

# UCSF

MAGAZINE

Spring 2013


## NOBEL FOR STEM CELL

Prize for Yamanaka  
rocks program  
to new heights



STUDENTS WHO SERVE • POWER OF PRECISION MEDICINE • CAN WELLNESS CURE?



A photograph of the Sandler Neurosciences Center at UCSF Mission Bay. The building is a modern, multi-story structure with a mix of light-colored horizontal panels and large glass windows. The name "Sandler Neurosciences Center" is visible on the building's facade. In the foreground, two people are sitting on a stone ledge, and another person is walking in the background. The scene is set in an outdoor plaza with young trees and a clear sky.

Sandler Neurosciences Center

# UCSF MAGAZINE SPRING 2013

Sandler Neurosciences  
Center, the latest building to  
open at UCSF Mission Bay





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A Nobel Prize for Shinya Yamanaka shoots UCSF's pioneering stem cell program higher than ever.

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This emerging field is harnessing the power of personal and cumulative health data to improve care, reduce costs, and save lives.

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UCSF students have something special in their DNA: a deep desire to serve the community.

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A healthy lifestyle may be the new power drug, says research out of the Helen Diller Family Comprehensive Cancer Center.

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**N**oah Smirnoff, my doctor growing up, lived what he cared about – and he cared about patients. Sometimes he would see upwards of 90 patients a day. In a 2004 interview on his 100th birthday, Dr. Smirnoff expressed how he simply loved helping people feel better – noting, “I never turned anyone down regardless of their medical or financial situation...Poor people hurt just as much as rich people.”

A deep desire to serve runs through the entire UCSF community. It inspires Shinya Yamanaka, winner of a 2012 Nobel Prize, who stated his remarkable stem cell discovery was “for patients.” It’s embodied by top transplant surgeon Nancy Ascher and her incredible team, some of whom have donated their organs to loved ones. It motivates the outstanding students who devote their talent, time, and energy to the underserved. And it’s a core belief of our alumni, who recently rallied around the theme at Alumni Weekend 2013.

Service is among the shared values that make us OneUCSF, where the best research, education, and patient care converge in a singular focus on helping people feel better. You’ll hear me talk more about this focus as we drive ahead with initiatives like precision medicine, an emerging field that is fast becoming one of the most important health care concepts of our time. Be sure to read our special section on the subject in this issue and check back in fall 2013 for a full report on our latest work to advance the precision medicine revolution – the first OME (“öm”) Precision Medicine Summit, held on May 2 and 3, 2013, at UCSF Mission Bay.

*Susan Desmond-Hellmann, MD, MPH  
Chancellor  
Arthur and Toni Rembe Rock Distinguished Professor*

## UCSF MAGAZINE

FOR ALUMNI AND FRIENDS

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# DIALOGUE

## TWEETS AND POSTS FROM THE UCSF UNIVERSE

In honor of UCSF Mission Bay's 10-year anniversary, UCSF asked the community, "What do you hope science accomplishes in the NEXT 10 years?"

**@UCSFScience:** Ilyse Gerber's #science hopes for next 10 yrs? "New ways to lessen effects for those suffering from #Alzheimer's disease." #Next10Science

**@UCSFScience:** Tom Sitt's #science hopes for next 10 yrs? #Lung #transplants with no rejection issues. #Next10Science #medicine

**@DanielleCNN:** @UCSFScience i'd like to see scientific advancements in diagnosing and treating alzheimer's disease. #Next10Science

**@scooperpr:** @UCSFScience I'm glad we're in the same club. My #Next10Science hope is larger leaps in attacking difficult to treat tumors #oncology

**@Liljegren\_M:** @UCSFScience @UCSF @UCSFmac :) Looking forward to existing and future collaborations. UCSF inspired me to go into research, thank you!

**@ladyantebellum:** Spending time w. the kids & staff of @UCSF\_BCH was more than humbling. Share the great day with us! #Webisode WATCH: [bit.ly/ucsf-ladya](http://bit.ly/ucsf-ladya)

My thanks to Dr. Hobart Harris, Dr. John Maa, Dr. Mitch Berger and the dedicated staff at UCSF, who were kind enough to host me for grand rounds. It was an excellent learning experience. Appreciated the chance to speak with these world-class physicians about the need to foster a culture of safety in both aviation and medicine.

—Captain C.B. Sully Sullenberger

**@loochoo:** Covered @PIH founder Paul Farmer's #globalhealth lecture @UCSF last week, and you woulda thought Bono was on campus! <http://bit.ly/XQnWUy>

**@KQEDnews:** Can a checklist help predict whether a medical patient will survive over the next 10 years? <http://ow.ly/jhgN8> @UCSF

**@GWSMHS:** Check out how @UCSF is adapting Angry Birds to teach med students <http://ow.ly/fP881>

**@NancyPelosi:** Here at @UCSF it's clear we must #StoptheSequester – a step back for science, innovation & #SF [pic.twitter.com/I2Nqw1473P](http://pic.twitter.com/I2Nqw1473P)

**@CostofCare:** Great work! @ChrisMoriates gave GME Grand Rounds on "striving to provide the best care at lower costs" at @UCSF yesterday

### JOIN THE DIALOGUE

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## INNOVATION CORPS

If Hippocrates were alive today, he might have tweeted “First do no harm” from Dreamforce 2012, the Salesforce.com conference celebrating innovation. Headlining the “UCSF Unusual Thinkers” track, Chancellor Susan Desmond-Hellmann, MD, MPH, emphasized the critical role of social media in promoting clinical trials and providing patients with a sense of community.

She was followed by other forward-thinking faculty who are redefining their fields through technology. Among them was neurosurgeon and resident alumnus Mitch Berger, MD, Kathleen M. Plant Distinguished Professor,

who described how his brain mapping technology helps surgeons find safe routes around motor, language, and sensory functions. Pharmaceutical scientist Thomas Ferrin, PhD '86, demo'ed his 3-D models of how drugs interact with diseases like HIV. Orthopedic surgeon Anthony Luke, MD, showed his RunSafe smartphone app for helping medical professionals working at marathons to instantly access each runner's health history – invaluable in the case of an unconscious runner. And endocrinology fellow Aaron Neinstein, MD, previewed a diabetes device that rapidly collects and analyzes insulin and glucose levels.

## VENTURE CAPITAL FOR BOLD BASIC SCIENCE

All too often young scientists are encouraged to stay well inside the scientific lines in order to appear a safe bet to traditional funders. Wary of the career threats posed by stepping outside the norm, most budding researchers shy away from posing the bold questions that may lead to revolutionary advances.

With help from the Program in Breakthrough Biomedical Research (PBBR), UCSF scientists are toppling these walls to transformative change. Celebrating its

15th anniversary this year, PBBR is the only program of its kind, providing UCSF's top young investigators with start-up money to explore new concepts that would hardly get a second look from traditional funders like the National Institutes of Health (NIH).

In a departure from those funders, who favor conservative proposals led by well-established investigators with demonstrated success, the PBBR faculty selection committee chooses only start-up ideas that challenge conventional wisdom but have

potential for major impact. PBBR grant applicants must present their ideas in just two short pages, and they receive a decision within 30 days.

“Venturing into the hypothalamus was considered by some to be scientific suicide,” says Holly Ingraham, PhD (pictured at left), who received a PBBR grant to test some uncharted waters: whether behavior can change dramatically by eliminating just one gene from one hypothalamic region. With the boost from her grant, Ingraham, Herzstein Distinguished Investigator in Molecular Physiology, went on to publish extensively in this area, present on the topic at a National Society of Neuroscience symposium, and earn a major R01 grant from the NIH, where it was suggested that her results were potentially transformative.

Funded entirely by private philanthropy, PBBR represents just 0.5% of UCSF's overall annual research budget — but it has had remarkable leverage. The program will announce the extent of that leverage during its 15th anniversary event, open to the entire campus community, on May 23 at 3:30 p.m. in UCSF Mission Bay's Genentech Hall.





## FREE ONLINE CLASSES MAKE WAVES



UCSF is educating thousands of students from across the globe through its first – and free – massive open online courses.

Some call it a seismic shift, others a tsunami. Whatever the term, online learning has become a veritable force in the field of education, and UCSF is a key part of its power. In January, the university launched its first online classes through Coursera, a nascent company that partners with top universities, such as Stanford, Princeton, Johns Hopkins, and Duke, to offer free online courses, open to anyone.

In the first 24 hours after UCSF announced its classes, more than 2,500 students signed up. Eventually, more than 100,000 students from around the world – Spain, Australia, Russia, Ghana, Sudan, and Brazil, among many other countries – registered for the inaugural offerings, including Clinical Problem Solving; Contraception: Choices, Culture, and Consequences; and Nutrition for Health Promotion and Disease Prevention. Their popularity signals what could be a sea change in the university's ability to reach a wide audience with its health science curriculum.

Over time, UCSF expects its online courses to grow in both breadth and volume, according to Joseph Castro, PhD, vice chancellor for Student Academic Affairs. "UCSF offers world-class courses in health and science, but we enroll fewer than 3,000 students in our degree programs each year. As a public university committed to reaching underserved populations throughout the world, it makes perfect sense on many levels to offer our classes online."



“There’s a really great pharmacopoeia in snake venom.”

Pain expert and neuroscientist David Julius, PhD, on how studying small molecules in snake venom is helping shed light on pain mechanisms, quoted on **Discovery News**.

## SCIENCE SOCKS ONE TO CAVITIES

Can a sugar-derived substance actually prevent cavities? Yes, suggests research by pediatric dentist Ling Zhan, DDS, PhD, and postdoctoral alumna (pictured below). The UCSF assistant professor is an emerging leader in the use of xylitol, a naturally occurring sugar alcohol, to prevent tooth decay in children. Research shows that the sweet-tasting substance, which is extracted from the fibers of fruits, vegetables, and other vegetation, has the potential to prevent cavities. Commercially used as a sugar substitute, xylitol appears to diminish the negative dental effects of oral bacteria. In a recent study, Zhan and her team found that infants whose teeth and gums were swabbed daily with xylitol had nearly eight times fewer cavities after one year than those who didn't get the xylitol swab. She's now working to shed light on the potential benefits of xylitol in 5- to 9-year-old kids.





## MAGNETIC NURSES



The Medical Center team, led by Chief Nursing Officer Sheila Antrum (center), prepares for a video shoot to inspire, motivate, and prep the nursing staff for a five-day site visit by Magnet appraisers.

UCSF recently achieved national “Magnet” recognition from the American Nurses Credentialing Center (ANCC), signifying that UCSF Medical Center and Benioff Children’s Hospital offer outstanding nursing practice and a rewarding work environment for nurses – and have notably improved patient care, safety, and satisfaction.

As of early 2013, less than 7 percent of the 5,724 hospitals registered with the ANCC had achieved Magnet status.

“At 2 in the morning in the hospital, you want to know you have a nursing staff that feels completely capable of making the best possible clinical decisions,” says Karen Drenkard, RN, PhD, ANCC executive director and former chief nursing officer at a Magnet hospital. “Magnet recognition helps give you that assurance, because it is a very high, evidence-based bar.”

So high, in fact, that UCSF’s first Magnet application, in 2005, was denied.

“That was a watershed moment,” says Medical Center and Benioff Children’s Hospital CEO Mark Laret. “So when we hired Sheila Antrum to become chief nursing officer in 2007, we talked about what it would take to achieve Magnet status.”

By then the Magnet process had evolved. “Before it was more around anecdotal stories and aggregate data to meet the criteria, but... now you have to demonstrate – by unit and top to bottom – that you’re meeting nursing-sensitive benchmarks of quality and satisfaction,” says Antrum, RN, MSHA.

“We enhanced the structures and processes that we had in place to demonstrate our outcomes,” says Jody Mechanic, RN, MS, director of professional nursing practice and the Magnet program.

Antrum believes the collection of baseline data in and of itself helped demonstrate one value of Magnet: heightened awareness of the need for evidence throughout the hospital, and especially among an already outstanding group of nurses who may not have understood just how extraordinary they were.

“At UCSF, we don’t rest on our laurels and can even be a little self-flagellating,” says Daphne Stannard, RN, PhD ’97, chief nurse researcher for the medical center. “Experts tend to not think of themselves as experts – how can I be an expert if I’m always learning? Our nursing staff epitomizes that, and some didn’t feel we were Magnet-worthy.”

Working with Stannard, medical center and hospital staff, and faculty from the UCSF School of Nursing, Antrum and Mechanic led a team that gathered the baseline data, identified gaps, and planned and implemented improvements. They compiled a new, 3,000-page application that painstakingly documented how the medical center and hospital, ambulatory care services, and home care were meeting Magnet benchmarks – and then the entire enterprise underwent a five-day site visit by Magnet appraisers.

It was a demanding and, at times, exhausting journey that helped the staff of both the hospital and medical center better understand nursing’s contribution to outstanding patient care. “By becoming recognized as a Magnet facility, nurses realize the value of what they do on a daily basis,” says Stannard. “And that goes a long way toward underscoring our role as a center of nursing excellence...I feel it when I walk through the halls. There’s a positive energy throughout the organization.”

*Read more about the Magnet journey at [scienceofcaring.ucsf.edu](http://scienceofcaring.ucsf.edu).*



## MY FAVORITE IPAD APP

### Songza

“I can choose from streaming playlists to fit a state of mind (angst-y, cheerful, heartbroken), an activity (getting ready to go out, singing in the shower, studying), or by genre. It has a wide variety of music, so I can switch between new and obscure songs and ones I’ve memorized.”



**Arielle Bivas**  
Nursing student

### Notability

“Nerdy, I know. The notes I create on it look as if I’m writing on paper. Another benefit is that it keeps all my notes together and I don’t need to print out any slides for class. That keeps my backpack from being super heavy, and makes running to class when I’m late that much easier (haha).”



**RJ Delmonte**  
Pharmacy student

### GoodReader

“I can view, annotate, or highlight sections from PDF articles. With the addition of SugarSync (another app), I can sync the folders where my PDF files are stored between my laptop and iPad. This is highly useful for reading on the go without lugging all those paper printouts or my outdated laptop around.”



**Josh Bagley**  
Neurosciences doctoral student

## IT’S ALL IN THE WRIST

A new procedure, radial percutaneous coronary intervention, is giving a complete makeover to the way UCSF cardiologists care for clogged coronary arteries. Though considered standard procedure in Norway, Japan, and Canada, radial catheterization is used only 8 percent of the time in the US.

“The data was highly suggestive that it was beneficial,” says interventional cardiologist Andrew Boyle, MBBS, PhD. “So now we perform the procedure in more than 70 percent of our patients.”

With radial catheterization, physicians insert a small tube through a wrist artery rather than the traditional route – a leg femoral artery – helping them look more closely at coronary arteries and measure the pressure in the patient’s heart to discern the extent of damage or blockages. If blockage exists, doctors insert balloons for angioplasty or stents to ensure blood flow.

