WE RULE

HOW TO RESTORE OUR FAITH IN CIVIC LIFE

SUGAR RUSH
GLYCOscientist
CAROLYN BERTOZZI

FIELD WORK
REPRESENTING CALIFORNIA'S FARMWORKERS
He helped us find our son’s calling. It was as plain as the nose on his dog’s face.

I was worried my son lacked direction. Doug said he just needed to find his passion and suggested we all three meet for lunch at an outdoor café and chat. My son brought his rescue dog Max. Doug had brought a dog biscuit for Max and when he saw how well trained Max was, he recognized my son’s true passion: working with rescue dogs. Doug connected him with a local rescue organization. A few years and my son is running the whole outfit. Doug saw something bigger in my son because he was paying attention to the little things.

— Ashley, Los Angeles
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Life Is Sweet
Chemical biologist Carolyn Bertozzi is dragging the study of our cells’ sugarcoating into the light, with implications for how we treat everything from common cancers to rare genetic syndromes.

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Fight Song
His skeptics have been many. But over four decades, Jose Padilla, ’74, has become a hero in the legal aid world for his tenacious yet nimble approach to advocating for California farmworkers and the rural poor in America’s most populous state.

44
Deliberation Nation
Democracy faces new challenges in the age of technology, chief among them what scholars call the “fragmented public sphere.” They are teaming up across the university to help citizens improve their civic literacy and more ably handle the reins of government.
Meet Koloikeao Anthony
A Hawaiian artist (and Stanford junior) sails the sea, tinkers with trucks and designs apparel.

Paying It Forward
Once a varsity basketball star who held down six jobs to help fund his Stanford education, John Arrillaga, ’60, went on to develop much of Silicon Valley’s commercial real estate. He also became one of the largest donors in university history—though few knew the true extent of his giving.

Mental Health Mission
Psychologist Ricardo Muñoz, ’72, has dedicated his career to helping people head off depression in its early stages and to sharing self-help tools around the world.

Digital
NEW
AT STANFORDMAG.ORG

Pick-me-ups from psychologist Ricardo Muñoz, ’72, at alu.ms/mood
Revisit our 1995 conversation with Supreme Court Justice Stephen Breyer, ’59
Our collection on the Stanford Supremes

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Dialogue

An Evergreen Activity

A December story explored the value of coloring outside the lines and invited readers to share their work.

Great magazine. You asked us to destroy the Stanford Tree and send you a picture, so here it is. I cut it up and made a tree out of the Tree.

Page Kalkowski, MA ’90, EdS ’92, PhD ’92
Portland, Oregon

Devil in the Details

Our December cover story examined geneticist Michael Snyder’s self-monitoring project and its implications for the future of human health.

Although the work of Michael Snyder is impressive and valuable in a statistical and clinical sense, the notion of applying broad-spectrum, instrumentalized quantification to a wide public is in some ways a step in the wrong direction. Why? Because it removes us even further from direct awareness of our own selves.

Anytime we increase reliance on external devices to tell us what we are doing, we diminish our ability to perceive it on our own. For example, people running and working out with measuring devices on their upper arms are already distracting themselves from experiencing their own bodies. (Do you really need a monitor to tell you that you’re winded, or that your heart is racing, or that you’re in good physical condition?)

In addition, overanalysis can lead to unnecessary medical interventions. Over the 80 years of my life, I have declined numerous surgeries for a variety of issues that were discovered through testing. In every case, I’m thankful that I made the choice I did.

Finally, there’s the comment by Dr. Snyder about longevity: “I’d rather live to 90 than to 60.” There’s a lot of truth in that, but long life in and of itself is a false goal. We used to say, “live fast and die young,” and a lot of people did. Who’s to say that they were wrong?

David Rearwin, PhD ’73
San Diego, California

While I applaud Snyder’s goal of promoting a healthy lifestyle, I am concerned that only cursory reference is made to the psychological impact of self-monitoring.

Primary care is first and foremost preventive care. Preventive care includes regularly scheduled checkups, running the right test at the right time (with a clear plan to address abnormalities), and, most important, listening to and interacting directly with the patient. This approach is evidence-based and extremely cost-effective.

On occasion, popular over-the-counter devices will accurately detect an important abnormality, such as atrial fibrillation. Usually, when I evaluate an alert generated by a personal monitor, my patients are found to have no diagnosis or a benign condition. Much more often, these clients will exhibit a high level of anxiety, which is exacerbated by the frequent notifications from these devices.

As any primary care provider will attest, the most common diagnosis in general medicine is a mental health condition. Currently, no lab test or monitoring device can accurately diagnose anxiety or depression. Regarding personal omics profiling, I predict that over time such hypervigilance will lead to more harm than good.

Robert Saldivar, ’83
Portland, Oregon

The December cover features an article about high-tech medical innovation with the headline “Body Count.” Anyone who lived through the American invasion of Vietnam knows that the U.S. metric for success in that conflict, which took some 2 million lives, were the infamous words body count. I suggest that your headline writer read Nick Turse’s history of those words, Kill Anything That Moves: The Real American War in Vietnam, to understand how that headline struck many of your alumni who protested Stanford’s involvement in that horrific conflict.

Peter Knutson, ’74
Seattle, Washington

Really? You headlined a very interesting story “The Measures of a Man”? What could it be about Michael Snyder’s work and research?
that makes your editorial staff think that his maleness needs to be emphasized? Fortunately, in reading the article, there is no suggestion whatsoever, past that headline, that Snyder intends to exclude women from his research projects, in terms of subjects or team members.

For decades we have known that it is confusing and sexist to use the term man when human is meant. What sort of style guide are you using in this, the 21st century? Otherwise, it was a very interesting and useful article, but the headline certainly put me off initially.

Carol B. Muller, MA ’81, PhD ’86
Palo Alto, California

News Worthy

A December feature explored a surge of young alums enjoying early success in journalism.

