The Promise of Berkeley

Alumni, parents, and friends shaping the future of Cal

Tiny things, big impact

Remembering Barclay Simpson

Far-reaching gifts
Berkeley shines in worldwide rankings

*Times Higher Education*, the United Kingdom’s leading educational news publication, has once again named Berkeley one of the “elite six” among 10,000 universities worldwide. This is the fifth year of the reputation rankings — and Berkeley has placed in the “elite six” every time, along with Harvard, MIT, Cambridge, Oxford, and Stanford.

promise.berkeley.edu/rankings
$,1 million for war crimes work

In recognition of its investigations and research on war crimes and human rights abuses in more than a dozen countries, as well as its recent work on wartime sexual violence, the Human Rights Center at Berkeley Law was one of nine nonprofits worldwide to receive a $1 million award from the MacArthur Foundation.

promise.berkeley.edu/macei

A RADICAL initiative

Cal Performances has launched Berkeley RADICAL, an ambitious program that will commission visiting artists to create major new works on campus in collaboration with the university’s intellectual community. The resulting artistic process and contextual research will be disseminated online. Famed conductor Gustavo Dudamel will inaugurate the initiative.

promise.berkeley.edu/radical

Got a research quandary?

Until recently, if you were a small business or government agency with a research issue in need of investigation, there was no formal way to elicit the help of Berkeley students and faculty. Karen Andrade, a Ph.D. student in environmental science, policy, and management, has started the UC Berkeley Science Shop to help make those connections easier.

promise.berkeley.edu/shop

Nobel laureate dies at 99

Charles Townes, a professor emeritus of physics who shared the 1964 Nobel Prize in Physics for the invention of the laser and later pioneered its use in astronomy, died in January at age 99. He was a central figure at the Space Sciences Laboratory for almost 50 years.

promise.berkeley.edu/townes

Charles Townes
In 2005, Jill Banfield, a professor of earth and planetary science, stumbled upon a mystery — strange segments of bacterial DNA that were palindromes, base pairs that read the same way in both directions. While she wasn’t the first person to notice the segments, she met with Jennifer Doudna, professor of molecular and cell biology, and together they wondered: Did these tiny riddles serve a function, or were they “junk DNA” with no apparent use?

That conversation eventually led Doudna to a 2012 discovery that, in less than three years, has sparked a remarkable revolution in genetics. (Story on page 4.) One lesson has become clear — the often unseen, overlooked, or seemingly innocuous little things can be crucial.

In this section, we share stories of little things that make a big impact. A minute salamander with a lot to say about global warming. Stardust grains that might shed light on the birth of the solar system. Tiny houses that solve critical cost, space, and energy concerns.

In a place as big as Berkeley, it’s often the little things that matter.
The tiniest pair of scissors you’ll never see is shredding the time it takes for researchers to explore new gene therapies — and striking a significant blow in the fight against genetic disease.

In 2012, Jennifer Doudna, who holds the Li Ka Shing Chancellor’s Chair in Biomedical and Health Sciences and is a Howard Hughes Medical Institute investigator at Berkeley, co-invented a revolutionary DNA-editing technology with Emmanuelle Charpentier, now at Germany’s Helmholtz Centre for Infection Research. These “scissors,” called CRISPR/Cas9, can precisely target and cut DNA to insert genes into cells, significantly simplifying a once pricey, complex procedure for modifying defective genes in a lab.

“We now have a very easy, very fast, and very efficient technique for rewriting the genome, which allows us to do experiments that have been impossible before,” says Doudna. Animal strains that mimic a human disease can be developed in weeks — versus the year or more that it used to take — in order to test new therapies. The new technology is also casting light on how specific genes function.

An explosion of possibility

This tiny tool in the arsenal of genetic research has burst in popularity. Investigators are using Cas9 to explore the genetic roots of problems as diverse as sickle-cell anemia, diabetes, cystic fibrosis, AIDS, and depression. Others are adapting it to produce biofuels and pest- and drought-resistant wheat. And it has led to at least three startups, several international meetings, and more than 125 papers.

Here at home, the groundbreaking work has spawned the Innovative Genomics Initiative (IGI), a bold new partnership with UC San Francisco
that launched in 2014. It is led by Doudna and supported by a $10 million gift from the Li Ka Shing Foundation to establish the Li Ka Shing Center for Genomic Engineering and a faculty chair. Industry collaborators and startup funds from both universities also support IGI. The new hub is dedicated to expanding the research and technology in both the academic and commercial communities.

“It is a great privilege for my foundation to engage with two world-class public institutions in this quest for the holy grail to fight genetic diseases,” says foundation chairman Li Ka-shing.

Praise and caution

Awards for Doudna’s breakthrough discovery are stacking up quickly. Last February she received the Lurie Prize in the Biomedical Sciences from the Foundation for the National Institutes of Health. In November she won the 2015 Breakthrough Prize in Life Sciences, which included a $3 million award. And in December, she was one of three Berkeley professors to be named a fellow of the National Academy of Inventors.