“The traditional femoral procedure requires patients to lie flat from three to eight hours afterward,” according to Boyle. “Ninety-nine percent of the time these patients stay overnight at the hospital.” With a hospital removed from the equation, radial catheterization is up to 30 percent cheaper than the traditional method.

Safety is the most compelling reason to use the new procedure, which reduces the chance of complications by two-thirds. “The radial approach causes less bleeding and damage to the artery you’re going in,” says Boyle. “Bleeding after the femoral procedure is sometimes so deep that it can go unnoticed, especially in obese patients, and that can be lethal.”

Despite its advantages, the procedure is performed far too infrequently in the US. “But that’s changing,” says Boyle. “When our fellows go into practice, they end up training others to do it.”

“Even small, gradual reductions in sodium intake would result in substantial mortality benefits.”

UCSF mathematician Pam Coxson, PhD, in “Health Today” from **NBC News**, on her study showing that hundreds of thousands of lives could be saved over 10 years if Americans ate less salt.





## TRIAL BUSTER

Lisa Bero, PhD, a mild-mannered professor of clinical pharmacology, has spent her career policing the way we conduct research on drugs and clinical interventions.

**You've just published a paper about industry bias in clinical trials that has received a lot of attention. Can you tell me about it?**

**Bero:** Andreas Lundh from the Danish Cochrane Center, Joel Lexchin from York University in Toronto, and I published a systematic review of studies that looked at the association of industry funding and research outcomes. We found that if a study was pharmaceutical-industry sponsored, it was 24 percent more likely to have findings that favored the sponsor's product than if it was sponsored by anybody else.

**This is part of your work with the US Cochrane Center at UCSF. What does the center do and what is your involvement there?**

**Bero:** I am founder and director of the center. It's an international nonprofit that produces systematic reviews of health care interventions and clinical trials to promote evidence-based research and practice. Systematic reviews bring all the evidence on a topic together, assess the quality, and then answer a question. I'm really interested in methods – how we better use the evidence to make decisions – so I love the work.

**How have the studies you analyzed been biased?**

**Bero:** There are a lot of ways to bias a study. I think the best example is unfair comparisons. Here's a classic case: one industry-sponsored study compared antihistamines. The authors concluded that their antihistamine caused fewer side effects, the biggest being sleepiness. While they gave people a normal dose of their own drug, the dose they were using of the comparison antihistamine was nearly four times what you would normally give somebody. The people on the comparison drug were sleeping all the time.

**What's the second most common form of bias?**

**Bero:** Another common example is what's called

“selective outcome reporting.” In one of our reviews, we looked at all drugs approved over a two-year period. We found that 75 percent of the trials submitted to the FDA [Food and Drug Administration] were published. That means 25 percent weren't. And, of those that were published, not all the data were published. Of course the missing outcomes tend to be the ones that did not show a positive effect of the drug.

**Is every part of a study public information?**

**Bero:** The FDA releases what's called their medical and statistical officer reports. It's not absolutely everything, but it's more than what you get in the published data.

**Why aren't journal editors picking up on the biases you found?**

**Bero:** Journals have a lot of power. Some journals, like the Lancet, are now demanding the protocol of the trial, so if they studied five outcomes, they can check to see that they reported on all of them. The problem is there are just way too many journals out there of variable quality and resources. Some don't even have paid editors, so a lot slips by.

**What are the repercussions of your findings?**

**Bero:** Well, I think patients would be shocked if they knew how incomplete the information is that most doctors have about drugs. We've analyzed some of the meetings doctors have with drug reps. The reps basically push a drug by focusing on a certain study out of context – you need the whole story.

**How can patients and doctors ensure they're making informed choices?**

**Bero:** First, check the acknowledgements section or the funding source section for conflicts of interest. Second, don't look at a study out of context. People need to know that if you're talking about the latest randomized controlled



Lisa Bero also heads the World Health Organization Collaborating Center for Pharmaceutical Research and Science Policy.

trial covered in the Chronicle or the Times, that's only part of the picture. Go to the Cochrane Center's website, [cochrane.org](http://cochrane.org). We rate studies and have consumer summaries that are available for free. That'll give you an idea whether there are 10 studies or no studies on a topic.

**And third?**

**Bero:** When reading a study, ask yourself, “Is the population relevant to me?” For instance, there is a Cochrane review on whether women with breast cancer should have radiation after chemotherapy. For older women it was actually more harmful to add radiation because it hasn't been shown to extend older women's lives and there were some adverse cardiovascular events. Yet radiation has been shown to extend the lives of younger women.

**While we all work on reading with a more critical eye, is there any movement toward making bias more transparent?**

**Bero:** My challenge is to expose bias to the public wherever I can. The more people become aware of bias, the more political pressure we can apply to the FDA to mandate that more data be freely available. There are also discussions about whether patients should participate in clinical trials only if the sponsors agree to make the results publicly available. This way, the data gathered in clinical trials will become a public good and not proprietary information.



## THE BIOTECH RUSH: BY THE NUMBERS

**90** Minimum number of biotech start-ups (including Genentech) spun off from UCSF discoveries

**38** Firms incubated at UCSF's Mission Bay campus

**33** Percent of biotech firms in the United States founded by UC scientists, according to a 2003 study

**1,757** Patents generated by UCSF between 1977 and 2009, making it the leading producer of biotech patents in the United States

**1** Rank in university research and development expenditures in life sciences over the last five years

**2** Rank in the country for medical school research and development expenditures

**17** Percent of total research and development spending in San Francisco disbursed by UCSF (4 percent across the nine-county Bay Area)

**\$202.2M** Dollars made by the UC system in 2011 from all inventions

**\$32.4M** Dollars generated from UCSF's inventions in 2011 – 16 percent of total UC income

**\$3B** Dollars UCSF will invest in its Mission Bay campus

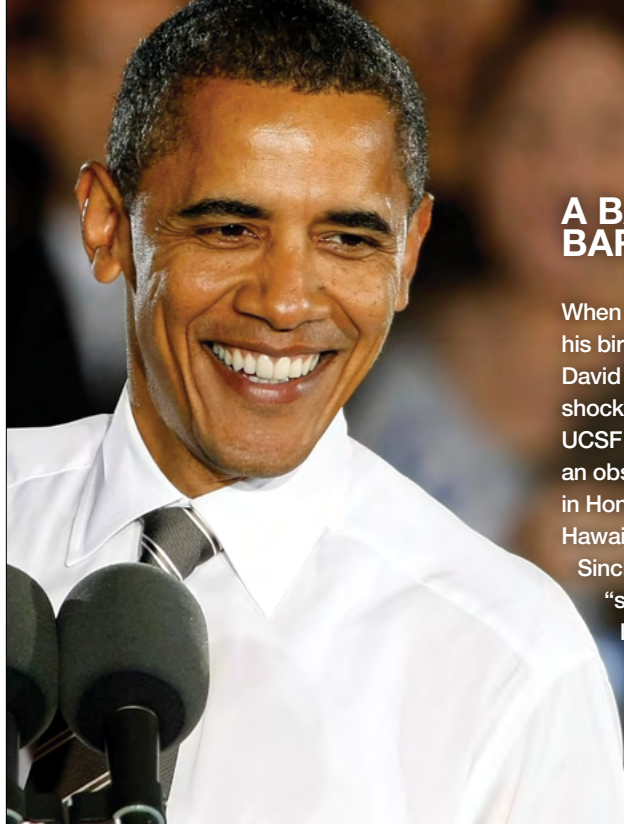
“There is no doubt we have to be careful about the influence of unending streams of interference on our minds.”

Neurologist and fellowship alumnus Adam Gazzaley, MD, PhD, writing for **CNN** about how frequent interruptions from mobile technology devices are challenging our cognitive control system.



“This is a train going in the wrong direction.”

Dean Schillinger, MD, resident alumnus and UCSF professor, on how the explosion of diabetes in the United States is raising huge obstacles to controlling health care costs, quoted in the **Los Angeles Times**.



## A BABY NAMED BARACK

When President Barack Obama released his birth certificate in 2011, the family of David Sinclair, MD '54, received quite a shock: Sinclair's signature was on it. The UCSF alumnus, who died in 2003, had an obstetrics and gynecology practice in Honolulu and delivered babies all over Hawaii at the time Obama was born.

Sinclair's widow, Ivalee, recognized the “signature of attendant” as her husband's. “It is a great thrill and a great honor,” she said in an interview with CNN. “I had no idea. I was just overwhelmed with the news.”

## LAB OF THE FUTURE

The days of carrying brick-like *Gray's Anatomy* textbooks may be long gone, but not much more has changed over the years in how medical students learn anatomy – until now.

A new, state-of-the-art anatomy learning center is allowing first-year UCSF students to observe, discover, and understand the complex architecture of the human body in a novel way. Few other students in the world will learn anatomy in such an interactive and clinically relevant manner, says anatomy professor and postdoctoral alumna Kimberly Topp, PhD, PT, chair of the Department of Physical Therapy and Rehabilitation Science and Sexton Sutherland Endowed Chair in Human Anatomy. “Students will become experts in some procedures before they ever reach the clinic.”

- With the aid of six 72-inch, high-definition video displays that line the walls and are wirelessly connected to mobile cameras and iPads, students can interact with the learning material and observe fellow classmates' discoveries without leaving their workstations.
- All lab manuals and instructions are available in iBooks, an electronic format that uses video, self-assessments, text, and images.
- In addition to learning through the use of traditional embalmed cadavers, students can conduct dissections and common medical procedures on fresh tissue, including limbs and organs, giving them the chance to practice what they've learned on more realistic material.
- The center includes laparoscopic equipment for use with fresh cadavers and ultrasound imaging machines for learning from live subjects.



The 6,000-square-foot center has already facilitated interactions among students in dentistry, medicine, nursing, pharmacy, and physical therapy, advancing interprofessional education.

Tour the lab at [bit.ly/ucsf-lab](http://bit.ly/ucsf-lab).



## FACULTY ACCOLADES

**Kathy Dracup**, RN, PhD '82, dean emeritus of the School of Nursing, was one of 21 Institute of Medicine members appointed to the Committee on Governance and Financing of Graduate Medical Education. The committee will review the graduate medical education system and recommend how to better produce a medical workforce for the 21st century.

Three School of Medicine professors were elected to the Institute of Medicine, one of the highest honors in the fields of health and medicine: **Robert Edwards**, MD, resident alumnus, Departments of Neurology and Physiology; **David Julius**, PhD, chair, Department of Physiology, and Morris Herzstein Endowed Chair in Molecular Biology and Medicine; and **Jennifer Puck**, MD, Departments of Immunology and Pediatrics.

**Grayson W. Marshall**, DDS, PhD, MPH, distinguished professor emeritus in the School of Dentistry, was awarded an honorary doctorate at Malmö University, Sweden, in the Faculty of Odontology. In 2009, Marshall served on the university's advisory board, which reviewed its research program.

The School of Nursing's **Christine Miaskowski**, RN, PhD, was appointed to the new Interagency Pain Research Coordinating Committee created by the US Department of Health and Human Services. Miaskowski is a professor in the Department of Physiological Nursing, associate dean for academic affairs, and the Sharon A. Lamb Endowed Chair in Symptom Management Research.

**M. Anthony Pogrel**, BDS, MD, chair of the School of Dentistry's Department of Oral and Maxillofacial Surgery, received the Oral and Maxillofacial Surgery Foundation's Research Recognition Award. The award honors individuals who have made outstanding contributions to the specialty through their research.

President Barack Obama nominated **Mack Roach III**, MD, FACR, an internationally recognized expert on using radiation to treat and manage prostate cancer, to the National Cancer Advisory Board. The board advises the director of the National Cancer Institute about the national cancer program. Roach, a fellowship alumnus, is chair of the School of Medicine's Department of Radiation Oncology and a professor in its Department of Urology.

**Shuvo Roy**, PhD, was inducted as a member of the BayBio Pantheon for his contributions to the life sciences industry and specifically for work developing the world's first surgically implantable bioartificial kidney. Roy is an associate professor in the Department

of Bioengineering and Therapeutic Sciences, a joint department of the Schools of Pharmacy and Medicine, and the Harry Wm. and Diana V. Hind Distinguished Professor in Pharmaceutical Sciences II.

**Xiaokun Shu**, PhD, received a 2012 National Institutes of Health Director's New Innovator Award, which will provide up to \$1.5 million in research funding over the next five years. Shu, an assistant professor in the School of Pharmacy's Department of Pharmaceutical Chemistry, will use the funding to develop a new technology to identify dynamic interactions between proteins in human cells.

School of Nursing Dean **David Vlahov**, RN, PhD, has been elected to the Board of Directors for the American Association of Colleges of Nursing and appointed to the Health Resources and Services Administration's National Advisory Council on Nurse Education and Practice, an advisory position to the Secretary of Health and Human Services and to Congress.

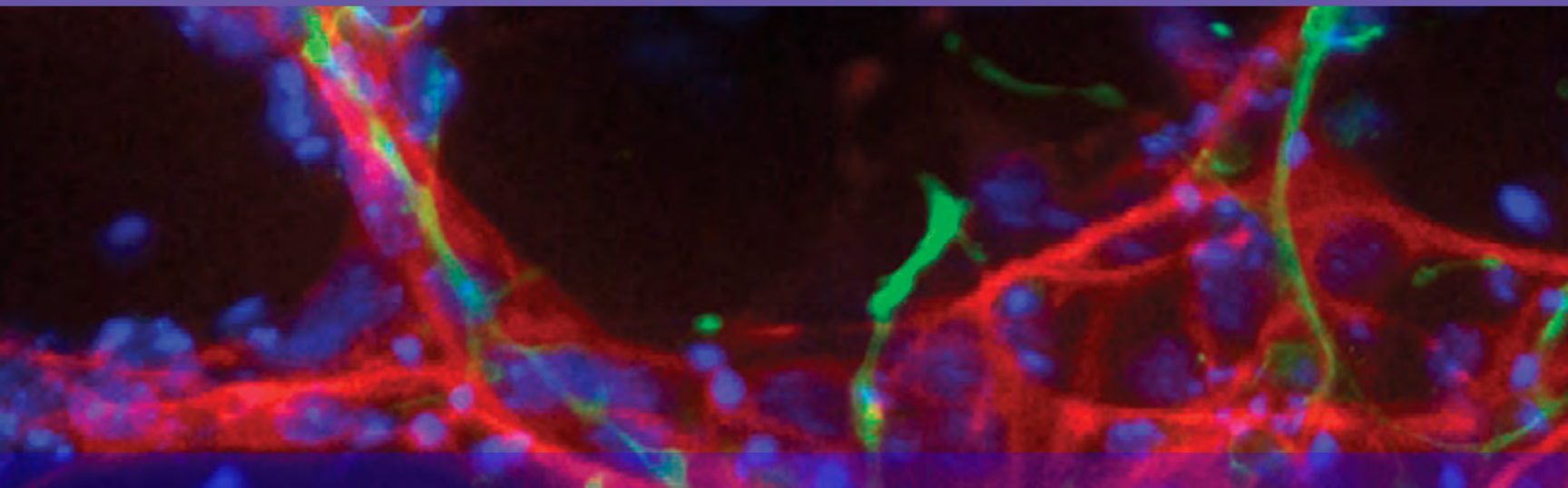
**Keith Yamamoto**, PhD, UCSF vice chancellor for research, executive vice dean of the School of Medicine, and professor of cellular and molecular pharmacology, was elected to the Institute of Medicine's governing council.