I’m encouraged that journalism continues to attract talented young people despite the depressing challenges in the news media business. Good storytelling for the purpose of accountability will continue to be essential for the health of our nation and our democracy, and the Stanford alums you highlighted give me hope. Among the media challenges are the poor management decisions of news organizations themselves, as we learned earlier this year from the experience of Emily Wilder, ’20. She was a victim of the Associated Press’s vague and inconsistent ethical standards for social media. Fortunately, Wilder has landed at the Santa Rosa Press Democrat, where she is doing good work on the criminal justice beat. Her story and her commitment to storytelling would have been a good addition to the group of reporters you featured, and a cautionary tale as well.

David Vossbrink, ’72
Sunnyvale, California

Fueled Up

In December, we spoke with alums who want to reinvent supersonic flight.

It’s incredible. Supersonic flight was canceled decades ago due to concerns of its harm to our protective ozone layer. It was common knowledge then. But it is overlooked in the “Hot Wings” article and perhaps by folks trying to resurrect supersonic travel from the dead.

Denise Louie, ’74
San Francisco, California

Rethinking Our Habits

In his September column, university president Marc Tessier-Lavigne described the formation of a new Stanford school focused on climate and sustainability.

President Tessier-Lavigne is absolutely correct: We have to change our behaviors as well as deploy new technological solutions if we are to avoid the worst outcomes of the climate crisis. Yet at the recent Stanford reunion and in the Class Book pages, there was a great deal of talk among us seniors about the international trips we’ve taken and those we’re planning, and Stanford still promotes and thus seems to condone these nonessential, fuel-consumptive trips through its enticing Travel/Study program. While collectively we seem to understand the seriousness of the climate crisis, we are not yet making the difficult personal sacrifices urgently needed.

Martha Gibson Plescia, ’71, MA ’75
Sunnyvale, California
Group Project
Civic engagement has gotten trickier. Which is exactly why we have to dig in—together.

THE FIRST TIME I VOTED

In a general election, the process took over my desk in Potter House. I not only read the text of all 28 of California’s ballot propositions, which ran the gamut from dueling alcohol taxes to an initiative on the initiative process itself, but scrutinized the arguments for and against each. Then I plowed through the candidate statements for everyone from the gubernatorial hopefuls to those vying for the District 2 seat on the State Board of Equalization.

That was almost certainly the last time I was so diligent.

Don’t get me wrong: I vote consistently and lobby my representatives on issues I care about. But when it comes to becoming truly knowledgeable, I can’t quite get to the bottom of the ballot before my brain goes on the fritz. Unless there’s a compelling reason to oust someone from the hospital board—and I trust the local media will let me know if so—I’m checking the boxes for the incumbents and moving on.

Apparently that faith is kind of old-school, though, and Stanford scholars in our cover story say that’s a problem. In the early days of the American republic, people relied on their elected representatives to bolster their civic literacy. Later, we depended on the media. Now, both are the objects of widespread disinformation—taking a walk with the local media will let me know if so—I’m checking the boxes for the incumbents and moving on.

All of which makes me think that my informal method of boosting my civic literacy—taking a walk with a longtime friend and sharing what we’ve gleaned about candidates and issues—may have something to it. We grew up in different regions; we come from different social classes. Her academic background is in economics and business; mine’s in American studies and law. We know we’ll disagree—sometimes fundamentally—but we have a bedrock level of trust that we will each approach issues with intellectual honesty and vigor. And we learned how to do that in the hallways of Potter House.

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Recognizing Campus Heroes
The pandemic has underscored the many ways Stanford employees support our community.

The Pandemic Has Forced
Stanford employees to adapt to new ways of working, and many have also had to manage additional caregiving responsibilities or cope with the toll of isolation. I am deeply grateful to our employees for their fortitude in the face of these challenges. As we conclude a second year of the pandemic, I want to salute all our employees and illustrate their courage and commitment through the stories of a few individuals who have worked on campus continually in this period.

In the early days of the pandemic, physicians and nurses went to work in an atmosphere of uncertainty and anxiety. Ilana Sacks, an oncology nurse with Stanford Medicine, has cared for immunocompromised cancer patients throughout the pandemic, which has required extra vigilance in keeping them safe from COVID. She described how coming to work in March 2020 felt like “going into battle”—not knowing each day what she would face, but with deep pride in her fellow nurses and practitioners, who were ready and willing to serve.

Researchers have also been on the front lines from the beginning. Ben Pinsky, an associate professor of pathology and of medicine and the medical director of the Clinical Virology Laboratory for Stanford Medicine, leads the team that developed and launched an early COVID diagnostic test. Ben and his team identified the first cases of community spread in the Bay Area, and their efforts made Stanford one of the first labs in the country to offer clinical testing.

As more students were able to return to campus, many employees were focused on supporting their safety and well-being. Robyn Tepper, director of medical services at Vaden Health Services, worked around the clock to provide care and medical consultation to students who tested positive or were exposed to COVID, in addition to developing student-focused programs for testing, vaccine compliance, case tracking, quarantine and isolation. Likewise, Tami Lin, senior executive chef at Arrillaga Family Dining Commons, and her colleagues pivoted repeatedly to meet the evolving needs of students—from takeout only to limited indoor dining to providing meals to hundreds of students in isolation during the Omicron surge.

Tami has paid close attention to the role of dining services in providing students with comfort during a stressful time. I found this same commitment to care across our entire campus. I’ve been deeply impressed by the ways in which employees have focused on not only delivering services but also providing empathy and support. With visitors barred from the hospital, Ilana, the oncology nurse with Stanford Medicine, found new ways to connect patients with their families and stepped in to provide compassion at critical moments. Elsewhere on campus, grounds crew lead Jose Escañuela not only worked with his colleagues to tame the campus landscape after it was left untouched for six weeks at the start of the pandemic, but also worked with university leadership in his capacity as the president of Service Employees International Union Local 2007 to support pay continuation and enhanced health and safety protocols for workers.

