medical care, and Vietnam veterans exposed to Agent Orange. In 1997, he struck down Proposition 209, the ballot measure that banned affirmative action in public contracts, hiring, and college admissions in California. Subsequent calls for his impeachment came to naught, but his decision was overturned in 1998 by an appeals court.

A documentary movie on his life — *Soul of Justice: Thelton Henderson's American Journey* — by Albany filmmaker Abby Ginzberg, was released in late 2005.

Henderson has received many honors, the most recent of which is selection as 2008 Alumnus of the Year by the California Alumni Association. — *Dick Cortén*

The alumni association this year is recognizing what may be a record number of Berkeley alumni with graduate degrees. They include, besides Henderson: leading Parkinson's researcher **Caroline Tanner** Ph.D. '98; geologist/ecologist and advisor to U.S. presidents **Lee Merriam Talbot** '52, M.A. '63, Ph.D. '63; radiologist and MRI pioneer **Lawrence Crooks** '71, M.S. '73, Ph.D. '79 (Excellence in Achievement Awards); **Anthony Smith** '92, M.A. '93, Ph.D. '02, deputy superintendent for instruction, innovation, and social justice, San Francisco Unified School District (Mark Bingham Award); and **Richard Bahme** '40, M.S. '47, Ph.D. '49 (Excellence in Service Award).

# ALUMNI & FRIENDS



In fall 2007, Graduate Division launched a new series of events for graduate alumni and friends on campus and around the country and the world.

## Meet the Dean

The inaugural “Meet the Dean” events took place in Shanghai and Beijing last November.

Dean Szeri was welcomed in Shanghai on November 21, 2007, by David Nieh (M. Arch.’89) of Shui On Land, along with Professor John Jamieson (B.A.’59, M.A.’64), the director of California House, and Professor Binglin Tan, President of the Berkeley Club of Shanghai, who was a Research Fellow at Berkeley, 1982–85. The event was sponsored by Shui On Land. It was held at Shui On’s new Silicon-Valley inspired project, called the Knowledge and Innovation Community, near Fudan University.

The Beijing event was hosted by the Berkeley Club of Beijing on November 23, the day after Thanksgiving. A dinner at the Kerry Centre Hotel in downtown Beijing was attended by graduate and undergraduate alumni spanning classes from 1951 to 2007.

## Upcoming events:

Friday, May 2, 2008 – **Chicago** (for details and to register, please visit: <http://www.grad.berkeley.edu/rsvp/email/chicago.shtml>)

Wednesday, May 21, 2008 – **Washington, D.C.** (for details and to register, please visit: <http://www.grad.berkeley.edu/rsvp/email/washington.shtml>)

**1.** Chancellor Birgeneau (right) welcomes (from the left) Jack Lloyd ’70, Dr. Andrew Sessler, and Lynn Lloyd ’59 at the Graduate Fellowships Luncheon in University House, November 28, 2007 (Peg Skorpinski photo). **2.** Berkeley Alumni Club of Beijing member Andy Lee ’97 (center), with his wife Polly Chow, and Matt Lurie ’99 at a dinner with Graduate Dean Andrew J. Szeri on November 23, 2007. **3.** Professor William A. Lester, Jr., Chair of the Hitchcock Lectureship Committee (left), Professor Emeritus John Heilbron ’55, M.A. ’58, Ph.D. ’64, and Graduate Dean Andrew J. Szeri at the Graduate Council Lecture, November 7, 2007 (Ben Ailes photo). **4.** Dean Szeri (left) with Yun-Kun Wang M.A. ’83 at the Berkeley Alumni Club of Beijing dinner, November 23, 2007.

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All gifts from campus donors will be matched dollar for dollar by the Chancellor's Challenge for Student Support through June 30, 2012. For more details on this program, please visit the program website (<http://ourpromise.berkeley.edu/>).

If you wish to support students in any discipline on campus, please consider making a gift to the Graduate Dean's Fellowship Fund.

For further information, please contact Graduate Division's Development Office at 510.642.8614 or [gradsupport@berkeley.edu](mailto:gradsupport@berkeley.edu).

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## The Graduate

University of California, Berkeley  
Graduate Division  
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High-flying bird's-eye view from directly over the Campanile, via Google Earth (note the shadow touching Birge Hall), with its esplanade of plane trees. Along the left edge are the Library and South Hall. At bottom right are Faculty Glade and the Faculty Club.

## Find where you are — or want to be — anywhere on the planet

Have you used, or simply played with, **Google Earth** yet? It's not far from the stuff of dreams, where you can just fly or teleport to places you want to see and learn about, in this case on your computer, with detailed 3D images. You can zoom in or out on street maps, satellite photos, or a hybrid of the two. In some regions, the Bay Area among them, by simply pushing a little humanoid cursor around, you can “walk” or “drive” and preview your destination at street level, complete with vehicles and pedestrians (thanks in part to contributed photographs from viewers).

The primary Berkeley connection here is **John Hanke**, who likes games and doesn't mind taking chances. That's clear enough from his career so far.

He earned his MBA at Cal in 1996, by which time he had already helped start Archetype Interactive with classmate **Steve Sellers**. After that was acquired by a larger company, they went on to found Big Fish, which also was purchased by a larger fish.

In 2001, with, among others, two different Haas classmates (**Ed Ruben** and **Noah Doyle**), he co-founded Keyhole, whose flagship product, Earth Viewer, was renamed Google Earth in 2005 after Google tucked Keyhole into its fold. In version 4.2 of the software, released in August 2007, a sky tool was added for viewing astronomical images. There are several levels available, the most basic of which is free.