## UCSF EXPERTS AT YOUR FINGERTIPS

Thanks to UCSF Profiles, an online research networking tool, it's now easy to find the latest information on 6,000+ UCSF faculty, residents, and postdocs (including 110,000+ related publications). Users can search for details about an individual's expertise, experience, and publications; search by topic to find experts or recent UCSF papers in a specific subject area; and explore related networks, including co-authors and similar experts. "As a basic scientist in the '90s, I recognized a real need to break down silos between schools and scientists," says Maninder "Mini" Kahlon, PhD '98, deputy director of UCSF's Clinical and Translational Science Institute, which launched the tool. More than 40,000 unique visitors explore the site each month – and that number is growing. "It's clear we're on to something when users tell us they've used UCSF Profiles to find a book collaborator, a presenter for a conference, or an expert to round out a multidisciplinary research team."

*[profiles.ucsf.edu](http://profiles.ucsf.edu)*

# ***BLAST OFF***

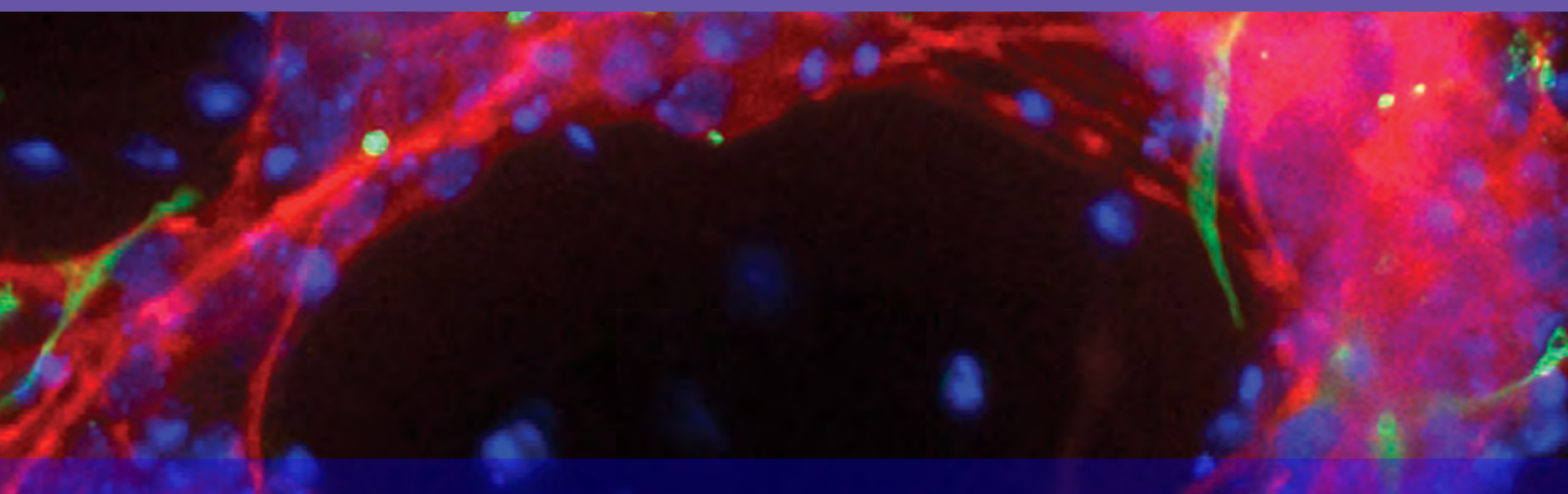


NOBEL PRIZE FOR YAMANAKA  
ROCKETS STEM CELL  
PROGRAM TO NEW HEIGHTS

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*BY KATE VOLKMAN OAKES*





## STEM CELL SCIENCE BLASTED ACROSS

front pages worldwide when Shinya Yamanaka, MD, PhD, won the 2012 Nobel Prize in Physiology or Medicine. The UCSF professor and senior investigator at the UCSF-affiliated Gladstone Institutes received the award for discovering how to transform ordinary adult skin cells into cells that, like embryonic stem cells, are pluripotent – capable of becoming any cell in the human body. The news brought fresh attention to something UCSF long ago sensed and seized: the promise of regeneration medicine for repairing or replacing damaged cells, tissues, and even whole organs.

PHOTO: GLADSTONE INSTITUTES/CHRIS GOODFELLOW



Shinya Yamanaka

## UCSF BLAZES A TRAIL

More than three decades ago, UCSF researcher Gail Martin, PhD, co-discovered “embryonic stem cells” in mice, coining the term (the cells were discovered separately and simultaneously by University of Cambridge investigators Martin Evans, PhD, and Matthew Kaufman, PhD). Embryonic stem cells brought hope to billions, giving scientists new avenues for understanding and treating some of the world’s most complex health conditions – heart disease, diabetes, epilepsy, multiple sclerosis, Parkinson’s disease, spinal cord injury, and many more.

Despite the cells’ tremendous promise, political pressure to stop embryonic stem cell research began to brew. In a sign of the times, the US Congress passed a 1995 amendment, known as Dickey-

**“Prop 71 was a perfect storm of three things. It was related to a transformational and exciting field; it was about not just one disease like diabetes or cancer, but every disease; and it was a means for the enlightened electorate in California to fight the anti-science movement in Washington.”**

Wicker, that prohibited the National Institutes of Health (NIH) from funding research in which human embryos are destroyed. Undeterred, UCSF’s Roger Pedersen, PhD, managed to continue his work without federal funds, becoming one of two university scientists in the country (the other being James Thomson, DVM, PhD, from the University of Wisconsin) to derive human embryonic stem cells using donated human embryos.

Another wall went up in 2001, when President George W. Bush signed an executive order stating any institution engaged in research on a human embryonic stem cell line created after that date would lose all federal funding. To avoid putting even its sanctioned federal funds at risk, UCSF decided to move Pedersen and his team to an off-campus site – a former dental lab in a shopping center. The team completed the move without him, however, after he opted to leave for the University of Cambridge, where he could pursue his stem cell studies unimpeded.

Pedersen’s team persevered under Susan Fisher, PhD, successfully deriving the first reported lines nourished in culture on a bed of human cells (previous lines were nourished on beds of mouse cells). Their breakthrough literally vanished when a massive storm wiped out power to their shopping center lab: since they couldn’t move the cells to a powered-up campus lab without jeopardizing UCSF’s federal funding, “we had to watch while they slowly died,” Fisher says. It set them back two years.

UCSF diabetes expert and stem cell supporter Jeff Bluestone, PhD, now UCSF executive vice chancellor and provost, was determined to stop these setbacks. Seeking ideas for alternate funding, he conferred with Bob Klein, a member of the UCSF Diabetes Center Leadership Council. Klein had just served as a principal negotiator on a Juvenile Diabetes Research Foundation team that worked to pass a \$1.5 billion mandatory federal funding bill, securing five years of supplemental diabetes research funds from the NIH.

## PROP 71 TO THE RESCUE

Klein recommended putting a bold new bond initiative before California voters: Proposition 71, the \$3 billion “California Stem Cell Research and Cures” initiative. Authored by Klein himself, the bond prevailed in 2004.

“Prop 71 was a perfect storm of three things,” says Bluestone, the A.W. and Mary Margaret Clausen Distinguished Professor in Metabolism and Endocrinology. “It was related to a transformational and exciting field; it was about not just one disease like diabetes or

iPS cells becoming heart  
and nerve cells



cancer, but every disease; and it was a means for the enlightened electorate in California to fight the anti-science movement in Washington.”

Out of Prop 71 came the California Institute for Regenerative Medicine (CIRM, or “serm” in the colloquial), created to regulate and fund stem cell research and facilities. Among CIRM’s first and largest grant recipients was UCSF, which had established a formal program with the help of a \$5 million gift from Andy Grove, PhD, then CEO of Intel Corp. The program was eventually named the Eli and Edythe Broad Center for Regeneration Medicine and Stem Cell Research at UCSF, following a 2008 gift of \$25 million from the Broads.

Renowned stem cell scientist and Broad Center director Arnold Kriegstein, MD, PhD, used the funding to recruit more top researchers, 25 of whom moved with their teams in 2011 to the new Ray and Dagmar Dolby Regeneration Medicine Building. Supported by \$36 million from the Dolbys and \$34.9 million from CIRM, UCSF planned the building to be both an engine for advancing stem cell science and a safe haven from federal funding constraints. President Barack Obama had already begun to ease those restrictions in 2009, when he determined the NIH could support research on many more human embryonic stem cell lines, including lines derived from donated frozen embryos no longer needed for fertility treatments.

## NOBEL FOR STEM CELL

With Yamanaka’s discovery of a way to work around human embryos, the controversy surrounding stem cell research started to fade. The Nobelist was first in the world to induce mouse skin cells to become pluripotent, successfully replicating his method with adult human skin cells soon after.

Yamanaka called his creation the induced pluripotent stem cell, or iPS cell, generated by treating a skin cell with four pieces of DNA (now called the Yamanaka factors) that induced the cell to revert back to its pluripotent state. His breakthrough has led to a variety of methods for reprogramming adult cells into stem cells that can become virtually any cell type, such as an oligodendrocyte, a critical

neuron in the myelination process.

While iPS and human embryonic stem cells share core capabilities, iPS cells are better suited for three important aspects of disease research. The first is disease modeling, in which scientists use a patient’s own skin cells – made into iPS cells and then redifferentiated into the patient’s diseased tissues – to study his or her disease. This process results in a more accurate model than one created with cells from another organism.

**“This iPS technology is for patients. The more scientists who build on it, the faster we can help those who live with chronic or life-threatening diseases.”**

“If a patient is suffering from an inherited disease of the nervous system, for example, you can turn the patient’s own skin cells into the dying nerve cells, which will contain a complete set of the genes that resulted in the disease,” explains Kriegstein, the John Bowes Distinguished Professor in Stem Cell and Tissue Biology. “You can then study the whole process of disease development in a dish, and even test out drugs on the cells.”

The second is drug development, using the cells themselves as drugs. “Ultimately, scientists could take a patient’s skin cells, induce them to their pluripotent state, correct the genetic mutation, and then transplant the corrected cells back into the patient,” Kriegstein says. “The great benefit to this path is that the corrected cells would not be rejected by the patient’s immune system.”

The third is testing new drugs for toxic effects to the heart or liver, which the FDA requires. Currently, testing is performed first in animals, but many drugs that do not appear to be toxic to animals

PHOTOS: SUSAN MERRELL



Stem cell mavericks: Jeff Bluestone, Arnold Kriegstein, David Rowitch, Gail Martin

can cause toxic reactions in humans. “The use of human cells to test drug toxicity might be a major method to improve the testing and reduce the enormous expense of withdrawing a drug once it’s already on the market,” says Kriegstein.

“This iPS technology is for patients,” Yamanaka said upon winning the Nobel, which he shared with John B. Gurdon of the Gurdon Institute in Cambridge, England. “The more scientists who build on it, the faster we can help those who live with chronic or life-threatening diseases.”

## HOPE ON THE DIABETES HORIZON

Turning stem cell discoveries into patient treatments is a goal shared by Bluestone, who is part of a CIRM-supported disease team striving to beat Type 1 diabetes. Fellow team members include Peter Stock, MD, PhD, resident alumnus, and director of the UCSF Pancreas Transplant Program; Matthias Hebrok, PhD, director of the Diabetes Center and Hurlbut-Johnson Distinguished Professor in Diabetes Research; and Mike German, MD, resident alumnus, associate director of the Diabetes Center, and Justine K. Schreyer Endowed Chair in Diabetes Research.

The team is partnering with biotech company ViaCyte, which began working with Hebrok and German a decade ago to determine how a human embryonic stem cell evolves into a beta cell, the kind of insulin-producing cell destroyed by the immune systems of Type 1 diabetes patients. Bluestone likens the evolution to driving from Los Angeles to New York, noting that ViaCyte successfully mapped the process all the way to Philadelphia – the pancreatic progenitor cell stage, between stem and beta cell – before it ran out of road.

“ViaCyte’s cells are very close to being beta cells but aren’t quite there,” says Bluestone. The final beta cell destination seems just within reach, however, since putting the pancreatic progenitor cells into mice leads to the development of insulin-secreting beta cells, the last leg of the cross-country trip.

“The next question is, ‘How do we introduce these pancreatic progenitor cells into people?’” Bluestone explains. To ensure that none of the immature cells escape and cause cancer in patients, ViaCyte has

created an implantable, retrievable device that harnesses the ability of the cells to secrete insulin although the cells themselves remain caged.

Time will tell whether the capsule will also succeed in preventing the body from recognizing and destroying the transplanted tissue, Bluestone says. Meanwhile, the UCSF team is ready to work with ViaCyte on development and testing of immunosuppressive drugs to prevent tissue rejection.

“At this point, the company expects the device will be in patients in the next one to two years,” notes Bluestone.

## PROMISE FOR MISSING MYELIN

Pediatrician and Howard Hughes Medical Institute investigator David Rowitch, MD, PhD, and colleagues have already implanted neural stem cells into patients with the devastating disorder Pelizaeus-Merzbacher disease (PMD) – generating the world’s first report of safely transplanted neural stem cells and further suggesting that the cells may

**“PMD is so incapacitating that it becomes possible to think about testing a new therapy like stem cell transplant in these patients, although the therapy has a very unclear risk profile.”**

produce new myelin, an essential nervous system material lacking in PMD, multiple sclerosis, and cerebral palsy.

PMD patients are born without myelin, a material that insulates the nerve communication networks of the brain. In the absence of myelin, these networks “short-circuit” like bare electrical wires and are unable to correctly propagate nerve signals, resulting in neurodegeneration and dysfunction. PMD primarily affects boys and can be fatal by age

STEM CELL IMAGES: LEFT, VIVI HEINE; RIGHT, DAVID ROWITCH

Multipotent  
neural stem cell





The Ray and Dagmar Dolby Regeneration Medicine Building, opened in 2011, is designed to foster intensive collaboration and a cross-pollination of ideas among scientists.