I want to thank Ben, Ilana, Jose, Robyn, Tami and the many, many others like them whose contributions throughout the pandemic have helped Stanford weather this singular time in our university’s history. Stanford’s employees have adapted and persevered through the darkest days of the pandemic to advance our mission of education, research and health care. Our community owes them all a deep debt of gratitude.
Moving forward, together.

Right now, in these times of uncertainty, there’s a promise we can count on: together, we’ll continue to rise to the challenge and find a way forward.

Stanford Medicine, made up of Stanford Children’s Health, Stanford School of Medicine, and Stanford Health Care, is working to end this pandemic with vaccines, boosters, and state-of-the-art testing.

Responding to uncertainty with an unwavering commitment to our community, and meeting this moment with courage, compassion, and innovation.

Thank You, Bay Area, for standing with us, together.

Today. Tomorrow. Always.

*We are here for you.*
In mid-2021, vandals threw wine bottles at MemChu’s façade, damaging four panels of Lilies of the Field that had been in place since 1912. A Stanford staff team collaborated with Helios Art Glass on a meticulous restoration of the glass, including a trip to Los Angeles to find fragments of just the right colors and opacity. Helios glued more than 100 splintered shards back into place using a specialized two-part museum epoxy, which made the cracks invisible and produced repaired glass—here being installed by Tom Lehnartz—as strong as the original.

PHOTOGRAPH BY ANDREW BRODHEAD
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WHO WE ARE

Meet Koloikeao Anthony

A Hawaiian artist finds his voice through fashion.

“Art makes me a better person—being able to express myself without any friction from anything else.”
"I am a poi dog. I’m a mix of different cultures. I’m a mix of different identities. I’m a mix of different stories from different parts of Hawai’i. I come from all these different places. I have the responsibility, but also the freedom, to tell my story and represent it well.

“I grew up surrounded by people who were making sure that I was involved in my culture. I went to Hawaiian immersion preschool and elementary up until sixth grade, so I really didn’t learn English—to write English sentences—until I was in the fifth grade.

“I started sailing at a really young age. My dad started sailing on this Hawaiian voyaging canoe called Hōkūle‘a, and they went all around the world in 2015. But before that, every Thursday we would sail to Diamond Head and back. I became very comfortable in the water and also got to participate in something that was very culturally grounding, even though it was just fun, and I didn’t realize how much I had taken away from those experiences until much later.

“I really like working on cars, like my truck. It sounds really dumb, but being able to diagnose what is wrong with the car is, to me, one of the cooler skills that you can have, because it’s really hard to do since you can’t see inside of it and it can’t talk to you about what’s going on.

“Storytelling, to me, is telling my story through different lenses with shapes and colors, with art. It’s telling my story in a way that best represents who I am. And it’s not written down—it’s on a canvas somewhere or on a wall or an aloha shirt that represents all the work that I’ve done, with inspiration that I’ve found.”

KOLOIKEAO ANTHONY GREW UP in a family of storytellers on the east side of O’ahu. His paternal grandmother is a professor of Hawaiian language, genealogy and mythology at the University of Hawai’i. His father is a filmmaker. “I’ve been encouraged to tell the stories of the place that I come from, but in my own way,” the Stanford junior says.

It wasn’t until he got to Stanford that he saw an avenue to do so. He was spending time at the McMurtry Building, home of the art and art history department, where he would work on art projects, such as print-making, or just grind away on essays (he’s an English major). It became a place where he felt free to do his own thing. By 2020, he had launched Poi Dawg, a brand based on one of his high school graffiti tags, through which he sells T-shirts and stickers he has designed.

In Hawai’i, a poi dog is a mutt. As a person of multiethnic heritage, Anthony says, “I really felt akin to that kind of thinking . . . [Poi Dawg] became about identifying and being OK with where we were.”

Last summer, he worked at well-known aloha shirt company Sig Zane Designs. By the end of the summer, he had designed two shirts for release, including one (above, black) that has since sold out. “It’s always been a dream of mine to work for them. I realized I did one of the things on my bucket list at 20 years old—I can do way more.”

—Evan Peng, ’22
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Crowning Achievement
Two undergrads become the youngest people to complete all three major U.S. through-hikes in a single year.

**Crowning Achievement**

Two undergrads become the youngest people to complete all three major U.S. through-hikes in a single year.

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**SAMMY POTTER FIRST FLOATED** the idea of a calendar-year Triple Crown to distance-running buddy Jackson Parell during the early weeks of lockdown. If they completed the three fabled through-hikes—the Appalachian Trail, Continental Divide Trail and Pacific Crest Trail—in 2021, they’d become the 11th and 12th people (and the youngest ever) to achieve the feat in a single year.

“One of my best friends had just died,” says Potter, ’22, “and I was still in the heaps of grief. I was not stoked about being in school or being home for that long.”

Parell, ’22, was ready to lace up his boots. “There was this feeling of helplessness coming out of that time,” he says. “I really wanted to take control in any way that I could.”

On January 1, 2021, they set off on the Appalachian Trail. And after some crisscrossing of the continent to avoid snowfalls and forest fires, they finished the last segment of Pacific Crest Trail on October 22. Friends and fans followed along on Instagram (@cytriplecrown) or trailed behind via Backpacker magazine’s Impossible Odds podcast.

“I’ve definitely felt it all,” says Parell. “There’s the feeling of satisfaction knowing that it’s now behind us, the anticipation of seeing family and friends again. And there’s that really special kind of heartbreak that you get when you know an important chapter of your life is over.”

The two are back on campus this winter, rooming together in the warm confines of 650 Mayfield Ave.

—Sophie Boyd-Fliegel, ’21

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Color Me Verdant

In this new museum, you can play with words.

INSIDE THE ICONIC Franklin School in Washington, D.C., is a futuristic museum that pays homage to the building’s past. Like the 19th-century school, Planet Word is a free institution created for the public. But where once there were classrooms with desks in neat rows, there now are 10 immersive exhibits spanning three floors, designed to unleash your inner word nerd. It’s exactly what founder Ann Buckbaum Friedman, ’75, envisioned: a high-tech museum that makes language—and by extension, literacy—fun. “How could we be a strong democracy,” asks the former teacher, “without a nation of readers?”