But Doudna is also sounding an alarm. She and 17 leading biologists recently wrote an opinion piece in Science that urges scientists to pull back the reins on the technology and engage in challenging but meaningful conversations that will help us understand its safety and surrounding issues. Curing diseases is one thing, but enhancing qualities such as beauty and intelligence — or making changes that would be passed on to future generations — raise serious ethical questions. Their thoughtful plea has caught international media attention.
Many of us own meaningful objects — a handmade quilt, pocket watch, or fragile photograph — that evoke memories of our familial past. Similarly, museums are veritable treasure chests that tell the story of life on Earth over time, and it’s up to scientists to mine these objects for clues to our past and future.

The Berkeley Natural History Museums (BNHM) is a consortium of seven museums and nine field stations offering education and research programs that are rooted in a formidable collection of more than 12 million specimens, photographs, field notes, and other objects. In addition to traditional museum activities, BNHM researchers are using the collections in massive projects — often multidisciplinary, multi-institutional, and global in scope — to unravel big mysteries. Understanding evolution. Protecting biological diversity. Forecasting how organisms and environments will adapt to climate change. Below are just a few examples of single specimens or projects that can lead to grander discoveries.

FOSSILS SOUND THE ALARM — The iconically beautiful ammonite, a sea creature that inhabited a horn-like coiled shell, survived three mass extinctions before meeting its final fate with the dinosaurs at the end of the Cretaceous Period 65 million years ago. These and other fossils curated by the University of California Museum of Paleontology allow scientists to travel back in time to study how past periods of global change, in which the Earth and all of its processes underwent dramatic, unalterable shifts, affected life. Why should that matter? Because hindsight is a powerful tool in helping scientists and policymakers respond to what’s down the road. While history has proven that change is inevitable — five mass extinctions have occurred so far —
today’s changes are happening at a far faster clip, heading toward what some are calling the sixth mass extinction. Digging into the fossils will lead to stronger predictive models on which species might die off, move, or adapt.

ADD WATER AND WATCH IT GROW — Mosses are easy to miss with their dainty size, yet they imbue our yards and forests with a soft, green woolliness that borders on magical. Dating back to the dawn of land plants, mosses and their bryophyte cousins are some of nature’s true survivors. While most plants die without water, mosses dry up completely in meager times, then spring back to life at the first hint of rain, a trait called desiccation tolerance. Brent Mishler, professor of integrative biology and director of the University and Jepson Herbaria, studies how this works. Understanding the molecular mechanisms that enable mosses to adapt to dehydration, he says, could have greater implications for other plants that must survive on increasingly drier lands. It could also offer new strategies for improving how major crops tolerate a deficit of water — potentially elevating moss in the drought and hunger debate.

SALAMANDERS AND A WARMING WORLD — In the cloud forests of Costa Rica, hidden in tangled moss balls that dangle from the canopy, lives a minute salamander whose hatchlings measure a mere 8 millimeters long. While only
a handful of adults and eggs have ever been found, this species (*Bolitoglossa diminuta*) is part of a wide swath of Central American salamanders that are in steep decline. David Wake, professor emeritus of integrative biology and a longtime curator of the Museum of Vertebrate Zoology, and his colleagues compared records they had acquired over several decades. They speculate that global warming is the cause. Salamanders need moist, cool environments to thrive, but rising temperatures are pushing them to higher, less hospitable elevations. This does not bode well for forests, which rely on these small-but-mighty amphibians to eat beetles, ants, and other insects that would otherwise release greenhouse gases by chewing up leaf litter.

**TAKING NOTES FROM NATURE**— It's painstaking work, but somebody has to do it. In Berkeley’s Essig Museum of Entomology, undergraduates are carefully photographing and digitizing 1 million of its estimated 6 million specimens. That means removing each tiny label, which may contain 100-year-old handwritten notes; meticulously laying it next to its associated specimen; photographing them; then precisely reassembling each one to return to storage. With volunteers around the world who help transcribe the label data into an online database (Calbug), the students are contributing to an ambitious effort to understand how animals react to environmental changes. Bees, for example, are extremely sensitive and have become a key species in this work. Comparing the DNA of a 50-year-old specimen to one collected today could say a lot about how bees, plants, pollination activities, and disease have changed. And from that we can infer how urbanization, converting agricultural lands, and other threats might affect these top pollinators in the future. ■

To learn more about Berkeley’s inspiring leadership in understanding biological change, visit [globalchange.berkeley.edu](http://globalchange.berkeley.edu).
Every day 365 million pounds of edible food are wasted in the United States, enough to fill the world’s largest football stadium to the brim. Yet 50 million Americans — one in six adults and one in four children — face hunger daily. You can spend a lot of time worrying about these huge statistics. Or you can do something about it in just two minutes, thanks to Komal Ahmad ’12.

As a student, Ahmad was shocked to see a park that serves as a sanctuary for the homeless right across the street from the university’s most popular dining hall. “It’s staggering that, in such a wealthy and powerful nation, so many people are begging on the streets,” she says. “At the same time, restaurants, supermarkets, dining halls, and offices waste so much food that could address this problem.”

While earning dual degrees in international health and development and global poverty and practice, she led the Berkeley chapter of a nonprofit that recovers and redistributes the surplus from on-campus food establishments.