PHOTO: BRUCE DAMONTE/COURTESY OF RAFAEL VIÑOLY ARCHITECTS

15; children with severe PMD have difficulty breathing and can't feed themselves, crawl or walk, talk, or even sit up.

"PMD is so incapacitating that it becomes possible to think about testing a new therapy like stem cell transplant in these patients, although the therapy has a very unclear risk profile," explains Rowitch.

Partnering with UCSF's Nalin Gupta, MD, PhD '96, the Dennis Bruce Dettmer Endowed Chair in Pediatric Neurosurgery, Rowitch injected human neural stem cells developed by biotech company StemCells, Inc., into the white matter of four PMD patients. Months after the transplants, they found evidence that the stem cells had successfully engrafted, receiving blood and nutrients from the surrounding tissue and integrating into the brain, a process Rowitch likens to a plant taking root.

The team also found indirect evidence that the stem cells had become oligodendrocytes and were producing myelin. Simultaneously, scientists at StemCells, Inc., and Oregon Health & Science University confirmed that human neural stem cells implanted into mice became oligodendrocytes and produced myelin.

While the transplanted cells appear to have generated myelin, Rowitch cautions the primary purpose of this phase I study was to show using the cells is safe. A phase II clinical trial is now needed to test whether transplanted cells can improve clinical outcomes in PMD patients. If a phase II trial proves successful, neural stem cell transplantation may one day lead to cures for a whole host of neurological diseases.

## SUPPORT OF TRANSFORMATIVE SCIENCE

Bluestone acknowledges much of the credit for the advancement of stem cell science at UCSF and around the world is owed to CIRM and other private supporters of the work. He says after Prop 71 passed and CIRM began to thrive, programs bloomed across the globe. "Nobody wanted to be left behind. The amount of money, energy, and research put into the field was enormous, and it made a gigantic difference," Bluestone says.

"Grants from CIRM and private supporters have literally transformed the worldwide landscape in stem cell research and catapulted California to the forefront of a whole global effort," Kriegstein adds. "The largest concentration of first-rate stem cell science is in California. It wouldn't be, without these grants."

"Californians voted for Prop 71 because they wanted to see cures and treatments for diseases," Kriegstein continues. "Considering that the field is so young and it takes 15 years for an experienced drug company to turn a proof of concept into a therapeutic, it's remarkable we already have one or two going into clinical trials."

"Still, there's a lot of work going on here in the very basic science phase, and that's as it should be – since basic science is where it all begins."

*Hear UCSF and Gladstone leaders reflect on Yamanaka's prize ([bit.ly/ucsf-nobel](http://bit.ly/ucsf-nobel)) and listen to Yamanaka discuss his discovery and Nobel experience ([bit.ly/ucsf-sy](http://bit.ly/ucsf-sy)).*

Oligodendrocyte  
(myelinating) cell

# THE POWER OF PRECISION MEDICINE

By Leland Kim and Jennifer O'Brien

**A**t any given moment, you can find heart disease patient Heidi Dohse tackling a 200-mile bike race through three mountain states, windsurfing Maui's massive waves, or engaging in another of the many sports she's loved all her life. By participating in the emerging field of precision medicine, this elite athlete is helping to ensure a future full of activity – for herself and others like her.

UCSF is among the top global health sciences institutions leading the charge to advance precision medicine, which aims to integrate the wealth of data arising from both the human genome and studies on the molecular basis of disease with information on environmental factors and patients' electronic medical records. The data will inform laboratory research and clinical care – and ultimately lead to more diagnostics and treatments tailored to individual patients.

Under precision medicine, a patient like Dohse, 49, is the linchpin. The star sportswoman, (shown at right), has spent much of her adulthood monitoring a pacemaker implanted into her chest at age 19 to repair arrhythmias, or rapid irregular heartbeats. For years, she's flown back and forth from her New York home to California for check ups with the UCSF medical team that performed the life-saving procedure.

Those time-consuming trips are not as necessary since she enrolled in Health eHeart, an ambitious precision medicine study developed and led by cardiac electrophysiologist Jeffrey Olgin, MD, Division of Cardiology chief and resident alumnus. The study relies on smartphones to monitor heart

disease patients in real time and send the information to doctors who can analyze the data and provide instant feedback.

Through Health eHeart, launched in March, physicians hope to better understand how the heart functions and develop new ways to predict and prevent cardiovascular disease. Funded by the Salesforce.com Foundation, the study aims to enroll 1 million people worldwide.

"We hope to be able to collect copious amounts of data on a large segment of the population so we can develop very robust and accurate models to predict the occurrence of heart disease in people who don't yet have it – or slow the progression in people who already have the disease," says Olgin. "And because these patients are connected to us electronically and through their smartphones, we can deploy the study very quickly."

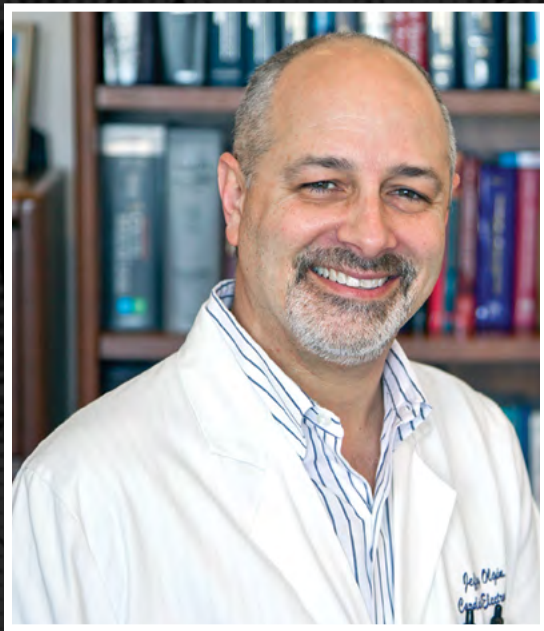
"Not only are they collecting my data, they're also collecting data of people like me, that will create specific heart plans for me now," adds Dohse. "This is going to help guide treatments as I get older and go through different phases of my heart care. So I'm really excited about participating and adding my data to the pool, as well as learning – and taking advantage of what's learned – from everybody else."

**Don't miss** the fall 2013 issue of UCSF Magazine for extensive coverage of the first OME ("ōm") Precision Medicine Summit, held on May 2 and 3, 2013, at the UCSF Mission Bay campus. A collective effort by 150 of the world's foremost thinkers, creators, and innovators, the event harnessed the power of personal and cumulative health data to propel precision medicine inward, outward – and forward.

**ome**

*Watch Heidi Dohse participate in precision medicine to overpower heart disease ([bit.ly/ucsf-dohse](http://bit.ly/ucsf-dohse)), and learn more about the Health eHeart study ([health-eheartstudy.org](http://health-eheartstudy.org)).*





LEFT: Cardiac electrophysiologist and precision medicine pioneer Jeffrey Olgin

RIGHT: The Health eHeart app allows doctors to monitor heart disease patients via their smartphones – and use that data to better care for other patients with similar conditions



# depth

OF FIELD

“UCSF attracts a special type of student,” says dentistry professor Steve Silverstein, DDS, MPH, a public health veteran. “They’re drawn to San Francisco for its legacy of social justice, and they give back while they’re here because it’s in their DNA.” The many ways in which UCSF students reach out to the community are as diverse as the city itself, from combating Hepatitis B to hosting radio shows about science careers. These efforts fill a void for the underserved, and can also spark revelations for students about the social determinants of health – the cultural, economic, genetic, and behavioral factors that threaten the well-being of entire communities.

BY CLAIRE CONWAY



PHOTO: STEVE BABULJAK





Members of the School of Pharmacy's Science Squad (in red) deliver a lesson on circuitry to kids at Rosa Parks Elementary School



Vivian Sha, NPC, just completed a full year's immersion in community health at Glide Health Services, located in the Tenderloin district of San Francisco. Managed by nurses, the federally qualified center provides vital primary care to some of the city's most impoverished patients – and mentors students like Sha, who seek to treat the underserved as part of their training.

Three years ago, Glide expanded its scaffold for these trainees by partnering with UCSF in a joint nurse practitioner residency, among 10 programs nationwide to receive a three-year Health Resources and Administration grant. Sha was one of the program's first two graduates.

“Community health is different. The pace is faster, there are a lot of elements, and there's not much support,” says Pat Dennehy, RN, MS '99, DNP, UCSF nursing professor and Glide's director. New graduates often require more mentoring; without it, they tend to leave safety-net practices, she explains. “Our program strives to provide that support.”

“Most of our patients at Glide don't just have complicated medical backgrounds,” says Sha. “They often have psychosocial issues like addiction, depression, or exposure to violence. They may be marginally housed, if housed at all.” Many are not – 75 percent of the clinic's patients have nowhere to call home.

Evidence of how social disparities undermine health is abundant at Glide. Lifesaving screenings or treatments, even when free, remain out of reach for some of Sha's patients, who may not have the transportation to attend appointments or the skills to read what are typically complex instructions written in English.

So-called “patient noncompliance” can also have more heart-breaking origins. For example, when women patients kept missing their mammogram appointments, the Glide staff investigated and learned why: without access to clean undergarments and a shower, the women were too embarrassed to be examined. Glide now supplies a readiness kit before the mammograms, one of many innovative and proven



really break down when and why we were upset during a patient interaction and how we could better address our issues in the future,” says Sha. “That was a crucial part of the residency.”

When she finally made a breakthrough with one resistant patient, she felt transformed. “He was a very, very difficult man with diabetes and high blood pressure, both completely out of control,” Sha recalls. Although he initially came in for pain medication, additional testing indicated he had prostate cancer. “After diagnosing him, I saw immediate changes. We worked together on the cancer and his other problems. He'd take the extra step and say, ‘Hey Vivian, I want to get my scans done now.’” At the end of her residency, he asked if he could follow her to her new clinic. “It touched my heart,” she says. “He was taking charge of his health, and I was part of the change.”

Ryan Ray Dela Cruz works to fill another great void for San Francisco's indigent population: dental care. Following in his men-

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**“Community health is different. The pace is faster, there are a lot of elements, and there's not much support. Our program strives to provide that support.”**

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approaches to community health that earned Dennehy a 2012 James Irvine Foundation Leadership Award.

While coming up with creative routes around poverty was difficult, the most challenging part of Sha's job was engaging patients in their own health care. “An adviser, Dr. Loma Flowers, encouraged us to





UCSF has a legacy of community health that starts in its backyard and extends around the globe. At Glide Health Services in San Francisco's Tenderloin, School of Nursing resident Vivian Sha (center) mentors new resident Lisa Masai (right) as they consult with a patient.



tor Steve Silverstein's footsteps, Dela Cruz is directing the School of Dentistry's Community Dental Clinic (CDC). "Our patients are from disadvantaged backgrounds and have absolutely no other way to obtain dental care," says Dela Cruz, a third-year student. "A lot of them are recovering drug addicts who are trying to get their lives back together."

His most poignant moment at the CDC came in the form of a smile, as he worked on a woman with a missing front tooth. "Her mouth was always clamped closed," Dela Cruz says. Then she received the one crown donated to the clinic each month. "After eight visits, I finally saw her smile!" he recalls. "She was so happy, she was in tears."

Started by fourth-year dental students in 1993, the CDC is solely student-run, with volunteer faculty supervision. More than 80 percent of dentistry students volunteer at the clinic, performing routine and deep cleanings and filling cavities. Silverstein believes this focus on student involvement is behind the clinic's success. "The CDC is still around because it's entirely student-driven," he says. "If students quit, they're letting each other down, and they would never do that."

PHOTOS: RIGHT: JONATHAN DRUM

Though each project has its own inroads to community, they all require commitment from students who are already knee-deep in demanding degree programs. From top: Dentistry's Ryan Ray Dela Cruz, Medicine's Colette DeJong, and Pharmacy's Tanvi Shah.







Graduate students and 'Carry the One Radio' founders say UCSF, with its culture of independence, set the tone for creating the show. From left: Bryan Seybold, Karuna Meda, and Osama Ahmed interview faculty member Eric Collisson.

The clinic operates on less than \$5,000 annually, receiving basic infrastructure support from Dean John D.B. Featherstone's office. Together, students donated the equivalent of \$87,684 in services during 2011. Although they receive elective credits for their work, the real payment is gratitude.

"I can't even describe what I get out of this," says a choked-up Dela Cruz. "Yes, I gain experience running a practice. But honestly, the best part of this job is the thank-yous. The patients are just

so appreciative." They have an especially good reason to be grateful this year: after winning the American Dental Association's 2012 Bud Tarson Dental School Student Community Leadership Award, Dela Cruz donated his \$5,000 check to the CDC's modest coffers.

As with dental care for the poor, the economic recession has also taken a toll on public education in San Francisco. Tanvi Shah, a second-year pharmacy student, and 29 of her fellow trainees try to patch the academic holes by teaching science at Rosa Parks Elementary, an

underfunded school in the Western Addition neighborhood. Pharmacy students began volunteering here two years ago, conveying the subject of science in a hands-on, engaging way.

An Otter Pop – a liquid sweet treat that turns to ice in the freezer – is just one of the tools Shah has in her lesson plan, using the pop to impart a fundamental science lesson. "In our States of Matter and Phase Change curriculum, we dip Otter Pops in liquid nitrogen to show the instant change from liquid to frozen," she says. "The kids love it! They're amazed."

The Science Squad, as Shah and her colleagues refer to themselves, teach six times a year at Rosa Parks; to date, they have educated 100 students from the fourth and fifth grades. The potential impact of their work is twofold. Kids with a background in science may be better able to understand preventive health information and incorporate it into their lives, thereby avoiding many of the health issues that plague underserved communities. What's more, exposure to the Squad's science professionals encourages kids to forge their own paths to science careers.

Graduate student Osama Ahmed is also pitching science careers – to minority high school students. "When I started UCSF's doctoral program in the neurosciences, I took a look around and saw very few minority students," says Ahmed, an immigrant from Sudan. While in high school, Ahmed completed a minority apprenticeship at Philadelphia's Monell Chemical Senses Center, realizing the power



of outreach programs in the process. “My mentor at Monell told me he believes people just don’t know about science as a career and therefore don’t pursue it,” he says. “So I came up with a radio show where investigators talk, jargon-free, to a mass audience, to get people excited about it.”

The show’s title, “Carry the One Radio,” is both a nod to mathematics and a reference to the notion of lifting people to new heights. Ahmed’s goal is to feature a rich variety of people and perspectives in graduate-level science. “There’s a broad spectrum of races in the US,” he says. “Shouldn’t it be reflected in the sciences?”

Ahmed and his founding partner, Bryan Seybold, another graduate student in the neurosciences, have put together a team of 10 students and a high school teacher to help recruit guest scientists, build the audience, and hone the show’s website ([carrytheonradio.com](http://carrytheonradio.com)). They have interviewed more than 30 scientists so far.