Planet Word is all about, well, wordplay. “This museum wants you to talk to it; it’s going to talk back,” says curator of programming Rebecca Roberts during a virtual tour available on YouTube. “This is not the sort of place where you stand back and admire the artwork.” In fact, you sometimes create the artwork. In the “Word Worlds” exhibit, visitors paint not with colors, but adjectives. Below a digital mural that blankets three walls, fiber-optic paintbrushes rest in cups with labels like verdant, nostalgic, luminous. Paint the sky tempestuous and watch a storm brew.

In the wood-paneled library, ordinary-looking copies of To Kill a Mockingbird and Corduroy lay inert on shelves, but spring to life when opened on specially designed tables. Flip through cookbook Salt Fat Acid Heat and you might hear the sizzling of oil or watch projections of dough rising from the page into golden domes. Around the corner is a karaoke gallery in which each song is prefaced by insight into its story, an idea the exhibit designers refined after consulting with singer-songwriter Paul Simon.

Even the website has gotten into the act: At launch, it featured an anagram devised by enigmatologist and New York Times crossword editor Will Shortz.

“This is the only museum in the world about language like this,” says board member Sara Mark Lesk, ’76, a senior educator at the National Gallery of Art. The most innovative aspect, in her opinion, is the exhibits’ ability to meet everyone where they are. Regardless of interest and aptitude, “your eyes are wide open, you’re amazed, you feel smart.”

As you may have heard, Justice Stephen Breyer, ’59, will retire at the end of the Supreme Court’s current term, assuming his successor is confirmed. STANFORD will take a look at his legacy later this year. … After 27 years, the justice well knows how to get to One First Street, but Steve Youngwood, MBA ’97, can tell you how to get to Sesame Street. He’s the new CEO of Sesame Workshop, the nonprofit behind Big Bird et al. In other entertainment news, Ramin Setoodeh, ’04, is moving from executive editor to co-editor-in-chief of Variety this year. If you’re not a fan of Elmo or the red carpet, you might be more interested in the CBC Radio show This Place: 150 Years Retold. Eva Grant, ’19, was part of the all-Indigenous team that created the 10-part audio series exploring the “heroes, battles, triumphs and traditions” of overlooked Canadian history. … And Twitter’s new head honcho (or, dare we say, big bird) is Parag Agrawal, MS ’07, PhD ’12, who takes the reins from co-founder Jack Dorsey.
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Pandemic Chic
Behind three clothing companies that launched during lockdown.

Underwire Under Fire
Frankly Apparel founders JANE DONG and HEATHER EATON, both MBA ’20, fell into friendship easily. “We sometimes joke that going through the GSB was like intense therapy in some ways,” says Dong. “We were always talking about our feelings.” Eaton says she gravitated toward her three garments that she could wear without a bra. But similar pieces that fit well were hard to find; few seemed designed for larger cup sizes. So she enlisted Dong’s help to develop a size-inclusive line of “braless” clothing. Initially funded through Kickstarter, Frankly Apparel now boasts a strong following on TikTok. “What Spanx did for shapewear or what Lululemon did for athleisure,” says Eaton, “we want Frankly to be that for braless clothing.”

Vivid Vision
There’s nothing quiet about Oddli, the brainchild of ELLIE CHEN and JENSEN NEFF, both ’20. Muted hues might fit “the larger narrative of how people think about climate change,” says Chen, but she and Neff prefer to see sustainability in living color. Every item Oddli offers, whether bucket hat, halter top or pocket dress, is made from deadstock, the fashion industry’s surplus fabric, most of which would otherwise be destined for the landfill.

Chen and Neff, who met during New Student Orientation, share interests in nature, fashion and playfulness. And their skills, says Neff, “are an exact Venn diagram.” After graduation, the two friends moved to Los Angeles, intent on building, says Chen, “the next big sustainable fashion brand centered around colorfulness and creativity.”

Second Lives
LAVANYA MAHADEVAN, ’20, remembers her first impression of HENCYE SIGHTS, ’19: He was a sharp dresser. The two connected at Stanford over a love of post–World War II apparel; they admired its timeless style, its sturdy construction. Selling vintage clothing felt like a natural fit for the two friends. Their fledgling company, Postwar Vintage, displays its goods at Blue Bin Vintage, a Palo Alto co-op. Mahadevan and Sights hunt for intriguing pieces wherever they go, reveling in, as Sights says, “finding something, appreciating it and passing it on.” Once Postwar Vintage opens a storefront, its founders plan to continue offering a wide range of goods with a history—and to honor the stories behind what they sell.

—Valerie Trapp, ’22
EXAMINED LIFE

Paying It Forward

John Arrillaga attended Stanford on a basketball scholarship. Then he transformed the campus for those who followed.

BY SAM SCOTT

JOHN ARRILLAGA SR., ’60—the pioneering Silicon Valley developer who became one of Stanford’s greatest benefactors—died in January, leaving a legacy literally built into every corner of campus.

Over decades, Arrillaga’s donations, drive and hands-on work transformed the layout of the university, from the Escondido Village Graduate Residences to the Physics and Astrophysics Building to the renovated Old Union, among many, many other projects he built or contributed to. The campus community is generally familiar with his construction projects for Stanford Athletics—including several varsity facilities as well as recreation centers on both east and west campus—but they don’t know the half of it, says former provost John Etchemendy, PhD ’82, a close friend. “There are hundreds. Most of them don’t have his name.”

Perhaps no project better illustrates Arrillaga’s energy, devotion and meticulousness than the one he believed should bear no person’s or corporation’s name—the reconstruction of Stanford Stadium. It was a mammoth task he largely funded and personally oversaw down to the smallest details, including selecting every single palm tree, creating his own seating designs and tracing into the dirt the path of the exterior walkways.