Before she graduated, Ahmad also joined forces with fellow alum Andrew Finch ’11 to start Feeding Forward, an award-winning website and mobile app that use an algorithm to match people and dining establishments with large amounts of leftovers to nearby human service agencies. Says Ahmad, “I couldn’t think of a better way to use my phone than to instantly connect those with excess food to those most in need of it.” After the food has been delivered, the agency photographs people consuming it and sends the photos back to the donor.

“The business is able to clearly see the impact they made on lives by spending less than two minutes of their time feeding forward.”
Most of us think of dust as germy puffballs that plague our homes and sinuses. But for at least two discoveries at Berkeley, dust can have far greater implications.

Kris Pister ’89, Ph.D. ’92, a professor in electrical engineering and computer sciences (EECS), never imagined dust could create such a stir. More than 15 years ago, he and his colleagues began packing sensors, microprocessors, radios, and power into progressively shrinking chips. Eventually, they unveiled a 5-cubic-millimeter wireless sensor — roughly the size of a grain of rice — that Pister aptly named “smart dust.”

Today, variations of such low-power, low-cost devices are integrated into our products, buildings, roads, and more. They’re monitoring operations at industrial plants. They turn off the lights in empty offices, measure pollution, and improve worker safety. They’ve even begun alerting drivers to vacant parking spots.

Banking on the promise of ubiquitous sensing, Pister and EECS colleague David Culler made the hardware and software designs openly available so that developers could run with the technology. The demand was overwhelming, and thousands of developers in academia and industry spurred a new wave of research and applications.

“A lot of universities and a lot of companies contributed, but Berkeley played an absolutely central role in that evolution,” says Pister, who founded Dust Networks (purchased by Linear Technology) to commercialize his invention. In fact, Berkeley’s sensor motes have become “sort of the workhorse of the industry” — and the foundation for several international standards.
**Visitors from extra-outer space**

Since 2006, scientists have been combing through aerogel traps from NASA's Stardust probe in search of interstellar dust, the stuff between the stars. The team finally struck gold, identifying seven dust motes that may well have come from beyond our solar system.

“They are very precious particles,” says Andrew Westphal Ph.D. '92, a physicist at UC Berkeley’s Space Sciences Laboratory and the lead author of a report that appeared in Science last August. While more tests are necessary to confirm the dust’s origin, the analysis opens the door to studying the start of the solar system — and possibly life itself.

What’s most exciting is that the tiny pieces of debris — just ten thousandths of an inch — are more chemically and structurally diverse than previously imagined. Two particles look like fluffy snowflakes. Three contained sulfur compounds that some astronomers have argued don’t exist in interstellar dust. And two particles will be further analyzed for the abundance of oxygen isotopes, a stronger indication of their extrasolar origin.

“We seem to be getting our first glimpse of the surprising diversity of interstellar dust particles, which is impossible to explore through astronomical observations alone,” says Westphal, referring to telescopes.

While finding the particles in the aerogel collectors is an assiduous task, hundreds of citizen scientists (or “Dusters”) volunteered through Stardust@home to sift through more than a million images. Anna Butterworth, a Berkeley research physicist, says, “If we had had one person searching the aerogel 40 hours per week, they would have taken three years to cover once the same area searched multiple times by the Dusters.”

A 2 millimeter aerogel sample that contains a speck of interstellar dust.
The world has gotten much smaller this century, with revolutions and discoveries from all corners of the globe accessible at the swipe of a finger. But the news next door often gets left behind in the big-media scramble. One significant response to this trend has been the establishment of hyperlocal news sources such as Richmond Confidential and Oakland North, both run by students in the Graduate School of Journalism, and Mission Loc@l, which started at Berkeley but has since become an independent entity. “Hyperlocal, web-based journalism is a needed innovation in the aftermath of divestment by media companies in their local bureaus,” says J-school lecturer Robert Rogers, who serves as an editor on Richmond Confidential.

The sites begun at Berkeley have shone much-needed light on historically impoverished, underserved areas. They have also grown in regional and international stature since funding from the Ford Foundation created them in 2008 and 2009. (Berkeley’s Hyperlocal News Fund now supports both.) Richmond Confidential had more than 500,000 page views in 2014 and garnered notice from The Guardian, the Los Angeles Times, and Moyers & Company during last November’s elections. Oakland North had more than 450,000 views in 2014. Many used it as their go-to news source during Occupy Oakland, and its stories have been reprinted in the East Bay Express and elsewhere.

It’s not just the reading public that benefits from these hyperlocal outlets. “The students come into high-volume, high-impact, intense news environments where complicated, impactful events are constantly unfolding,” says Rogers. “And it’s within this theater that students are able to hone their skills and learn basic journalistic techniques, ethics, and cross-platform publishing skills. It is, by its very nature, a service-learning project of the highest order.”