“The vast majority have not only been willing but excited to participate,” says Ahmed.

Once he gets the green light to conduct an interview, Ahmed and fellow student Karuna Meda, also a doctoral trainee, pack up a computer rigged with recording software and head to the investigator’s office. Ahmed and Meda ask their subjects to speak in lay terms about their overall research, answer one specific question relevant to their interest, and end with why they chose science as a career.

“I think it’s really powerful for kids to hear about how these scientists who are changing the world got to be where they are,” says Ahmed. “By listening to an episode, maybe they’ll get excited and think, ‘Hey, I can do this, too.’”

Seybold sees UCSF as an ideal setting for the radio show. “We’re located in a city of start-ups, at a university that values independence,” he says. UCSF, he notes, is not an ivory tower dominated by a few elite labs. “This is a public institution with many small, powerful labs making things happen, an environment that set the tone for creating the show. We saw a need, and made ‘Carry the One Radio’ happen.”

First-year medical student Colette DeJong, who is enrolled in UCSF’s Program in Medical Education for the Urban Underserved (PRIME-US), chose UCSF for the same spirit of independence that Seybold so values. PRIME is a five-year track for medical students who are committed to working with underserved communities.

“UCSF has a long legacy of social justice with its pioneering work in HIV/AIDS, and it’s situated in one of the most progressive cities in the country,” says DeJong. “I was drawn here because UCSF is making a big effort to give back to its community in lasting and meaningful ways.”

PRIME students hit the ground running: during her second week, DeJong was placed on a Hepatitis B working group under the guidance of a “navigator” from the San Francisco Health Improvement Partnership (SFHip), a consortium of community organizers, govern-

ment agencies, and UCSF clinical scientists. One of four working groups devoted to chronic illnesses that impact communities in San Francisco, the Hepatitis B group is reaching out to the city’s Asian and Pacific Islander population, which is 100 times more likely to contract Hep B than others. The virus, which can be asymptomatic for years, underdetected, and lethal, is responsible for 80 percent of the country’s liver cancer diagnoses.

“San Francisco has the highest rate of Hep B in the nation,” reports DeJong, “and it’s 50 to 100 times more infectious than HIV.”

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**“I was drawn here because UCSF is making a big effort to give back to its community in lasting and meaningful ways.”**

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DeJong is interviewing the major players in the effort to contain the virus, including staff members of the Chinatown Public Health Center; city health workers; UCSF physician and Vietnamese immigrant Tung Nguyen, MD, resident alumnus; and representatives from Kaiser Permanente, which has been very successful in treating its Hep B patients.

“One of our goals is to get the students out of the classroom, which has an evidence-based perspective, and into the community, to expose them to an ‘eminence-based’ perspective,” says Aisha Queen-Johnson, PRIME’s project manager. “They see what it takes to come together at the table and work on policies and effective interventions, in real time.”

PRIME students learn immediately that doctors are not the sole arbiters of health care. “There’s no medication that alleviates issues with housing, education, lack of access to healthy food, or being unsafe in your home,” says DeJong. “Health care doesn’t start or stop at the doctor’s office doors.”

Physicians in DeJong’s working group have one chair at a communal table that also seats nurses, pharmacists, epidemiologists, public health researchers, biomedical statisticians, and HMO administrators. She is struck by how thoughtful and collaborative the process has been.

“Historically, parts of this group would be in competition with each other,” DeJong points out. “Now they realize that by addressing the problem separately, they won’t make a lot of progress. Working together, they will.”

*Watch the students discuss why they serve ([bit.ly/ucsf-service](http://bit.ly/ucsf-service)), and view an interactive map of UCSF community projects in San Francisco ([ucsf.edu/news/community](http://ucsf.edu/news/community)).*





**SHOULD ANYONE DOUBT AMERICA'S MOUNTING HEALTH CRISIS**, a new report from the National Research Council and Institute of Medicine makes it crystal clear. On average, Americans of all ages die sooner and experience higher rates of disease than people in 16 other rich countries. Even advantaged Americans with health insurance, college educations, and higher incomes appear to be sicker than their peers in other wealthy nations. While the reasons are varied and potential solutions complex, UCSF experts are proving that your mother's admonishments – eat your vegetables, get off your duff, quiet down – may be just the prescription this nation needs. Turns out, a healthy lifestyle can not only keep illness at bay, but it may even stop a disease like cancer dead in its tracks.



*By Kate Volkman Oakes*

# Can **WELLNESS** Cure?

## HEALTHY LIVING HALTS DISEASE

UCSF has long led the way in demonstrating the positive effects of a healthy lifestyle. Dean Ornish, MD, UCSF clinical professor of medicine and founder of the nonprofit Preventive Medicine Research Institute, was still in medical school when he witnessed a disturbing trend: a growing number of heart disease patients were having repeat bypass surgeries. Wondering what would happen if these patients stopped smoking and began to eat better, exercise more, manage their stress, and expand their social support networks, Ornish turned his curiosity into a first-ever study – with profound results. Through this initial study and many since, he showed the arteries of heart disease patients become less clogged and their blood flow increases, effectively reversing their disease.

Today, UCSF scientists across the disease spectrum are proving that a healthy lifestyle can have drug-like potency, among them Peter Carroll, MD, Department of Urology chair and co-leader of the Prostate Cancer Program at the UCSF Helen Diller Family Comprehensive Cancer Center. Carroll, a resident alumnus, partnered with Ornish and the late William Fair, MD, of Memorial Sloan-Kettering Cancer Center in a major clinical trial that evaluated the effects of comprehensive lifestyle changes on prostate cancer.

The team enrolled 93 men under “active surveillance,” whose doc-

tors had caught their prostate cancer early enough to opt for regular monitoring through blood tests and biopsies, instead of the harsh surgery, radiation, or chemotherapy needed for later-stage cancers.

Participants fell into two groups; one was asked to make comprehensive lifestyle changes, the other was not. Patients in the healthy lifestyle group participated in the same program Ornish developed for reversing heart disease – moderate aerobic exercise, yoga or meditation, a weekly support group session, and a low-fat vegan diet consisting primarily of fruits, vegetables, whole grains, and legumes supplemented with soy, vitamins, and minerals.

Three short months later, the team observed a genetic change among men in the healthy lifestyle group. “More than 500 genes changed, and they moved in a beneficial direction every time,” says Ornish. “In particular, the genes that promote heart disease, prostate cancer, breast cancer, colon cancer, and diabetes were down-regulated, or ‘turned off,’ and other genes that discourage the development of these diseases were up-regulated, or ‘turned on.’”

After one year, the team found that prostate-specific antigen (PSA) levels, a protein marker indicating the presence of prostate cancer, decreased in the healthy lifestyle group but increased in the other. The more closely participants in the first group followed the recommendations, the more their PSA decreased. When the team took serum (blood

plasma) from participants in both groups and placed it in a petri dish with an unrelated prostate tumor sample, they observed that serum from the healthy lifestyle group inhibited the sample's growth by 70 percent, while the control group serum restrained it by only 9 percent.

"I tell my patients there's evidence that if you change your diet and exercise you may both prevent cancer and change its progression once you have it," says Carroll. "Depending on the degree of cancer, it can be done in conjunction with standard treatment, or for some people it could be in lieu of immediate treatment."

One such patient was Jack McClure, 68, a participant in the UCSF trial. At age 57, in view of his family history of heart disease, McClure was advised by his doctor to follow the Ornish program from a book, but he couldn't stay the course. "I lasted three weeks," he says.

When McClure was eventually diagnosed with early-stage prostate cancer and offered a spot in the trial, he took it, and got serious. By the end of the trial, his prostate cancer was arrested. With a corresponding decline in blood pressure and 28-pound weight loss, McClure's risk of heart disease complications dramatically decreased as well.

McClure attributes his ultimate success in sticking with the program to his biweekly support group, which has continued to meet under its own direction since the trial ended. Ornish remarks, "People who are lonely, depressed, and isolated are up to 10 times more likely to get sick and die prematurely than those who feel a sense of love, connection, and community."

## HEALTHY LIFESTYLE = FOUNTAIN OF YOUTH?

Can adhering to a healthy lifestyle do more than simply stop disease and actually add years to your life? Yes, suggests research by UCSF's Elizabeth Blackburn, PhD, winner of a 2009 Nobel Prize in Physiology or Medicine for her co-discovery of telomeres, the protective tips on the shoestring-like chromosomes that control aging, and telomerase,

the enzyme that restores telomeres as they wear down.

Blackburn, a professor of biochemistry and biophysics, partnered with Ornish and Elissa Epel, PhD, postdoctoral alumna, UCSF associate professor of psychiatry, and member of the Osher Center for Integrative Medicine, to explore another angle of Carroll's prostate cancer trial: whether a healthy lifestyle had any effect on participants' telomere length, which corresponds to the length of human life.

The team reported that at the three-month mark, telomerase activity had increased by 30 percent in the healthy lifestyle group. This spring, Ornish will publish a subsequent five-year study showing that telomere length increased in the healthy lifestyle group but decreased in the control group.

"No other intervention, including pharmaceuticals, has been shown to make your telomeres longer," notes Ornish. "If a healthy lifestyle could be packaged and sold like a drug, it would be a billion-dollar drug."

## BETTER HEALTH AT LOWER COSTS

When it comes to using a healthy lifestyle for clinical treatment, all diseases are on the table, as a rising number of UCSF scientists demonstrate its benefits.

"Many patients with Type 2 diabetes won't even require medication if they can lose weight, exercise more, and therefore more efficiently use the insulin their body already has," says Mike German, MD, resident alumnus, associate director of the UCSF Diabetes Center, and Justine K. Schreyer Endowed Chair in Diabetes Research.

Prescribing a healthy lifestyle like a drug promises to fix more than just America's growing health issues: it also stands to have a dramatic effect on the nation's crippling health care costs.

"Three-quarters of the \$2.8 trillion we spent on health care in 2012 went to treatment for chronic diseases," Ornish says. "If we can moti-



Healthy lifestyle leaders: Peter Carroll, the Ken and Donna Derr–Chevron Texaco Distinguished Professor in Prostate Cancer; Dean Ornish, a member of President Barack Obama's Advisory Group on Prevention, Health Promotion, and Integrative and Public Health; Elizabeth Blackburn, Nobel Prize winner and Morris Hertzstein Professor in Biology and Physiology

PHOTOS: FROM LEFT: UCSF DMM, ERIK BUTLER, THOR SWIFT



vate and incentivize people to lead healthier lifestyles by reimbursing for it, we can make better health care available to many more people at much lower costs. And the only side effects are good ones.”

## MEDICARE REIMBURSES FOR LIFESTYLE CHANGES

“Part of the myth is that lifestyle changes are only for prevention, and even then it takes years to see the benefit,” says Ornish. “But if you offer lifestyle as treatment, then both the cost savings and the clinical benefits are seen in the first year.”

As proof, Ornish teamed up with two insurance companies to compare medical costs for patients with heart disease who chose to adopt a healthy lifestyle instead of receiving a bypass or angioplasty. Mutual of Omaha saved \$30,000 per patient in the first year. Highmark Blue Cross Blue Shield cut overall health care costs by 50 percent in the first year and an additional 20 to 30 percent in years two and three.

Medically, almost 80 percent of the patients safely avoided bypass

surgery or angioplasty. “The blood flow to and from the heart improved in just a month, and even severely blocked arteries became measurably less blocked after a year, with more improvements after five years,” says Ornish.

The powers that be were so impressed, they were finally convinced to act: in January 2011, after 16 years of review, Medicare began covering “Dr. Ornish’s Program for Reversing Heart Disease.”

“I used to think if we just did good science, it would change medical practice,” he says. “I was wrong. Good science is important, but it’s often not sufficient. If you change reimbursement, though, you change medical practice and even medical education.”

*Watch Dean Ornish speak about the power of lifestyle changes and love at Dreamforce 2012 ([bit.ly/ucsf-ornish](http://bit.ly/ucsf-ornish)).*

# A PRESCRIPTION FOR LIVING WELL

Ornish’s healthy lifestyle program, the Spectrum, consists of four main elements:

- A low-fat diet based on whole foods and plants
- Moderate exercise
- Meditation or yoga
- Love and support

The diet places foods in five categories. The first includes what Ornish calls the most healthful foods, like fruits, vegetables, whole grains, and egg whites; the fifth contains the least healthful, such as red meat, yolks, and butter.

To reverse heart disease and other chronic illnesses, Ornish encourages patients to adhere to a precise formula, such as at least 30 minutes of vigorous

exercise and an hour of yoga every day. To prevent disease and stay healthy, he says, people have a spectrum of choices. “What matters most is your overall way of eating and living.”

“Instead of me telling you what you need to do, you tell me how much you want to change and how quickly,” Ornish says. “If you want to reduce your cholesterol level by 50 points but you’re not ready to eat a completely plants-based diet, maybe you say, for example, ‘I’ll eat a little more food from categories one through three, and less from four and five.’ If after four weeks your cholesterol comes down 30 points and you want it lower still, you can opt to do more.”

For some people, making moderate changes is effective. Others find it easier to make big changes in lifestyle. “When you change everything at the same time, you feel so much better so quickly,” Ornish explains. “It reframes the reason for changing lifestyle from fear of dying, which is not sustainable, to joy of living, which is.”









# Early RISE

It was 1975 when Nancy Ascher, MD, PhD, chose surgery, a specialty shoulder-deep in men. Then again, so was medical school – Ascher was one of 20 women in her class of 180. After her residency, she blew past every gender barrier to become the first woman to perform a liver transplant, garnering enough speed to break through the stainless-steel ceiling to serve as UCSF's first female chair of surgery – one of three women holding that title in the country. The pace at which Ascher propels through every day is the velocity required for the steep ascent of a remarkable career.

BY CLAIRE CONWAY

PHOTOGRAPHY BY ELISABETH FALL





## START THE DAY



“When I was younger, I’d prepare for surgery by going through the steps of a transplant during my morning run. Now that the steps are second nature, I work out on my elliptical with opera blasting. You really have to be fit for surgery, not just mentally but physically, because it’s very taxing. I had one liver transplant that lasted 24 hours – I took two breaks. Typically, though, they take six or seven.”



## PRE-OP



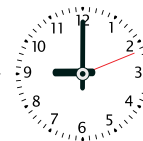
“When patients get cadaver organs, I usually meet them for the first time just minutes before surgery. Others I meet far earlier, because they’ve been in the hospital deteriorating before my eyes. But we really get to know the liver patients after the operation, since we become their family doctors for life. I’ve known some patients since 1981.”