Demolition of the old stadium began just moments after the final home football game of the 2005 season, an act of confidence that set the tone for what followed—construction of a brand-new facility in nine months. The stadium was ready for the Cardinal’s home opener, an astonishing turnaround time for an endeavor that easily could have taken years. “The difference was John Arrillaga,” says Ted Leland, PhD ’83, Stanford’s athletics director from 1991 to 2005.

Arrillaga was not your typical athletic booster, Leland says. He offered scant opinion on coaches, teams or players. If you were with Stanford, he was with you, and he supported the program by supplying his professional expertise. “When it came to how wide the hallways were going to be in a sports center, he had an opinion on that, I’ll tell you,” Leland says. “He was just a fabulous guy who loved Stanford, who was a partner with the president, the provost and the athletic department.”

One of five siblings, Arrillaga grew up in a working-class family in Inglewood, Calif.—his mother was a nurse; his father was a laborer. In high school, the man Fortune would later declare the richest man in Silicon Valley outside the tech sector couldn’t afford a suit jacket for his senior portrait. The one he borrowed from his chemistry teacher had sleeves six inches too short for his 6-foot-4 frame.

He attended Stanford thanks to a basketball scholarship that covered tuition. To pay for living expenses and books, he worked a number of jobs, from washing dishes to delivering mail to gardening, a lifelong passion reflected in the attention to landscaping in his professional work. During his senior season, he was the basketball team’s captain and leading scorer as well as a third-team All-American. After graduation, he followed his Basque roots to Spain and played professionally in Bilbao. He finished his single season there as the Spanish league’s second-highest scorer. “From the first minute of practice, Arrillaga left everyone speechless,” a Spanish journalist recently wrote.

Upon his return home, Arrillaga sold insurance for a year before landing on the career that would make him a billionaire: purchasing farmland in the Santa Clara Valley and building—then leasing—corporate offices for the exploding tech industry.

He began repaying the debt he felt he owed to Stanford almost immediately after graduation, at first with small gifts to the athletics department and later with larger sums dispersed throughout the university. In 2006, Arrillaga gave $100 million, the largest donation by a living individual in school history until
seven years later, when he made a $151 million gift. Beneficiaries of his generosity were often students much like the one he had been.

More than 300 students have benefited from the need-based and athletics scholarships established by the Arrillaga family—nearly 50 this academic year alone. “I will be forever indebted to him and his family,” says Jayne Appel Marinelli, ’10, who starred for the Cardinal women’s basketball team and played seven years in the WNBA. “I would not have been able to have the opportunity to go to Stanford and Stanford opened the door to the rest of my life.”

Etchemendy remembers Arrillaga coming to him troubled by how much debt Stanford medical students were incurring. Etchemendy’s initial response was to reassure him that Stanford’s numbers were much lower than those of many comparable medical schools, but Arrillaga was unpersuaded. In 2020, he committed $55 million to the School of Medicine to eliminate debt for income-qualified students.

Arrillaga, who worked until his death, was a constant presence on campus, driving around on a golf cart (often giving rides, always stopping to pick up garbage) or slipping into Jimmy V’s Sports Café, where he might’ve shared your table on a crowded day, leaving you none the wiser who he was. He could delight people with his card tricks—perfected while he was recovering from mononucleosis as a student—but he avoided the spotlight. Even the stadium’s ribbon-cutting lasted a relative blink of the eye.

Leland says administrators had to plead with Arrillaga to finally put his name on a building, convincing him that the gesture would inspire students and other donors alike. Perhaps the naming that most deeply mattered to him was that of the Frances C. Arrillaga Alumni Center, named after his first wife, Frances Arrillaga, MA ’64, MA ’65, who died in 1995 of lung cancer.

The couple had two children, Laura Arrillaga-Andreessen, ’92, MBA ’97, MA ’98, MA ’99, and John Arrillaga Jr., ’92, MBA ’98. Both are philanthropists in their own right. Arrillaga later married Gioia Fasi Arrillaga.

Arrillaga’s generosity extended beyond Stanford. He built and donated dozens of buildings for police departments throughout Silicon Valley, as well as libraries, community recreation centers, veterans’ facilities and a Ronald McDonald House. But his name is forever linked with his alma mater.

In 2009, Arrillaga was awarded the Degree of Uncommon Man, Stanford’s highest honor, for his service to the university. “Our community mourns the loss of John Arrillaga, whose extraordinary generosity has had a profound impact on our university for more than half a century,” President Marc Tessier-Lavigne says.

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hen Ricardo Muñoz was 10 years old, his mother sat him down for a talk. Their family was leaving Joka, Peru, for better educational opportunities in the United States. Later, she said, they would return so that Muñoz could share what he learned. “She taught me two things that day,” Muñoz says. “One was that knowledge is worth traveling halfway around the world to get. And the second was that once you get it, you share it.”

Muñoz, ’72, has made it his mission to share. The former chief psychologist at San Francisco General Hospital has been a pioneer in preventing people with some symptoms of depression from developing a clinical disorder, and in finding novel ways to share therapeutic tools with the world. The need for his work has never been greater: Before the COVID-19 pandemic, the Centers for Disease Control and Prevention estimated that about 11 percent of U.S. adults had symptoms of a depressive disorder or an anxiety disorder. In 2020, that rose to 40 percent.

“There’s clear evidence that we can prevent clinical diagnoses of major depression,” says Muñoz, now a distinguished professor of clinical psychology at Palo Alto University and the founder of the Institute for International Internet Interventions for Health (I4Health). His work demonstrates the power of teaching people how to manage their mood early, while depression is perhaps still a storm on the horizon. “We now have the knowledge to do it, and it’s time to put that into practice and to make it available to anybody in the world,” he says. Preferably for free, and in as many languages as possible.

As a child in Peru and in the Mission District of San Francisco, Muñoz wanted to be a priest, and then a scientist. But in the spring of his sophomore year, he took Introduction to Psychology, and he was hooked. “Psychology tests things, So you don’t have to take things on faith,” Muñoz says. “And of course psychology was focused on helping people, which is why I wanted to become a priest in the first place. It was a beautiful combination of science and helping people live good lives.”