Hyperlocal journalism finds its place
Call it a booming crisis: between the tech explosion and the Baby Boomers now living alone while aging in place, Bay Area housing is stretched. Leave it to Kevin Casey M.B.A. ’09 to come up with an effective — albeit tiny — solution. While he was studying at the Haas School of Business, the financial crisis peaked and, along with it, the last housing crisis. Old-fashioned, door-to-door canvassing helped him determine that 30 percent of single-family homeowners wanted to add extra space for extended family. “That’s when I said, wow, this is the future of housing: single-family homes are going to transform into multigenerational homes, and we can build some software that makes it easier for people to do that.”

Casey’s company, New Avenue, creates custom 300- to 1,000-square-foot accessory dwellings, a.k.a. “tiny houses.” Their website provides a structured process through which clients can gather ideas, estimate costs, find architects and contractors, and track timelines. New Avenue’s designs are just as efficient, making the most of a small footprint with lofts, vaulted ceilings, more light, and other features. Kitchens, bathrooms, and other heavily used areas get bigger and easier to navigate for older residents.

Mona Cain had been living alone in a 2,400-square-foot house when her daughter Lisa Cain began looking for a place that could accommodate the entire family. “We originally started looking for duplexes,” says Lisa, “but either the whole thing was a fixer-upper or there just wasn’t the right configuration of space.” Today Mona lives in her daughter’s backyard in a 610-square-foot home that accommodates all of her needs.

“When you realize,” says Casey, “that suburban sprawl, traffic problems, affordability, all of these problems can be solved simply by providing a software that enables people to do what they want to do ... that’s when it becomes radical.”
In the labyrinthine shops and workstations of Dr. Xiang Zhang’s young engineering team, light moves backwards, powers minuscule motors, and even bends around objects to render them invisible.

It might sound like something out of a comic book, but Zhang’s team of more than 30 Ph.D. students, postdocs, and visiting scientists is very real, exploring the cutting edge of the relatively new field of metamaterials.

It’s called the XLab, and was named as such by Zhang “not because we’re mutants, but because we’re really looking for nontraditional research topics. X stands for explore, for experiment, for excellence.”

To make a metamaterial, compounds not normally used together are paired up on the nanoscale, then further engineered — by layering them in a certain shape, for example, or drilling into them a repeating pattern of holes — so that whatever passes through them (light, sound, or electrons) will move in a new way. Zhang, who holds the Ernest S. Kuh Chair in Engineering, focuses on photonic metamaterials — tiny-but-mighty tricks of the light. Some of the XLab’s metamaterials allow light rays to pass through material at a radically different angle; this motion can speed up the light, useful in the creation of “superlenses” whose extraordinarily high resolution could result in extremely sensitive biomedical detection and imaging. Others act as mini motors called “light mills” that power very, very small bots that can manipulate DNA, harvest solar light, and more.

“Everything we do begins in nature,” says Zhang. But the resulting materials — though not science fiction — perform feats burgeoning on the supernatural.
Tiny Twain
Many visitors know the life-size bronze sculpture of Mark Twain that beckons passersby in Doe Library to join him for a photo opp. But few visitors have seen the tiny replica of the statue that sits inside the Morrison Library next door.

Tiny mushroom
For the first time in 30 years, a new species of mushroom was discovered last fall — right here on campus. The researchers who found it, Else Vellinga and Nhu Nguyen, described it as a beautiful black “elfin saddle” associated with oaks.

Tiny legume
Lentils are cheap, yummy, and nutritious. But they could also help restore American farmlands depleted by decades of industrial agriculture, claims a new book (*Lentil Underground*) by Berkeley researcher Liz Carlisle.

Tiny bear
Bear statues of all shapes and sizes dot Berkeley’s grounds, but the tiniest one is carved into the stone over the door of South Hall, the campus’s first (1873) and oldest surviving building.

Tiny history
Nuclear scientists recently confirmed that a tiny speck of plutonium safely secured on campus came from the Manhattan Project, which involved the late Berkeley chancellor and Nobel Prize-winning chemist Glenn Seaborg and gave birth to the deadly atomic bomb used in World War II.

Tiny discoveries
Just a handful of small Berkeley finds over time: the chemical elements berkelium and californium; vitamins E and K; telomerase, an enzyme that promotes cell division and growth; and oncogene, the first confirmed cancer-causing gene.

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Eric Heller, a professor of physics and chemistry at Harvard University, creates digital abstract art inspired by the mysterious, unseen world of electrons, atoms, and molecules. His work, which relates to his research, goes through several steps, including generating raw images that simulate natural phenomena — such as the energy flow of a rogue ocean wave — and using image-editing software to transform color, value, and contrast. Stop by the Simons Institute for the Theory of Computing in Calvin Lab on weekdays to see several prints, or visit ericjhellergallery.com.
BIG GIVE, BIG THANKS!

On November 20, 2014, Berkeley held its first-ever 24-hour fundraising blitz — Big Give. Fueled by a variety of contests, widespread social media participation, and a collective desire to keep Berkeley the No. 1 public university in the world, donors made 7,336 gifts totaling $5,309,418. This global outpouring of support touched every school and college, and programs as diverse as our great university. See who won the contests, watch videos, and more at BigGive.berkeley.edu.