## SURGERY



“My OR is silent – a place of worship where we focus only on the patient. It’s not possible to have mastery over what’s going on in that room. The science and art of surgery is what you do with what you find. The technical skills involve not just dexterity, but situational awareness. You have to know the planes – all the important parts of the body that are just beneath or beside your line of vision. And when things get complicated, the answer is not to speed up, but to slow down and figure out what’s going on. It takes years to do this at the highest level. The art of it? That’s doing surgery as well as it can be done.”







## ROUNDS



“We have a world-class kidney and liver transplantation program, perhaps second to none. Twenty-five of our surgeons were voted best in the nation by US News & World Report, 15 in the top 1 percent. But the rankings don’t mean much if our surgeons can’t pass along what they know to our trainees. A good teacher understands the obstacles trainees face in the moment and what they have to overcome. My husband, John Roberts, head of transplant surgery, is great at this. The technical skills came easy to me; I’m still working on the other part.”





## POST-OP



“People say surgeons are standoffish – that they meet patients in the OR after anesthesia and never see them again. But the truth is, surgery is nothing but intimate. Something happens during a procedure, and there’s a bond. We feel it; they feel it. When I was training in a sea of men, nobody told me that.”



## HOME AGAIN



“Being the daughter of Nancy Ascher and John Roberts,” says Becky Roberts Ascher, “meant eating Bagel Bites for dinner and having the parents who couldn’t attend school functions. But every time we go to one of their work events, my brother and I are reminded they’re awesome. Just last Friday, I had at least 10 people tell me how lucky I am to have my mom and dad as parents. How many kids get to say that?”





Li Ka-shing (center, in red)  
at Shantou University's  
commencement

## Li Ka Shing Foundation Accelerates Precision Medicine at UCSF

With foresight – and philanthropic firepower – the Li Ka Shing Foundation is helping transform health.

The Li Ka Shing Foundation has pledged \$2 million to support UCSF in advancing precision medicine, a nascent field aimed at revolutionizing medical research and patient care. Precision medicine integrates the wealth of data emerging from both the human genome and research on the molecular basis of disease with information from patients' health records and environmental data.

Collectively, this information will shape lab studies and clinical care, leading to new ways to precisely diagnose patients' conditions based on their own genetics and background, and to develop customized therapies that are more effective, with fewer side effects. How each patient responds to those treatments would further inform the science, creating a virtual loop that continuously builds our understanding of health and disease.

"Our goal is to give every patient access to precise, predictive, and personalized care, anywhere in the world," says UCSF Chancellor Susan Desmond-Hellmann, MD, MPH, resident alumna. "Today, there are glimpses of the potential, as seen in targeted treatments for breast cancer, but we don't have such targeted therapies for most diseases, including diabetes, and patients suffer as a result."

UCSF will use the funding to build a worldwide network of clini-

cians and researchers, launch leadership exchanges with China, and create a systems pharmacology program to develop more precise medications.

"We are very grateful to the Li Ka Shing Foundation for providing critical support in launching this initiative to make precision medicine a reality," says Desmond-Hellmann. "This partnership is the cornerstone on which the next century of medicine will be built."

This is the first grant UCSF has received from the Hong Kong-based charitable foundation, which has contributed nearly \$1 billion to education, health care, and cultural causes since it was founded in 1980 by the Honorable Li Ka-shing, GBM, KBE, JP.

The grant creates a pioneering partnership among the Foundation, UCSF, and Shantou University in China. Shantou University, which is supported by the Foundation, is building an advanced curriculum focused on the life sciences.

"As institutions, we share an abiding commitment to using innovation to improve the welfare of people throughout the world," says Solina Chau, the Foundation's director. "Precision medicine reflects this shared mission by combining innovative tools and targeted therapies to produce highly personalized patient care."



# Alumni Hub

## INSIDE THE HUB

UCSF alumni of all ages and professions share a desire to serve. To echo the theme of Alumni Weekend 2013 – service – the profiles on the following pages feature alumni who are contributing to their communities, professions, and patients in ways that exemplify the UCSF service mission.



**Globetrotting with UCSF alumni:** Hundreds of far-flung alumni gathered at events from the East Coast to Asia in 2012. The Alumni Association of UCSF, home to 10 regional chapters, sponsored events and activities in Los Angeles, Boston, New York, Washington DC, Seattle, Honolulu, Portland, Ore., Taipei, Beijing, Hong Kong, and Shanghai, as well as the Bay Area. If you'd like to learn about or plan events in your area, please contact [alumni@support.ucsf.edu](mailto:alumni@support.ucsf.edu).

# School of Dentistry

## ALUMNI PROFILES



UCSF DAA Secretary Christine Hayashi, DDS '93, and Carmen Hipona, DDS '96, (right) at the Scientific Session at Alumni Weekend

### CONSUMMATE CONNECTOR

Carmen Hipona, DDS '96, incoming president of the School of Dentistry's Dental Alumni Association, has a long history of building relationships between alumni and their alma mater: 10 years ago she created the Bear Bash with her husband, Eduardo Castro, DDS '96, also a member of her graduating class. A decade later, the Bash continues to create camaraderie among alumni, current students, and faculty.

"The Bash brings everybody together for one night of food, drink, and conversation," says Hipona. "Alumni and faculty get to reconnect, and students can see what life is like after dental school — they realize there is light at the end of the tunnel!"

Hipona has made a habit of pulling people together. While in dental school she launched the Pride-a-thon, a project that drew all students, faculty, and

administration together for a day to clean laboratory spaces. She also established the Legacy Project, a program that enabled students to gain elective credits for community service, which is now a formal part of the curriculum.

Continuing education courses available at the April 2013 Scientific Session at Alumni Weekend were organized by Hipona, session chair.

"This is the second year where our scientific session coincided with the other schools' courses," she says.

Although a mother of two with an active San Jose, Calif., practice she and Castro share, Hipona still finds time to be a tireless supporter of the school. "Without UCSF, I wouldn't have met my husband, nor would I have my livelihood!" she says. "I try to give back to the school in any way I can."

### POWER OF THE TOOTH FAIRY

Few professionally trained dentists were to be found in Addis Ababa, Ethiopia, where Hibret Hailu Benjamin, DDS '02, was born. So when a local lab technician appointed as a "dentist" pulled her tooth in a traumatic procedure, the then 9-year-old Benjamin vowed not to see another one go the same



Hibret Hailu Benjamin, DDS '02

way, and to someday find better care. That care came at age 13 when, during the worst of Ethiopia's civil war, Benjamin and her parents moved to San Francisco. One of her mother's first acts in their new home: make Benjamin a dentist appointment.

"That was when I met my mentor and 'tooth fairy,'" says Benjamin. "My new dentist didn't leave a dollar under my pillow; instead, she managed to keep all my teeth in my head." The experience convinced Benjamin to abandon plans to become a physician (her parents' hope) and pursue dentistry instead. "I knew there were many children and adults who also had experiences with poor dental care and whose endings weren't as lucky as mine. I wanted to be able to give back," she says.

When Benjamin discovered her dentist was a UCSF alumna, she knew where she wanted to get her degree. Despite language barriers, she worked hard academically and earned admission to the School of Dentistry. Four years after graduating, she discovered a way to honor her heroine, opening her own family practice in San Francisco named the Marina Tooth Fairy.

Benjamin devotes a great deal of time to learning new techniques

## Alumni Accoladesss

**Charles M. Fischer, DDS '68**, received the American College of Dentists (ACD) Awards Fellowship during the ACD's Annual Meeting and Convocation in San Francisco. The ACD is the oldest national honorary organization for dentists. Fellowship in the college is by invitation and based on demonstrated leadership and contribution to the dental profession and society. Only 3.5 percent of dentists are chosen to be fellows of the ACD.

**Denis P. Lynch, DDS '76, PhD**, 2009 recipient of the UCSF Dental Alumni Association Medal of Honor, was inducted into the Irish Education 100, which is awarded annually to the 100 most influential educators of Irish heritage in the United States.

The School of Dentistry congratulates Fischer and Lynch!



and technologies to better serve her patients. The mother of a young son, she also volunteered for four years on the board of directors of the San Francisco Dental Society. “UCSF prepared me to be the dentist I’ve always wanted to be,” Benjamin says, “one with excellent training and grounded ethics who gives and receives respect and gratitude equally with her patients.”



Tim Herman, DDS '88

## SERVING THE CITY, DENTISTRY-STYLE

A torrent of muddy water cascaded into his Roseville, Calif., office. “It was a mad dash to see what we

could save,” he says. Amid the muck, the Chamber of Commerce showed up with a small check to help with damages. Impressed, Herman joined the chamber. As a businessman growing a practice with fellow alumnus Richard Almassy, DDS '72, Herman was soon deeply involved. He served as chamber president in 2004, received the President’s Award in 2005, and was named Business Person of the Year in 2009.

His contributions have also extended to another passion: Roseville’s parks. The avid athlete, basketball coach, and swim team dad served on the Parks and Recreation Commission for 10 years. “I use the parks all the time, so it was just a good fit,” he explains. During that time the commission developed more than 30 parks.

Wanting to give back even more to the place he and his wife, Pam, have called home since 1988, he ran for – and won – a seat on the Roseville City Council in 2010. “This is a terrific place to live,” he notes. “I wasn’t running to fix anything but to put more emphasis on things I felt were important, especially downtown revitalization.”

Despite his civic engagement, Herman’s heart still lies with dentistry. He sees patients 35 hours a week in a practice he runs with four partners, including UCSF graduates Abdon Manaloto Jr., DDS '95, and Kayla Nguyen, DDS '02. “I’m a caregiver, so it’s a way for me to do what comes naturally,” he says.

could save,” he says. Amid the muck, the Chamber of Commerce showed up with a small check to help with damages. Impressed, Herman joined the chamber. As a businessman growing a practice with fellow alumnus Richard Almassy, DDS '72, Herman was soon deeply involved. He served as chamber president in 2004, received the President’s Award in 2005, and was named Business Person of the Year in 2009.

TOP: Alumnae catch up during the annual UCSF DAA and School of Dentistry alumni reception at Thirsty Bear during the ADA 2012 San Francisco Conference

BOTTOM: The School of Dentistry Class of 2016 is all smiles during the White Coat Ceremony.



## GET INVOLVED!

Join the Dental Alumni Association Executive Council

The DAA is looking for new Executive Council officers and committee members to join the current elite and dedicated group of alumni leading the DAA. As an officer or committee member, you’ll represent alumni, organize events, and provide general direction for the DAA. To learn more, please contact 415/476-3322 or [daa@support.ucsf.edu](mailto:daa@support.ucsf.edu).

Or Participate By:

- Serving as a mentor for current students
- Joining the UCSF School of Dentistry volunteer faculty program
- Attending alumni socials, receptions, events, and gatherings
- Participating in alumni panels

### UPCOMING EVENTS:

- CDA San Francisco Alumni Reception
- Thirsty Bear
- Saturday, August 17
- UCSF School of Dentistry Scholarship Hall of Fame Reception
- UCSF Parnassus
- Thursday, September 19
- 10th Annual UCSF DAA Bear Bash
- UCSF Faculty Alumni House
- October 2013

Support Your Alumni Association  
Pay your dues at [makegift.ucsf.edu/DAA](http://makegift.ucsf.edu/DAA).

### WHAT'S NEW WITH YOU?

Share your news by submitting a class note online at [ucsfalumni.org](http://ucsfalumni.org)

# School of Medicine

## ALUMNI PROFILES



Laura Stachel, MD '85 (right), with fellow health care workers in Nigeria

### LIGHT SWITCH

During her first week of studying maternal mortality in Nigeria, Laura Stachel, MD '85, MPH, resident alumna, watched a midwife deliver a baby in the stark darkness of a power outage.

“It was my introduction to practicing health care in a country with energy poverty,” she says. It was also the start of a new career. Stachel had already left a beloved OB/GYN practice because of a back injury and had planned on studying maternal health in the United States after her return from Africa. Yet she just couldn't shake the tragedies she witnessed over and over again while researching public health in northern Nigeria. A major factor contributing to the country's staggering maternal death rate – one in 23 women die

in childbirth – is the unpredictable electricity outages that rob health care providers of the means to call for support, run critical diagnostic tests, and treat patients with life-threatening complications.

“When electricity is lacking, midwives and doctors rely on kerosene lanterns and candles,” says Stachel. “If a patient is bleeding, you have to figure out the source. You can't do that with a candle – you can't direct its light. How do you sew up a tear or start an IV that way?”

In Nigerian cities, electricity is rationed and backup generators require expensive fuel that hospitals just don't have. Clinics in rural areas may have no electricity at all. So Stachel and her husband, Hal Aronson, PhD, devised a way to leverage one of Africa's abundant natural resources – sunlight – to secure a steady electricity supply for hospitals. Called the WE CARE Solar Suitcase, the luggage-sized device is a portable energy unit that provides medical workers with enough power for light, communication, computers, and medical appliances. In its most basic form, the suitcase powers lighting, headlamps, and cellphones; expanded models can power additional equipment, such as a blood bank refrigerator.

Stachel's nonprofit, WE CARE Solar, has delivered the Solar Suitcase to 25 countries so far. WE CARE just embarked on a three-year study in Uganda, where the device will be used in 200 health facilities. The World Health Organization in Eritrea has purchased 30, and in Sierra Leone,

the United Nations Population Fund obtained 42.

The response to the Solar Suitcase has been monumental. “The United Nations Foundation invited me to give a talk at Rio+20, the international summit on sustainable development,” says Stachel. Evidence of its success, however, has been largely qualitative to date. “Midwives tell us their work is easier, they no longer fear night duty, procedures are no longer delayed

until morning, and patients are no longer turned away for lack of light. Getting hard numbers has been more challenging,” she notes. “Many of the countries we work in give clinics less money for lower quality of care,” she says, so clinics are likely to underreport maternal deaths, making it difficult to quantify the full impact of the Solar Suitcase. As the device gains a toehold in more and more remote clinics, the success stories shared between midwives,

## Alumni Accolades

**A. Brent Eastman, MD '66, FACS, resident alumna**, a general, vascular, and trauma surgeon, was installed as the 93rd president of the American College of Surgeons, the largest organization of surgeons in the world. He is chief medical officer emeritus of Scripps Health in San Diego, the N. Paul Whittier Endowed Chair of Trauma at Scripps Memorial Hospital La Jolla, a clinical professor of surgery-trauma at UC San Diego, and president of the UCSF Naffziger Surgical Society.

**Richard Jackson, MD '73, resident alumna**, a pediatrician, professor, and chair of the Department of Environmental Health Sciences at UCLA's Fielding School of Public Health, received the prestigious Heinz Award. He was honored for his environmental and public health research, which has sparked a national conversation about the relationship between the physical design of our communities and rising health risks such as asthma, cancer, obesity, diabetes, and depression.