But just a few weeks into Muñoz’s doctoral program at the University of Oregon, a remark by a lecturer made him question his path. “[He said] we should be going out into the community and sharing what we’ve learned as mental health professionals so that we can prevent the suffering that brings people to our offices,” Muñoz says. “Here I was about to start five years of doctoral work to become a therapist, and this guy is saying that that won’t be enough!”

Muñoz decided then and there that he would dedicate his professional life to prevention in addition to treatment. Our modern understanding of depression was in a nascent stage. Cognitive behavioral therapy, which teaches people how to alter their thoughts and actions to improve their mood, was only just starting to gain traction. And preventing depression? That just wasn’t a thing. Even by 1984, a National Institute of Mental Health pamphlet contained the statement, “In general, the onset of a clinical depression cannot be prevented.”

When we start to feel low and lack energy, we often stop doing activities we previously enjoyed—waiting, perhaps, until we feel better. But, Muñoz says, it is exactly those activities (talking with a friend, being out in nature, having a special event to look forward to) that elevate our mood and can buffer us against developing clinical depression.

In graduate school, he worked on a study that showed that when people resumed
pleasurable activities even though they didn’t feel like it, their moods improved, which in turn made them able to do more activity. “As a therapist,” Muñoz says, “what I want to do is first begin turning the gears myself and then have the patient grab aholt of the gear and turn it herself.” He did similar studies focusing on “self talk”—how people think about the events in their lives—while another team looked at improving interpersonal skills. All three methods reduced symptoms of depression.

Muñoz began dreaming. If clinicians could use these techniques to help people who were clinically depressed, he thought, why not teach them to people before they got to that point. “Most of this stuff is common sense,” he says. “The key is to do it systematically.”

He returned to San Francisco in 1977 in hopes of finding an academic position close to his parents. (He still translates during medical appointments for his mother, who is 93.) Instead, the UCSF department of psychiatry at San Francisco General came calling. The public hospital is the city’s largest acute inpatient and rehabilitation facility for psychiatric patients. In 1985, Muñoz opened its depression clinic—the first cognitive behavioral service at UCSF. “I was working with very-low-income people,” he says. “Many of them didn’t speak English, and I began working on how to prevent depression in people who have very few resources.” Muñoz trained new clinicians to turn psychological principles into actionable steps for their patients—“things that they could do to make their complicated lives a bit better,” says James Gross, a professor of psychology at Stanford who trained in the UCSF program as a postdoc. “So this is not just a dreamer, right? This is somebody who takes those dreams and finds very concrete ways of turning them into reality.”

At SF General, Muñoz also developed the Mothers and Babies program for pregnant women who are at risk of depression. The program uses social learning ideas—like a mother imagining the kind of relationship she wants to build with her child and how her thoughts and actions can influence that relationship. In a pilot study, 14 percent of women in the program experienced major depressive episodes in the first year after birth, as compared with 25 percent of the control group. Other researchers have gone on to use and test the program, with some reporting reductions as high as 53 percent.

In 2012, Muñoz co-authored “Major Depression Can Be Prevented,” a meta-analysis published in American Psychologist of existing research showing that currently available techniques could prevent up to 38 percent of cases of clinical depression. He thinks the health field is moving—slowly—in the right direction, though he laments that most insurance companies won’t pay for treatment until a person has met the clinical criteria. He points to another preventive treatment, flu shots, which are generally 40 percent to 60 percent effective: “They still want us to get them because that’s a significant reduction.” Applying the same principle to depression, he says, “would reduce so much suffering.”

In the mid-’90s, Muñoz wanted to broaden the reach of his work, so he turned to a new thing called the World Wide Web. Initially, he studied the online efficacy of a smoking-cessation program he had previously run by mail. About 20 percent of the 9,000 online participants were able to quit smoking using the program’s behavioral techniques, which compares favorably with the nicotine patch’s 14 percent to 22 percent success rate. But to get the same number of people off cigarettes via the patch would have cost $2 million in patches alone. “Wow, right? We did it for $200,000,” Muñoz says. He kept the website open long after the formal study ended, which allowed another 34,500 people to embark on the free program. “I should have closed it, technically,” he says, “but . . . I mean, I can just keep on helping people.”

Muñoz joined Palo Alto University in 2012. That year, he also founded i4Health, the first step in creating what he has dubbed digital apothecaries—online repositories of free, self-help mental health content. Muñoz grows animated as he talks about his vision for such sites—seals of approval, clear information about the efficacy of each treatment, and, most of all, the sheer number of people who could find help there, not least for depression. “Now, it won’t work for everybody,” he says, “but nothing does.”

“A lot of accomplished researchers and academics develop really effective, cutting-edge interventions and treatments, but they’re not always accessible to the masses,” says Alinne Barrera, a professor at Palo Alto University and an associate director of i4Health. “That’s at the core of what he does. He always says he wants to give psychology away.”

Barrera, who has modeled her own large online studies on Muñoz’s, believes digital tools are key to how he reaches diverse—in particular, Spanish-speaking—communities, which “isn’t always the focus or mission of a lot of researchers and academics.” The offerings can also reduce the stigma around therapy. “If you’re logging in online, no one’s
going to question that. It’s very different than ‘I’m going to this clinic’ or ‘I’m going to this hospital.’ That’s a huge barrier.”

Over the past two years, the pandemic has given medicine a firm technological shove into the future. Today, it’s commonplace to meet with a therapist online—provided you can find one. There aren’t enough mental health clinicians in the United States to handle the number of people who need them. Once a therapist’s 50-minute hour is used, it’s gone, and it likely helped only one person. Therapeutic interventions that can be used by anyone, anytime, anywhere, over and over again, Muñoz believes, are the way to help most of us.

The potential of online self-help therapy is backed up by research. A recent German study showed that among adults with depressive symptoms who didn’t yet meet the criteria for clinical depression, 41 percent developed depression within a year. With web intervention programs, that rate was cut to 27 percent. “The world has now caught up with where Ricardo has been for quite some time,” Gross says. Muñoz has long served on consensus committees, convened jointly by the National Academies of Science, Engineering and Medicine, on preventing mental health conditions. The latest committee report, from 2019, recommends disseminating the current knowledge on prevention to as many people as possible.