WHO BENEFITED BIG

- **Unrestricted Support** (54.3%)
- **Student Support** (21.7%)
- **Other Giving** (17.7%)
- **Campus Improvement Support** (6.3%)

WHO GAVE BIG

- **281 Current Students** (8.2% of all donors)
- **1,236 Current Parents** (14.3% of all donors)
- **6,488 California Residents** (75.1% of all donors)
- **1,717 Non-California Residents** (19.9% of all donors)
- **5,057 Alumni** (58.5% of all donors)
- **387 Funds Supported** (7.8% of all donors)
- **1,550 First-Time Donors** (10.0% of all donors)
- **438 International Residents** (5.1% of all donors)
New program honors Cal’s steadfast supporters

The saying goes that there’s strength in numbers. Berkeley is celebrating its philanthropic strength by recognizing the university’s most dedicated supporters in a new — and numerical — way.

Last fall, the university launched Berkeley Loyal, a program that honors current donors who have made gifts in each of the past three consecutive years. When donors achieve that distinction, Berkeley Loyal recognizes them for the total number of years they’ve given to Berkeley, in tiers ranging from 3+ years to 50+ years.

Berkeley Loyal members will receive an annual confirmation of their continued status and the number of years they’ve made gifts. Members also receive a special window decal — inspired by the star that tops Sather Gate — that notes their participation tier and the year, so that they can display with pride their commitment to the university.

For Marc Desoer ’74, M.B.A. ’76 (pictured right), giving to Berkeley is a way to repay the institution that has served him well in work and life. “I am better for the opportunity of a great education, and Berkeley gave me a very good one,” says Desoer, a retired banking executive whose consistent giving currently places him at the 30+ year Berkeley Loyal level. “I have a strong desire to give back.”

In particular, he finds inspiration in the many Berkeley students who are the first in their families to go to college. He feels the need to “pay it forward” to ensure that these students, who often overcome tremendous odds just to get to Berkeley, receive the most from their college experience.

Desoer, a university trustee, also knows firsthand the power of making consistent gifts to Berkeley, regardless of their size. “If each of us gives something each year to the university or department of your choice, you will make an important impact,” he says. “Consistent giving allows Berkeley to know it’s coming, and it can build into an annuity, making it very valuable in the long term.”

To learn more, visit loyal.berkeley.edu.
Remembering Barclay Simpson — and a lifelong love affair with Cal
“He was one of my heroes in life, deeply generous and at the same time deeply humble.”

— Chancellor Emeritus Robert J. Birgeneau (quoted in the San Francisco Chronicle)

When Barclay Simpson ’66 (ex-’43) passed away in November at age 93, Cal lost a larger-than-life figure in business, arts, government, and philanthropy — and one of its most ardent friends.

“I’ve loved the school since I was a little kid, and that hasn’t changed at all,” said Simpson last year in a video spot for The Campaign for Berkeley. “I think supporting Cal is doing a great deal for society.”

He and his wife, Sharon, did just that. Chancellor Nicholas B. Dirks noted in a statement mourning Simpson’s passing that the couple had left an indelible legacy across campus, including:

- The Simpson Center for Student-Athlete High Performance, a game changer for student-athletes
- A new, more accessible Berkeley Art Museum and Pacific Film Archive (BAM/PFA), expected to open in early 2016 in downtown Berkeley
- Support for undergraduate scholarships, the Haas School of Business, and the University Library

The Simpsons also co-chaired The Campaign for Berkeley, which raised $313 billion from more than 281,000 donors. In addition to his campaign work, he served two terms as board president at BAM/PFA and as a UC Berkeley Foundation trustee.

A colorful, generous life

Born in Oakland and a child of the Great Depression, Simpson once recalled sneaking over a fence to catch Cal football games for free. As a Berkeley student during World War II, Simpson signed up for the U.S. Naval Air Corps and deployed as a pilot with the elite Flying Golden Bears. The war and the demands of his business disrupted his studies, yet he maintained his connection to campus through the years and earned a B.S. degree in business administration in 1966.

He later founded Simpson Manufacturing — one of the world’s most successful firms and the maker of Simpson Strong-Ties, the industry standard for structural connectors. More than an entrepreneur, he also advocated for equity and access — for employees at his plants, for young people in underserved Bay Area communities, and for the general public. Among many other causes they championed, the Simpsons have supported Girls Inc. of Alameda County, reflecting their conviction that helping young girls will transform their lives and serve society in the long run.

In conferring the Berkeley Medal to Simpson in 2013, Chancellor Emeritus Robert J. Birgeneau said, “Barc, in everything that you have achieved, you have enriched the lives of those around you — mind, body, and spirit.”
A deeper commitment to maternal and child health

Helen Wallace, a faculty member in the School of Public Health for 20 years, dedicated her career to improving the lives of women and children. A world-renowned teacher and advocate, she left a gift valued at more than $13 million to launch the Wallace Maternal and Child Health Center, which will focus on innovative, evidence-based research and educating students primarily from the western United States through scholarships and fellowships. It will also create a new endowed faculty chair.