**David Horne, MD '00, MPH**, assistant professor in pulmonary and critical care medicine at the University of Washington, was awarded an American Thoracic Society Foundation/Merck Unrestricted Grant. His project studies associations between genetic variability and tuberculosis (TB) in South African infants, and how this variability affects the responsiveness of the TB vaccine for children, BCG. Horne hopes this project will lead to mechanisms for improving the efficacy of new TB vaccines.





Barbara Breger, MD '63, (second from right) with some of her classmates at a Class of '63 reunion

mothers, fathers, and daughters are likely to be bolstered by statistical evidence. Although Stachel has strayed far from home in her new incarnation, she may just energize entire continents, saving whole generations of women along the way.

## CLASS TIES

Harold Harper, MD, then dean of the UCSF Graduate Division, wrote a letter for the class of 1963's senior yearbook that is as resonant today as it was then. As a physician, he wrote, "you are there for the treatment of other human beings, and you must never forget your humanitarian traditions and requirements."

Robert Sherins, MD '63, and Barbara Breger, MD '63, took these words to heart – not just as practicing ophthalmologists, but also as people inspired to create connections with their classmates. Breger built relationships early and often while still in medical school. There were only 11 women in the class, and she helped make sure they met weekly for lunch. "There were few women in medical school at that time, and we were underappreciated," she recalls. "The lunches made us realize that, although we all had our own stories, we all were very interested in medicine and needed to support each other to continue on." After co-editing the

senior yearbook, Breger doggedly followed all her classmates over the decades, the hard way – through typewritten newsletters dating back to 1964 – asking for their whereabouts and whatabouts.

Sherins followed in Breger's footsteps and organized several mini-reunions in Northern and Southern California. With his Internet and



Robert Sherins, MD '63, as a medical student

desktop publishing skills, he created an online newsletter in 2009. It's rich with the pictures and anecdotes that have animated and defined the lives of

his fellow medical students through the years.

The secret to the online newsletter's success, according to Sherins, is his time spent cajoling colleagues on the phone. "In the course of calling all of my classmates, I've often heard them say, 'I don't do important things like you do.'" His reply is reminiscent of the words of Dean Harper: "But who is more important in the grand scheme of things – the Nobel laureate, the academic scholar who invented lasers, or the general practitioner in a rural community who holds the hand of his or her dying patients?"

Sherins asks his colleagues to read the 48 issues and decide for themselves. "I've gotten people to come out of oblivion and write a story so that they don't feel like a small fish in a small pond," he says. If they can't figure out how to scan a picture, Sherins has them send it in its frame and returns it the next day. If they can no longer write, Sherins takes dictation.

Come April, the decades-long tag-team efforts of Breger and Sherins will culminate in a 50th reunion celebration for their class at UCSF Alumni Weekend. As this magazine goes to press, the two have motivated more than 84 percent of the living members to attend, a record for the institution. The Class of '63 is so connected, it has five events of its own planned. Following the reunion, each classmate will receive a 300-page electronic copy of the memory book Sherins has compiled with Breger's input, a tribute to their humanity, personal and professional, honed over the past 50 years.

## GET INVOLVED!

Join Our Online Community – [ucsfalumni.org](http://ucsfalumni.org)

Our website is continually being updated with new features to help you stay connected with UCSF and your fellow alumni. Drop on by and leave a class note, catch up with classmates, or just explore.

Host an Alumni Event in Your Region

We're always looking for locations where we can host alumni gatherings. If you have access to an event space or would like to host an event in your home, please contact us, and we'll help set it up.

Volunteer for a Reunion Committee

Let us help you celebrate your milestone graduation anniversaries by planning a class reunion for Alumni Weekend. It takes dedicated volunteers with a variety of skills to make a reunion a success. Join the fun today!

Join the MAA Board of Directors

The Medical Alumni Association Board of Directors hosts Alumni Weekend, chooses the Alumnus of the Year, plans fun social events for alumni and students (such as the New Student Barbeque), and supplies white coats for the incoming first-year students. We meet four times a year and have some great plans in store for 2013. Come be part of this special group!

**WHAT'S NEW WITH YOU?**  
Share your news by submitting a class note online at [ucsfalumni.org](http://ucsfalumni.org)

# School of Nursing

## ALUMNI PROFILES

### THE NURSE SCIENTIST

In the 1980s, Ann Knebel, RN, PhD '90, the new deputy director of the National Institute of Nursing Research (NINR), was a registered nurse working in an intensive care unit in an Indiana hospital when she made a decision – she would start to figure out how to ease the intense physical and emotional stress of patients on ventilators.



Ann Knebel, RN, PhD '90

“When someone has a breathing tube, they can’t talk, and they feel extreme discomfort in their throat,” says Knebel, who earned her PhD from the UCSF School of Nursing in 1990. “While breathing machines can be critically important for saving lives, one of the consequences for patients can be feelings of disempowerment.”

Unfortunately, solutions to her concerns were hard to come by. The available literature was sparse. “The

only way to answer these clinical questions was to get involved in research,” she says.

Knebel’s curiosity led her to an MS program at the University of Evansville, Ind., then to UCSF. Her early eagerness to improve care for patients on ventilators launched a career as a nurse scientist that has taken her to the top levels of US government public health and research, notably in disaster preparedness and the emerging science of preparing for mass gatherings.

Providing aid to first responders at Ground Zero following the 9/11 terrorist attacks was a turning point in Knebel’s career. “It gave me an incredible opportunity to apply the skills I learned as a nurse and a scientist in a different way, during a critical time in our country’s history,” she says. Knebel then worked with recovery efforts after Hurricane Katrina and helped coordinate the US response to the 2010 earthquake in Haiti.

As deputy director for the Office of Preparedness Planning, Office of the Assistant Secretary for Preparedness and Response, Knebel helped the Greek government to prepare for the 2004 Olympics and New York City to develop bioterrorism plans. She also traveled to Saudi Arabia as an international consultant, learning about that country’s expertise in marshaling transportation, health, food safety, sanitation, and other resources to host the annual Hajj pilgrimage.

Knebel credits the UCSF School of Nursing’s focus on research and interdisciplinary coursework with

nurturing her career as a nurse scientist – a hands-on practitioner who applies scientific inquiry and theory to improving patient care. Now at the NINR, part of the National Institutes of Health, she supports the research of other nurse scientists.

Knebel says nurses, the largest cohort of health providers in the nation, can lead reform in our health care system. “Our science helps to provide the foundation for care that is effective, affordable, and of the highest quality.”

### CONNECTING RESEARCH TO CLINICAL CARE

In the role of chief nurse researcher at UCSF Medical Center, Daphne Stannard, RN, PhD '97, played a major part in the medical center’s 2012 Magnet recognition from the American Nurses Credentialing Center. With the recent expansion of her role – she’s just been named director of the UCSF Joanna Briggs Institute center, which provides evidence-based resources that promote and support nursing best practices – her sphere of influence has grown larger still.

Stannard is uniquely qualified to straddle the worlds of academia and clinical care. She began her UCSF career in 1989 as a staff nurse in the medical-surgical ICU, then leaped at the opportunity to pursue a master’s degree at the UCSF School of Nursing. It was there she crossed paths with Patricia Benner, who would sponsor Stannard when she entered the School of Nursing’s doctoral program in 1991.

Eventually Stannard became one of two co-investigators on a Benner



Daphne Stannard, RN, PhD '97

project to help nurses and nurse-educators connect background science and technology with the clinical and ethical judgments that expert nurses make when caring for patients and families. The work yielded a book, an article, and a digital educational tool still in use today.

After completing her doctorate in 1997, Stannard spent a decade in academia at UCSF and San Francisco State University, holding faculty positions in their schools of nursing. Yet in 2007, she decided to return to full-time clinical practice at UCSF Medical Center, ultimately moving into the position of chief nurse researcher, where she personifies the medical center’s focus on fostering evidence-based practice.

At the medical center, Stannard currently oversees 11 active research projects, with three others in analysis. This work, and her alliance with the School of Nursing, is critical to meeting a key standard of the Magnet recognition program: fostering new knowledge, innovation, and improvements.

“My greatest joy is to work with direct care nurses, who have good clinical questions worth pursuing, grounded at the level of the patient and family,” says Stannard. “That’s how UCSF links education,





clinical care, and research to foster innovations that really push patient and family care to the next level. It's made me a better scientist, helped us become recognized as a Magnet facility, and created a true center of nursing excellence."

## FOSTERING LEADERSHIP FOR CHANGE

Mary Louise Fleming, RN, PhD '07, lives by the proverb "If you want to go fast, go alone. If you want to go far, go with others."

Building collaborations to improve patient care has been a driving force in her career as a public health nurse and administrator, an expert in gerontology, a UCSF School of Nursing doctoral graduate, and the school's vice chair and academic coordinator in the Department of Community Health Systems. Fleming's other passion has been to encourage the development of leadership skills in others so they too can become change agents.

Those passions came together as Fleming and colleagues at the school and UCSF's Center for Health Professions established the innovative new Masters of Science in Healthcare Administration and

Interprofessional Leadership (MS-HAIL) degree.

Launching in winter 2014, the one-year program welcomes health professionals across disciplines. Much of the coursework is online, allowing students to learn while keeping their jobs. The approach has dual benefits: it aligns with Chancellor Susan Desmond-Hellmann's support for interprofessional and online learning, and it increases the number of professionals prepared to lead needed changes in health care.

"This program is a work of the heart, in service of a new direction in health care education," says Fleming. "It represents a change in the way faculty will work together and with students. It's wonderful to contribute to something so groundbreaking at this stage in my career. Developing the MS-HAIL program has been a fantastic, collective, campus-wide effort."

After arriving in San Francisco in 1980, the Alabama native built a distinguished career with the San Francisco Department of Public Health. Her work spanned administrative roles at San Francisco General Hospital, the Mental Health Rehabilitation Center, and Laguna Honda Hospital, a long-term care facility for the elderly.

As the hospital's director of nursing, Fleming worked with nursing school faculty in the UCSF Hartford Center for Geriatric Nursing Excellence on a grant for RNs to pursue advanced degrees as nurse practitioners and clinical specialists. The experience prompted Fleming to come to



Mary Louise Fleming, RN, PhD '07

UCSF herself, to earn a PhD in 2007.

Fleming is proud that the MS-HAIL program responds to calls for graduate education to move beyond discipline-based silos and incorporate interprofessional competencies. The curriculum will prepare health care leaders from all disciplines together. This collaboration is necessary because, says Fleming, "Today's complex environment demands that health care leaders interact with each other in new ways to ensure that care is safe and effective, patients are satisfied, and members of the workforce develop and thrive in their organizations."

## GET INVOLVED!

Join Our Online Community – [ucsfalumni.org](http://ucsfalumni.org)

Visit our online community to access the alumni directory, job exclusives on LinkedIn, friendships on Facebook, photos on Flickr – and more.

### Stay Connected

Keep in touch with the school through the monthly online *Alumni eNews* and *Science of Caring* publications. If you're not receiving them and would like to, please send your email address to Lisa Finkelstein at [lfinkelstein@support.ucsf.edu](mailto:lfinkelstein@support.ucsf.edu).

### Volunteer as a Preceptor

The need for preceptors in the greater Bay Area is strong and year-round. Please share your expertise with the next generation of advanced practice nurses. To participate, email your name, email address, name of employer, position, specialty, and graduation year to Linda Sawyer at [linda.sawyer@nursing.ucsf.edu](mailto:linda.sawyer@nursing.ucsf.edu).

### Serve as a Mentor

Through the Career Alumni Network, the NAA strives to connect current students and members at any stage of their career with mentors who can provide career coaching. Learn more from Kathleen Cassidy at [kathleen.cassidy@ucsf.edu](mailto:kathleen.cassidy@ucsf.edu).

### Attend an Event

Events for alumni with students, faculty, and special guests are held throughout the year. Learn more and RSVP for events at [ucsfalumni.org](http://ucsfalumni.org).



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# School of Pharmacy

## ALUMNI PROFILES

### GOING GLOBAL

Many School of Pharmacy alumni are dedicated to fulfilling UCSF's mission of advancing health worldwide. Here are four striving to better lives everywhere from Africa to Peru.

### CROSS-TRAINER

Without a job of her own, Rakhi Karwa, PharmD '05, moved with her pharmacist husband to Eldoret, Kenya, in 2011. Within a very short time, however, she was helping to transform pharmacy education and practice in the country.



Rakhi Karwa, PharmD '05, (fourth from left) with pharmacy colleagues at Moi University

Through the program Academic Model Providing Access to Healthcare (AMPATH), Karwa and her colleagues established a residency program for American and Kenyan pharmacists to provide direct care for the country's citizens and tackle barriers arising from limited resources.

Among the largest health care partnerships in sub-Saharan Africa, AMPATH brings Eldoret's Moi University and Moi Teaching and

Referral Hospital together with a consortium of North American medical and health science schools. Karwa serves as an assistant professor at one of those schools, Purdue University College of Pharmacy.

AMPATH takes a holistic approach to patient care by offering services beyond the traditional boundaries of health care delivery. Pharmacovigilance, or drug safety, is a prime focus area for the program's pharmacy team.

"There are many cultural differences between American and Kenyan patients that strongly impact care delivery," Karwa explains. "Kenyans are very resilient and don't typically complain, as they want their health care providers to believe they're doing well. This makes it difficult to know if a prescribed drug is having its desired effect or, even worse, an undesired side effect."

In keeping with AMPATH's holistic perspective, the care Karwa and the residents give their patients extends outside of hospital walls. "Our program tries to expose the often forgotten social determinants of health," she says. "We train providers to do whatever is necessary to help people feel better – whether it's knitting with a patient, playing soccer with vulnerable street children, or bringing a banana to someone who is malnourished. These acts are just as important [as medical care] to overall well-being.

"Personally, these interactions help me stay grounded," Karwa adds, "and show me how little things can dramatically impact an

entire community, as well as future generations of providers."

### MALARIA SWATTER

As a college student, Larry Fleckenstein, PharmD '72, read a book about discovering new drugs in the tropics. Inspiration struck, and kept on striking: for 40 years, he's been developing therapies against parasitic diseases, particularly malaria.

Fleckenstein launched his quest to quell the disease when a fellow alumnus recruited him to Walter Reed Army Institute of Research outside Washington, DC, where he helped develop two antimalarial drugs – mefloquine, commonly known by its brand name, Lariam, and halofantrine.



Larry Fleckenstein, PharmD '72

Although mefloquine has been considered one of the gold standards for malaria treatment since it was introduced in the 1970s, the disease has become increasingly resistant to the drug over the years. "There's always the concern it will

lose its effectiveness, and if that's the case, we need a replacement," Fleckenstein explains.

At the urging of the World Health Organization, in partnership with Medicines for Malaria and Shin Poong, a South Korean pharmaceutical company, Fleckenstein led a drug development project that resulted in Pyramax, a new malaria medication. His lab at the University of Iowa, where he currently serves as a professor, studied the pharmacokinetics of the treatment to help determine its dosing regimen.