“Will we ever be able to get to a world without depression? I don’t know,” Muñoz says. “We have the knowledge now to get halfway there. [Depression] is a really painful experience that should be prevented, if possible. There’s an ethical obligation.”

At 71, Muñoz practices what he teaches in order to manage his own mood. He exercises; he spends time with his wife, children and new grandbaby; he looks forward to the future. And 50 years into his career, he marvels at the opportunities he has to share his knowledge all over the world. Recently, he got a message asking whether he was the Ricardo Muñoz from Joka, Peru: His digital smoking-cessation program had made it back to his family’s hometown.

Summer Moore Batte, ’99, is the editor of Stanfordmag.org and author of Name and Tame Your Anxiety: A Kid’s Guide. You can reach her at summerm@stanford.edu.
LAST FALL, I TOOK A MATH CLASS, and it was hard. I hesitate to write an essay centered around a hard college class, but I will because it mattered to me. I am a math major, in my senior year. Before Stanford, I served 10 years in the Navy, some of them as a SEAL, and before the Navy, I worked construction and cleaned office toilets. This class, a graduate course in measure theory, was a prerequisite for things I wanted to do after. “I imagine a future like the one shown in *Cosmos,*” I’d written in my Stanford application essays, “in which humans have set aside their differences and are exploring distant stars in intergenerational starships.” I was still in the Navy when I wrote that, and the TV series *Cosmos: Possible Worlds* was what first inspired me to learn more, to take night classes, and to want to be a part of that future.

But this math class, it seemed, would not let me. “Here is a function,” one problem might ask, “whose integral over the n-dimensional real numbers is nonzero,” and I would have to prove something about its average outside of a certain n-dimensional radius. Fall quarter was supposed to be my renaissance, my chance to shake off the dust of two years of isolation, to open up to the world. Instead, I quit my extracurriculars, bailed on social events and turned my daily workouts into walks—during which I reviewed flashcards. I spent mornings on lecture notes, afternoons in office hours, and still I fell behind. I’ve heard people compare math to weightlifting for your brain, but at the time I imagined my brain matter more like a BUD/S student, a SEAL candidate-in-training: hunched over, limping, unevenly sunburned, thighs and armpits chafed raw from the sand, scalp bleeding from where the boat sat on it.

In the throes of all this, I began to wonder, is this really what I’m here for? To race between classes, homework and office hours, to wolf down lunches during online lectures, then spend afternoons in a dim room staring at a blackboard covered with symbols that I barely understand? Outside, people are laughing. They are showered, groomed and wearing nice clothes. They play volleyball on weekends. Not to mention, I’d read somewhere about the Big Freeze and the Big Crunch, how some cosmologists believe the universe will eventually either go on expanding until the last hydrogen atom stops twitching and everything is a homogeneous entropic mush; or it will sling-shot back from its expansion and collapse into an infinitely small point of infinite energy, the ultimate hard reset of space and time. What was the point, I wondered, of going to any star at all when they will all one day either extinguish or implode?

My answer came from my metal-obsessed younger brother, who one evening told me to check out an album by some Greek power metal band called Firewind. I did, and one song was a tribute to Leonidas, the leader of the 300 Spartans who, along with a few thousand other Hellenes, fought to death against the vast and technologically superior Persian army at the Battle of Thermopylae. “Molon labe,” Leonidas
famously told the emissary who offered them a chance to surrender and put down their weapons. “Come and take them.” His army fought to the last man, even after they were betrayed and outflanked, never with a hope of survival, but only to hold off the advancing forces long enough for the other Hellenes to rally, which they eventually did.

What of these Spartans? They could not even be sure that their struggle would matter: Hellenic city states, at the time, were divided and quarrelsome; many had already surrendered and defected. Could they have imagined that, by holding on to this antiquated code of honor, by defending this mountain pass in a land that was not even yet called Greece, they were preserving an alphabet, a system of citizen empowerment, and methods of scientific reasoning that would one day sweep the globe?

To take a more modern example from Cosmos, what of Nikolai Vavilov, the Russian geneticist who, driven to end world hunger, traveled the world, risking his life to gather specimens of the hardiest food plants, and who, committed to science over demagoguery, died in prison? Or of his associates who guarded the collected specimens during the 28-month siege of Leningrad, and who, adhering to their code of scientific honor, died of starvation while surrounded by literal tons of samples of edible grains and rices? Could they have imagined that, as Neil DeGrasse Tyson tells us, if we ate today, no matter where we are in the world, we likely owe it to them?

Now, I know better than to compare a math class to ancient combat or to the sacrifice of geneticists. But I can still be inspired by them. Because to me, both Spartans and scientists had one thing in common: a concern for the future. “Rise from the ashes,” one Firewind song says, “Renew the devotion…. To be sure that tomorrow will come.” And I cannot imagine a better answer to my why. Not that tomorrow will be glorious or divine, or even better than today, which is so much to ask of a tomorrow, but that it will be there. That, at dawn’s first cracking light, someone you care about will exist to savor the warmth—a thought that, every day that passes, seems less guaranteed.

I believe, then, in doing my part, whatever it is, whatever small piece of accidental existence has been assigned to me that contributes to the world turning. And I also believe this: that the battles worth fighting are the ones that we are not sure that we can win. I believe in humanity, and that we cannot know what we are defending. It is possible, as some cosmologists believe, that we will one day command the energy of a galaxy and escape to another universe altogether. But first, each tomorrow must come. And we come from a long line of ancestors who, when faced with an endless desert, a barren field, or a crashing ocean with no land in sight, decided to take one more step, plant one more seed; to look up at the stars and hoist, one last time, some ragged and windbeaten sail.