By building partnerships at every level of research, the Wallace Center will complement the school’s existing maternal and child health (MCH) program — one of the nation’s preeminent MCH leadership training programs — and the Bixby Center for Population, Health & Sustainability.
Wallace, who died in 2013 at age 99, mentored generations of students as a professor and chair of the school’s MCH program from 1962 to 1980. She laid important groundwork in the field by fostering collaboration across disciplines at a time when it was rare to do so, and she implemented these practices in the school, research partnerships, and in her writing.

“She was well known for mentoring her students and ensuring that what they learned on campus was put to use to benefit society,” says Professor Sylvia Guendelman, chair of Berkeley’s MCH program. “She inspired her students to be leaders, to make a positive difference in the world.”

Supporting an affinity for nature

John Gross ’47, who majored in forestry at the College of Natural Resources (CNR), was a true original: He drove a run-down truck for years, raced horses, and was fiercely engaged in the politics of California and nature. As he considered his legacy, he looked at the impact of CNR’s work and decided it felt like home. Gross, who was a builder and developer, made a variety of planned gifts that totaled more than $15 million — making him the largest individual donor in CNR’s history. But his deep care for public education and for Berkeley did not stop there. In all, he gave nearly $21.8 million to a variety of units and interests on campus, including an endowed chair in political science in the College of Letters & Science. He died in 2013 at age 93.

“John felt the value of public universities to the state was enormous — in scientific research, job creation, innovation, technology, business, and health,” says Kathryn Moriarty Baldwin, CNR’s assistant dean of development and public information. “He believed that … UC was something rare and wonderful that was worthy of investment.”

Doubling the impact of scholarships

When Ruth (Janke) Johnson ’38, C.Mult. ’39 learned of the mounting difficulty many students have in paying for their education, she took action. Johnson made a gift in her trust that enables Berkeley to match 50 new scholarship funds of $100,000...
each — 10 of which have already been fulfilled. When coupled with dollar-for-dollar funding from donors, the Ruth Johnson Undergraduate Scholarship Match Program will create more than $10 million in new endowed scholarship funding.

There is a story behind every scholarship — and every student whose life is changed by a Berkeley education. For example, Eugene Jarvis ’73 thought he wanted to become a biochemist, but realized he preferred building new universes to studying one in which the laws of nature had already been determined. Thus began a successful career in game design and programming — and the inspiration to help others find their true path. He recently took advantage of the Johnson Match to establish the Eugene Jarvis Media Innovation Scholarship, which will support students working in new media or design innovation fields.

An honors student at Berkeley, Johnson taught French and Spanish in public high schools for 30 years. She and her husband Milton, a U.S. Army veteran, lived in several places in the United States and Japan. Acknowledging Berkeley’s significance in her life, Johnson’s generous gift enables donors to realize their vision of starting a scholarship in an academic area they care about — while inspiring new stories among talented students with the greatest need.

Planned gifts provide creative, flexible strategies for pursuing your financial and charitable goals while supporting work at Berkeley that is meaningful to you. To speak with a gift planning expert, call 1.800.200.0575, email ogp@berkeley.edu, or visit planyourlegacy.berkeley.edu.
Chopping wood. Fireside sing-alongs. Bird watching and a dip in the creek. Sounds like the stuff of summers past, but for about 40 students each year, these activities are an unforgettable part of their education.

Forestry Camp is an eight-week field program in the Sierra Nevada taught by faculty in the College of Natural Resources. The only one of its kind west of the Mississippi River, the camp enables forestry and other majors to dive headfirst into the scientific and professional dimensions of managing forests. It is celebrating its 100th anniversary this year.

While the curriculum’s 20th-century focus emphasized growing and harvesting trees for human use, today’s students have an eye toward bigger issues, such as protecting threatened landscapes and mitigating increasingly destructive wildfires caused by climate change. Their camp studies include ecology, surveying, forest operations, and management.

No stranger to the wild, Sophia Lemmo ’16 has gone backpacking since childhood and worked on a variety of park restoration projects as a teen. But Forestry Camp deeply immersed her in the subject for the first time.

“It’s a really great place to live what you’re learning,” says Lemmo, a forestry major. “Classes and books are great, but you get to see it, touch it, and feel it at camp.”

She also experienced what generations of campers before her never forget — lifelong bonds. “Living in the forest with your peers is all-encompassing,” she says. “You bunk together, eat together, work together, play together. It was one of the best experiences of my life.”

To help preserve this only-at-Cal experience for future foresters and environmental leaders, make a gift online at nature.berkeley.edu/forestry100.
Memories of Padova, past and future

The year was 1963. A group of American students — from Berkeley, UCLA, and UC Santa Barbara — gathered at the University of Padova in Italy for a yearlong study-abroad program. Classes in Italian. Train rides to Venice. Living with Italian students. The stuff college memories are made of.

More than a half-century later, three members of that group have created the Amici de Padova scholarship so that a Berkeley student in need can experience the beauty and culture of Italy — and make their own memories.

“It wasn’t just the classroom learning,” says Ruth Scott ’65, M.B.A. ’69, reflecting on the experience. “It was the immersion in a different language, a different culture, and the friendships made that have lasted a lifetime.”

Jane Vaden ’65 and Santa Barbara alumna Pamela Thames — two of those students — also contributed to the scholarship fund.