"In clinical studies, Pyramax has worked against all the drug-resistant malaria strains we've tested, so it's really promising," he says.

Approved by the European Medicines Agency, the equivalent of the US Food and Drug Administration, Pyramax is now being registered for use in Southeast Asia and soon in Africa. Improving on traditional antimalarial drugs, Pyramax cures acute strains of malaria in one dose per day for three days, rather than the typical two doses per day.

"There are a lot of challenges in this field," says Fleckenstein. "But one of the things I find rewarding is that my pharmacokinetics background allows me to make a real contribution. We all want to work on projects that make a difference, and there's no question that malaria affects millions of people."

### CHALLENGE SEEKER

Joyce Yu-Chia Lee, PharmD '06, was born in Taiwan, moved to Japan at age 8, and settled





LEFT: Joyce Yu-Chia Lee, PharmD '06

RIGHT: Kay Yamagata, (right), PharmD '64, with a fellow volunteer in Peru



in Sacramento at age 13. After receiving her PharmD degree and completing her residency, Lee thought she'd practice in the United States and return to Asia as a tourist someday – until the National University of Singapore came knocking.

The university recruited her to set up ambulatory care services in polyclinics – government-subsidized clinics offering outpatient medical care and health screening for chronic diseases – geared toward patients with uncontrolled diabetes. Eleven percent of Singaporeans have diabetes, compared to 8 percent of Americans. Thanks to Lee, an assistant professor, patients with diabetes are now treated at six polyclinics throughout Singapore. She has also expanded services to one tertiary care hospital to help heart patients at risk for diabetes.

In another first, Lee is implementing the Sweet Spot Project, a program she designed that allows patients who can't make it to a polyclinic or hospital to visit any community pharmacy for diabetes and cholesterol testing, and counseling on medications. Lee trains the pharmacists to set treatment goals and serve as a bridge between the patient and doctor.

Through these innovations, Lee is hoping to show that patients with diabetes can benefit from a variety of experts, including pharmacists. "We're trying to transition Singaporean pharmacists out of the traditional model of dispensing

drugs into doing more clinical work," she says.

With that vision in mind, Lee helped establish the university's PharmD and residency program. Until 2009, the university offered only a bachelor's of science in pharmacy. "With the doctoral program, we hope to expedite learning and provide advanced clinical training to prepare students for the evolving role of pharmacists, similar to programs in the US," she notes.

Lee credits UCSF for her ability to take on such big tasks: "At UCSF, they teach you to be not just a pharmacist, but a pharmacist who can make a difference."

## ACCIDENTAL VOLUNTEER

Kay Yamagata, PharmD '64, never planned to become a global health care missionary, but as a volunteer pharmacist, she's traveled the world – with a little help from her friends.

It started when a friend introduced Yamagata to the San Francisco Bay Area Disaster Medical Assistance Team (DMAT), which is one of the first to arrive at the scene of major disasters. In 2005, Yamagata's DMAT team went to New Orleans in the wake of Hurricane Katrina.

The same year, Yamagata discovered Doctor to Doctor, a nonprofit that provides assistance to medical professionals in underserved places. Drawing on her experience as pharmacist-in-charge for a hospital that provides psychiatric care – Alta Bates Summit Medical Center in Berkeley, Calif. – she traveled to the Philippines, Myanmar, and

Laos, lecturing to physicians about psychiatric medications.

Last year, after Yamagata retired from Alta Bates, a friend from DMAT encouraged her to volunteer for a trip to Peru with Holy Rosary International Missions.

"In small towns outside of Lima, we saw all kinds of people who have never received medical treatment," she says. "A lot of them were undernourished – a big portion of their diet is starches and they don't eat many vegetables – and some were iron-deficient. We distributed multivitamins to every patient to improve their nutrition, even if only for the short term."

Yamagata found the Peru trip so rewarding that when the same friend suggested she go to Cambodia with the Cambodian Health Professionals Association of America, she needed little convincing. In the town of Takeo, Yamagata joined 200 other health professionals, students, and volunteers in caring for nearly 10,000 patients, seeing all of the patients in various medical, surgical, and dental clinics during just one week.

Yamagata doesn't know exactly what's next, but says the camaraderie among the volunteers – and the faces of the patients – make all of her experiences memorable and heartwarming. She's counting on the day another friend calls and says, "Come along with us!"

## GET INVOLVED!

Join Our Online Community – [ucsfalumni.org](http://ucsfalumni.org)

Visit our one-stop shop for alumni news, event information and registration, message boards, and connecting with classmates.

### Volunteer for a Reunion Committee

Let us help you celebrate your milestone graduation anniversaries by planning a class reunion. Each year at UCSF Alumni Weekend, classes in milestone anniversary years (5th, 10th, 15th, etc.) gather to reconnect. It takes dedicated volunteers with a variety of skills to make a reunion a success!

### Host an Alumni Event in Your Region

The PAA recently hosted alumni gatherings in Honolulu, Sacramento, Irvine, Livermore, San Anselmo, Las Vegas, and San Francisco. We look forward to visiting a city near you soon! If you have an idea for an event in your region, please email [udarpaa@support.ucsf.edu](mailto:udarpaa@support.ucsf.edu).

### Support Our Students

The PAA has a number of different programs to help connect students with alumni to enrich their UCSF experience. From fun social events to professional networking opportunities, you can make a difference in our students' professional futures.

To learn more about any of these opportunities, please email [udarpaa@support.ucsf.edu](mailto:udarpaa@support.ucsf.edu).

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# Graduate Division

## PHD AND POSTDOCTORAL ALUMNI

### UPCOMING EVENTS

#### Receptions at National Meetings

##### November 9–13

Society for Neuroscience, San Diego

##### November 10–14

American Association of Pharmaceutical Scientists, San Antonio

##### November 20–24

American Anthropological Association, Chicago

##### December 14–18

American Society for Cell Biology, New Orleans

##### January 2014

JP Morgan Healthcare Conference, San Francisco

##### March 18–22, 2014

American Society for Clinical Pharmacology and Therapeutics, Atlanta

##### Spring 2014

Bio International Convention, San Diego

#### UCSF Campus Activities

##### Fall 2013

GS-ICEbreaker

##### Spring 2014

Alumni Weekend 2014

##### May 2014

UCSF Graduation



Carol Gloff, PhD '84

### ALUMNI PROFILE: BLENDING SCIENCE AND SERVICE

As a small-town girl in rural New York, Carol Gloff, PhD '84, was encouraged by teachers who sensed her potential – and how right they were. After becoming first in her family to attend college, Gloff went on to earn a doctorate, jump into the fledgling biotech industry, carve out a successful career there, then start her own consulting business. All along the way, she still found time to give back.

The childhood bookworm credits the teachers in her town's single K-12 school with opening her eyes to the possibility of higher education. "I was a good student, and they knew there would be opportunities for me," she explains. With the help of scholarships, a work study job, loans, and drive,

Gloff graduated from the State University of New York at Buffalo with a degree in pharmacy.

But that was just the beginning. While working at a pharmaceutical company, she grew even more fascinated with pharmacokinetics. The idea of pursuing graduate studies began to percolate, with the UCSF Graduate Division's well regarded program on her radar.

At UCSF, Gloff landed in the lab of Leslie Benet, PhD '65, one of the world's foremost experts in the field. "I was really fortunate," she says. "He's a wonderful professor and person, and an excellent role model for his students. He taught me many things about pharmacokinetics and being a good scientist."

A newly minted PhD, Gloff chose to step into the unknown – the infant field of biotech. She joined a Bay Area start-up with 20 employees. "I had a great time," she says. "I got to wear lots of hats and learned a tremendous amount." The company was trying to gain approval to market two drugs, and Gloff discovered she liked fielding questions from the FDA.

When an opportunity arose to start a regulatory affairs department at a Boston-area biotech company, she grabbed it, followed by the role of vice president and chief regulatory officer at another biotech firm, where she supervised a staff of 30. Her career took a new turn when she decided to build her consulting business. Sixteen years later, Gloff couldn't be happier. "I like the variety of working on projects for different clients and the

flexibility it gives me to do other things," she says.

She has quite a list. For 16 years, Gloff taught a class in regulatory affairs at Boston University. Eight years ago, she was elected to the Board of Selectmen of Natick, her Massachusetts town. "There hadn't been a woman on the board in 19 years," she says of her foray into local government. "I feel really lucky to live in a nice community, and I wanted to contribute." She's now in her third term.

Gloff also joined SUNY Buffalo's alumni association board several years ago. As a volunteer, she likes getting things done, which caught the board's attention: they asked her to serve as president, the first ever to live outside western New

### Valenzuela Named First-Ever Graduate Division Distinguished Alumnus of the Year



PHOTOS: COURTESY OF CAROL GLOFF AND PABLO VALENZUELA



TOP: Kedan Lin, PhD '00, and Mark Dresser, PhD '00, at UCSF Alumni Weekend 2012

BOTTOM: Alumni and Postdoc Speed Mentoring event, Genentech Hall

York, starting in 2013. “There are more than 200,000 living alumni, and many live in other states. I can help show them they can still be involved,” she says.

Finally, her volunteering comes full circle to the Friends of the Library, a place that helped a small-town girl pursue a life of science. “I’m a big believer in libraries,” she says. “The local library had a huge impact on my life when I was a kid.”



**Pablo Valenzuela, PhD**, has received the inaugural UCSF Graduate Division Distinguished Alumnus of the Year Award. This award honors Valenzuela for his service to UCSF, his home country of Chile, and the greater scientific community through his individual discoveries and leadership in creating organizations and businesses that have made a lasting impact on our world.

A UCSF postdoctoral scholar alumnus and former faculty member, Valenzuela is known for his work in studying hepatic viruses and for inventing the recombinant vaccine against the Hepatitis B virus. He currently serves as co-founder and scientific director of the Fundación Ciencia para la Vida, a nonprofit aimed at improving economic development through the biological sciences in Santiago, Chile. In addition, Valenzuela founded GrupoBios S.A., the first biotechnology company in Chile, and together with William J. Rutter, PhD, and Edward Penhoet, PhD, founded Chiron Corporation in 1981, which a decade later became the second largest biotechnology company in the world. Valenzuela earned his PhD at Northwestern University and is a member of the Chilean Academy of Sciences. The Distinguished Alumnus of the Year Award was presented as part of UCSF Alumni Weekend in April 2013.

PHOTOS: JEANNINE CUEVAS, UCSF

## Career Networking

Alumni from UCSF’s graduate programs go on to become researchers, educators, and innovators in today’s most interesting fields. We’re here to help you get connected!

### Online Networking

Search for fellow alumni through the online directory at [ucsfalumni.org](http://ucsfalumni.org) or connect on the UCSF LinkedIn group. Thousands of alumni have already joined.

### UCSF Office of Career and Professional Development

Get networking tips, share job openings, or volunteer to mentor students and postdocs. For more information, visit [career.ucsf.edu](http://career.ucsf.edu).

### UCSF Receptions at National Professional Meetings

UCSF hosts receptions at national professional meetings across the country, where you can reconnect with UCSF faculty and network with others in your field. Visit [ucsfalumni.org/events](http://ucsfalumni.org/events) to see what’s coming up.

### Mentoring Events

Throughout the year, UCSF offers opportunities for alumni to mentor students and postdocs, including GS-ICEbreaker and Postdoc Speed Mentoring. To get involved, email [gradalumni@support.ucsf.edu](mailto:gradalumni@support.ucsf.edu).

### UCSF Profiles

Visit [profiles.ucsf.edu](http://profiles.ucsf.edu) to search for experts, collaborators, and mentors in research at UCSF.

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Visit our new online community to access the alumni directory, share your updates, and check out news and events from UCSF.

### Stay Connected

Keep in touch with the latest in research, faculty accomplishments, and alumni honors through the alumni eNewsletter. If you’re not receiving the eNews and would like to, please send your preferred email address to [gradalumni@support.ucsf.edu](mailto:gradalumni@support.ucsf.edu).

### Volunteer

As a graduate or former postdoc, you’re automatically enrolled as a member of the Graduate Division Alumni Association (GDAA). To apply to join the GDAA Board of Directors, email [gradalumni@support.ucsf.edu](mailto:gradalumni@support.ucsf.edu). New members are elected in May.

### Attend an Event

Alumni events with faculty, students and postdocs, and special guests are held throughout the year, including UCSF receptions at national meetings across the country. Learn more and RSVP for events at [www.ucsfalumni.org](http://www.ucsfalumni.org).

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## The Oak Tree | Ansel Adams

*Sunset City, Sierra Foothills, 1962*

*Gift to UCSF Fresno from the Ansel Adams Family*

“To this day and forever, the oak tree stands as a symbol of strength and endurance, and remains a silent tribute to the natural beauty that abounds in the San Joaquin Valley for all to enjoy,” says Michael Adams, MD, son of the famed photographer and environmentalist Ansel Adams, and UCSF Fresno Medical Education Program resident alumnus.

Like the mighty oak, the Fresno program stands as a strong and integral part of life in the valley. For almost 40 years, it has been training and educating residents, fellows, and students, conducting research, and delivering care in a region where doctors are in short supply and health care needs are great. Growing valley doctors forms its heart – more than one-third of the 2,500 residents trained now call the valley home.





“It’s exciting to watch the new hospital buildings take shape, knowing that children, women, and cancer patients will receive world-class care in our own backyard.”

—Jackie and Carl Kuhn, DDS '68

## LEAVE A BEQUEST MAKE A DIFFERENCE

“We give to UCSF because UCSF has given so much to both of us,” say Jackie and Carl Kuhn. For Carl, DDS '68, the School of Dentistry provided an exceptional education that launched his successful path as an orthodontist. For Jackie, the Medical Center offered a position that blossomed into a rewarding 30-year career, from which she retired as director of finance. For both, UCSF brought lifelong friends and irreplaceable memories.

The Kuhns have chosen to leave a bequest that will support UCSF Medical Center at Mission Bay, opening in 2015. The Jacqueline and Carl Kuhn Concierge Services Room at Mission Bay will be named in honor of their generous commitment.

For more information on how to support UCSF through a bequest or life income plan, please contact the UCSF Office of Gift & Endowment Planning:  
415/476-1475 • [support.ucsf.edu/trustsandbequests](http://support.ucsf.edu/trustsandbequests)





University of California  
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**Medical Sciences Building:**  
Education center for students on a  
mission to serve. *page 20*

**Medical Center and Benioff Children's Hospital:**  
Where Nancy Ascher and other top  
surgeons save lives. *page 30*

**Ray and Dagmar Dolby  
Regeneration Medicine Building:**  
Stem cell science launch pad. *page 12*



PHOTO: BRUCE DAMONITE/COURTESY OF FAARAE VINOLY ARCHITECTS