A Los Angeles attorney, Scott speaks with pride about her year at the University of Padova, which has counted Copernicus and Galileo among its faculty. Though Padova is technically no longer part of Berkeley’s international program, the trio decided to set up the fund anyway. In the spirit of international learning, the scholarship can also be offered to a Padova student who wants to experience Berkeley.

“Not only does this gift reflect the power of international travel, it also reflects Berkeley’s goals to promote excellence in undergraduate education and to be a truly global university,” says Richard Russo, Berkeley’s dean of summer sessions, study abroad, and lifelong learning.

To mark the 50th anniversary of their experience, members of the 1963 group returned to Padova in 2013.

“The trip,” Scott says, “reminded me of a quote by Mark Twain — ‘Travel is fatal to prejudice, bigotry, and narrow-mindedness, and many of our people need it sorely on these accounts. Broad, wholesome, charitable views of men and things cannot be acquired by vegetating in one little corner of the earth all one’s lifetime.’”
Growing up in Silicon Valley in the 1980s and ‘90s, Doreen Sinha ’00 enjoyed a solidly middle-class upbringing and excelled in school. Stanford might have made an obvious choice for college, but she didn’t even look at the brochures. “I always knew I belonged at Cal,” she recalls with a smile.

Once at Berkeley, Sinha marveled at professors such as Marian Diamond — who could hold hundreds of students rapt — and dove headfirst into earning a dual degree in molecular and cell biology and psychology. Looking back, Sinha is surprised by how much Cal has given her beyond a world-class education.

Sinha says her first post-college employer took a chance on her simply because she was a Berkeley graduate. She credits her current position at Genentech to her Cal connections. And in 2008 she met her husband, Ravi Sinha ’97, through mutual Cal friends. “I keep reaping the rewards of Cal even though I’m 15 years out from graduation,” she says.

That awareness fuels Sinha’s desire to give to Berkeley and to encourage others to do the same as a volunteer for the Class of 2000’s 15th Reunion Gift campaign. “Cal has opened so many doors for us,” she says. “I want to tell people: Don’t wait till you’re older. Donate what you can now.”

Sinha was energized by the Big Give last November and hopes its success at inspiring young alumni to give means that a new generation of Cal graduates are stepping up to the plate. “We say we want Berkeley to be affordable for the students coming after us,” she says. “It’s time for the young and youngish alumni like me to stand up and put our money where our mouths are.”
1. Lisa Lum ’99 (left) and Dave Wong ’84 (right) welcome Professor Randy Schekman to the Berkeley Charity Ball in Hong Kong.

2. Charles “Chip” Wiser ’78 (left), his wife, Jane ’80 (middle), and Steve Peletz ’83, M.B.A. ’99 (right) attend the “Transforming UC Berkeley’s Real Estate Portfolio” event in San Francisco.

3. Dr. Ming-Jeh Chien ’71 (far left), his wife, Charlene ’73 (second from left), Constance Chiang ’86 (center), and Frances and Steve ‘00 Ma join the 150 alumni and friends in November for the Berkeley Club of Taiwan’s annual dinner.

4. Darian Swig ’86, M.A. ’06 and Alex Williams, associate director of Human Rights Watch’s San Francisco office, celebrate the Human Rights Center’s 20th birthday in San Francisco.

5. Chancellor Nicholas B. Dirks and Adnan Shihab-Eldin ’65, M.S. ’67, Ph.D. ’70, director general of the Kuwait Foundation for the Advancement of Sciences, sign a gift agreement that will support a pilot program fostering collaboration between Berkeley and Kuwaiti academics and researchers.

Making connections
6. Cal parent Darlene Amey and her grandson enjoy the festivities, face painting, and balloon animals at the Berkeley-Haas tailgate during Parents and Reunion Weekend.

7. Harold Javid, director of Microsoft Research Connections’ regional programs for North America, Latin America, and Australia/New Zealand (left), and Richard Karp, director of the Simons Institute for the Theory of Computing, attend the institute’s first Industry Day.

8. Dean Rich Lyons presents the Business Leader of the Year Award at the Haas School of Business Gala to Stuart Bernstein ’86, a dedicated supporter of the Cleantech to Market program and the Berkeley Energy and Climate Institute.

9. At the Graduate Dean’s Leadership Circle reception last fall, fellowship donors Dick and Beany M.A. ’64 Wezelman (center) meet with their delighted fellowship recipients, Selina Makana (left), Ph.D. candidate in African American studies, and Meron Tesfaye (right), doctoral student in chemical engineering.

10. Actress and singer Rita Moreno, who spoke at the Luncheon in the Library in January, poses with William “Russ” Ellis, professor emeritus of architecture and former vice chancellor for student affairs.

12. The Class of 1954 celebrates its 60th reunion at a luncheon in the Bancroft Hotel last fall. The class raised more than $600,000 in support of the university during its reunion year.

13. Bettina Duval ’82 (far left) is welcomed to the Goldman School Board of Advisors by Carina Ryan (second from left) and members Noëlle Leca and Nancy Hult Ganis ’78.

14. Chancellor Emeritus Robert J. Birgeneau (far right) and his wife, Mary Catherine (second from left), attend the 5th Annual Michael Nacht Distinguished Lecture in Politics & Public Policy with Jim ’52 and Betty Riley ’50 Huhn and Goldman School Board of Advisors member John De Luca (far left).

15. Eric Stern ’87 meets with his fellowship recipient Charles Frye, a first-year Ph.D. student in Cal’s Neuroscience Institute, following a meeting of the Graduate Dean’s Fellowship Advisory Board on which he serves.

In February, 500 alumni, parents, and friends celebrated “The Brilliance of Berkeley” at a university-sponsored event in Santa Monica.

17. Honorary committee member Eric Winston ’95 and his wife, Jacqueline McIntyre-Winston.

18. Oski with trustee and Cal Parent Andrea Roth.

19. Laura Lovejoy, Adam Bahna, Dorothy Bahna, and Deborah Chrabolowski accept the Haas School of Business Leading Through Innovation Award at the Haas Gala on behalf of Ralph Bahna M.B.A. ’65, who passed away in February.

20. Panelists Diane Greene M.S. ’88 and Paul Jacobs ’84, M.S. ’86, Ph.D ’89 take questions from Dean Shankar Sastry during Berkeley Engineering’s program on “The Power of Mobile and the Cloud.”

21. Dean of the Graduate Division Fiona Doyle greets Yong-Kyung “Ken” Lee Ph.D. ’75, president of the Berkeley Club of Korea, during his January visit. Dr. Lee delivered $10,000 from the club to sponsor two graduate-undergraduate pairings in this summer’s Student Mentoring and Research Teams (SMART) program.

22. Chemistry professor and former dean Richard Mathies, Wenbin Que, College of Chemistry dean Douglas S. Clark, Mike Que M.S. ’12, and professor and undergraduate dean Marcin Majda celebrate the October opening of the Que Family Undergraduate Advising Center in Gilman Hall.
“God view”

Geoffrey Nunberg, an adjunct professor of linguistics at the School of Information (ISchool), has contributed witty commentaries to NPR’s Fresh Air for more than 25 years. His highly anticipated annual feature, “Word of the Year,” calls out a word or phrase that best illustrates the changes in our culture and lives. His choice for 2014 — “God view” — is the term the car company Uber uses for a map view locating its drivers and customers. The media seized on the term last fall when Uber came under fire for tracking and displaying the movements of some customers. In his perspective below, Nunberg explores our discomfort with being the unwitting object of technology’s gaze — and the sense of “creepiness” that has become ubiquitous in the Internet Age.

“It doesn’t look good when the people entrusted with the information come off as a crew of brash striplings who seem to take privacy casually.

Calling a display God view didn’t help dispel that impression, particularly coming from a company whose name already suggested a certain Teutonic grandiosity. But if Uber’s choice of words was ill-advised, it’s still a pretty apt name for the way technology sees us now. Every week brings another indication that the world is becoming a place where everybody can be observed without being aware of it. An app displays the Facebook profile of every woman in the immediate vicinity who’s logged in on Foursquare. A website streams live video from thousands of unsecured webcams along with their map locations. And we’re dogged by those uncannily personalized ads as we browse the web.
In a course I co-teach at Berkeley, we ask our students to try to figure out what Google knows about them. One young woman tried switching to a new browser and entering searches for products like Stride Rite Shoes and Barry Manilow albums. She wasn’t surprised when ads for menopause supplements started to appear on the web pages she visited, but it was unsettling when her boyfriend started seeing ads for Viagra.

What we’re talking about here, of course, is the sense that the world is getting more and more creepy. … It’s become our reflexive response to the unnerving promiscuity of digital information. Scholars ponder it. You see articles in academic journals and law reviews with titles like “A Theory of Creepiness” and “Leakiness and Creepiness in App Space.” As the thinking goes, understand creepiness and you’ve located the boundaries of personal privacy, the line you mustn’t trespass.

Creepy is a more elusive notion than scary. Scary things are the ones that set our imagination to racing with dire scenarios of cyberstalkers, identity thieves, or government surveillance, whereas with creepy things, our imagination doesn’t really know where to start. There doesn’t have to be any concrete threat we can point to. There’s only the unease we feel when we realize we’ve been the object of somebody’s unbidden gaze. A while ago, my wife was caught by Google Street View early one morning as she was opening our gate after taking out the garbage. It creeped her out. “You can see me from Buenos Aires,” she said, “and I wouldn’t even wear those pants to the Safeway.”

Not that most of the builders of the technology are actively trying to creep us out, though they’re willing to come close. As Google’s Eric Schmidt said, Google policy is to get right up to the creepy line but not cross it. But that line is constantly moving as we get more and more used to being exposed. …

Follow that logic, some people say, and the creepiness of technology may come to seem a passing phase. But this isn’t really about technology in the first place. What we find creepy isn’t those God views in themselves, but the people we fear might be out there using them. There may be no more creeps in the world than in earlier times, but there’ve never been so many opportunities for acting like one.

Visit [http://n.pr/1BavHba](http://n.pr/1BavHba) for the full transcript.