I’m writing this in hindsight, of course. I finished the math class—lost sleep and hair and sanity and acquaintances for it—and still my grade was not good enough. This is not how I expected things to go, and I will have to find another way. But I’m wondering whether there’s anyone else out there who has felt this: Maybe your nonprofit was supposed to take off, you were going to launch that community-supporting small business, or you should have landed that promotion and be able to provide for someone you care about. Maybe you thought you’d have a sponsor for your art by now, or simply have found love.

And all this has been said before, I know, but maybe because it keeps needing to be said. Not because, as French author André Gide wrote, “nobody listens,” but because we keep being human. Because sometimes we forget that our struggles do matter, that our persistence may have payoffs we can’t imagine. Because we need to be reminded that our time—the time of pandemics and civil reimagining, of cyber threats and rising sea levels—is not the time to compromise or question, to self-criticize or doubt. This is the time to spit on our blisters and plant our feet, to crank the tourniquet and grit our teeth; time for rise-up songs, for stand-up-and-fight songs, played from the ancient tune in our bones. It’s time for the answer—the only answer I know—for why we do any hard thing: because there is a reason, a reason why we do anything, a reason to care about will exist to savor the warmth—a thought that, every day that passes, seems less guaranteed.

“Honour to those,” wrote poet Constantine Cavafy, “who in their life set out and guard their existence may have payoffs we can’t imagine.”
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Carolyn Bertozzi wanted to see and work with the sugars that coat our cells. So she created a whole new approach to chemistry.

That was just the beginning.

Carolyn Bertozzi’s introduction to the sugars that coat the outsides of our cells was short and, well, sweet. She was taking a biology course early in her undergraduate career at Harvard when the professor likened a cell to a peanut M&M. Both, he told the students, were encased in a sugar coating. At this moment in the mid-'80s, a TV-obsessed America couldn’t help but know about the candy’s sugary exterior. “The milk chocolate melts in your mouth, not in your hand” was one of the era’s most familiar commercial jingles. But why our cells were similarly dressed up was a murkier matter even to Bertozzi’s professor. Perhaps their sugary exteriors also provided a protective barrier, he told the class. No one knew the extent of it.

As first impressions go, it wasn’t much. Bertozzi wrote down the analogy and moved on with no reason to think she had just gotten the first taste of the realm of research that would make her a scientific superstar: a MacArthur “genius” at 32, the first woman to win the $500,000 Lemelson-MIT Prize, and a perennial presence in future-Nobel-laureate guessing games. It was later, in graduate school at Cal, that Bertozzi would become steeped in glycoscience.

Over the ensuing decades, the M&M metaphor has stayed with Bertozzi—a chemical biologist who directs Stanford’s Chemistry, Engineering and Medicine for Human Health institute, aka ChEM-H—as a way to illustrate a still underappreciated fact: Our cells—like every cell on Earth—are shrouded with sugars as surely as the famous colorful confections, and yet we know little about our own candy coating. Bertozzi has spent her career trying to understand, explore and exploit the mysterious, apparently indispensable nature of these sugars, with implications for how we treat everything from common cancers to rare genetic syndromes.
Her enthusiasm hasn’t exactly been contagious. The field may have a disarmingly familiar name—glyco— is from the Greek word for sweet—but it has been neglected in part because of its complexity. The sugars on our cells form branching chains called glycans that are daunting in structure. Whereas life’s other building blocks, like proteins, unfold according to genetic templates, the glycans are ultimately products of metabolism that can develop in any number of ways. A small number of them can combine in paralyzingly plentiful ways, and even then, their final form is defined by a variety of enzymes. Most researchers have preferred to focus on fast-advancing areas like RNA, DNA and proteins, leaving sugars as the dark matter of the biological universe, says Ajit Varki, a glycoscientist and physician at UC San Diego. Everyone knows they’re exerting untold influence, but hardly anyone studies them.

Bertozzi is trying to drag sugars into the light. After nearly two decades as a professor at UC Berkeley, she uprooted her lab in 2015 in search of resources at Stanford—including an on-campus hospital and the school’s entrepreneurial culture—that would better enable her to bring her academic work into the real world. In the past six years, she has co-founded eight startups, most working on sugar-based diagnostics or therapeutics, including one, Grace Science, directly inspired by the dire need of a young daughter of Stanford alums. Perhaps none is more intriguing than Palleon Pharmaceuticals, which makes a sugar-targeting drug that Bertozzi hopes will usher in a new form of cancer treatment—and raise the flag for glycoscience. The drug begins clinical trials this year.

“If we’re successful, history will look back on this field and wonder how people could have been so blind. But that’s how it is.”

If Bertozzi is hopeful that Palleon can significantly expand the number, not least because the company believes more tumors cloak themselves in sialic acids than exploit the protein receptors blocked by Keytruda. Varki, who has no connection to Palleon, says the approach “has a lot of promise,” though Bertozzi acknowledges success is far from assured. Any drug that reaches human trials must better enable our immune system to stop cancer from activating “off” switches within our immune system. (With its awesome, potentially self-destructive firepower, our immune system absolutely requires fail-safe buttons.) Perhaps the best-known immunotherapy patient is former U.S. president Jimmy Carter, who was all but pulled from the grave by a treatment called Keytruda after metastatic melanoma spread to his brain and liver.

“But that’s how it is. Glycoscience has been a blind spot in medicine and in biology and in biopharma.”

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“If we’re successful, history will look back on this field and wonder how people could have been so blind,” Bertozzi says.

“As is probably obvious, the sugars on your cells don’t bear much resemblance to C&H crystals, or whatever goes in your morning coffee (or, frankly, to the exterior of M&M’s). Glycans are long, swaying, branching chains of complex carbohydrates that, in humans, are formed from nine types of simple sugars, or monosaccharides. (Think that’s complicated? In bacteria, glycans are composed of hundreds of types.) Together, these chains sprout from the surface of a cell like an overgrown garden, creating the blurry halo that often surrounds textbook photos of a cell.

But while glycan gardens might seem wild, on healthy cells they create distinct patterns—one liver cell will have a similar sugary decoration to another—that proteins, bacteria, viruses, cells and other passersby decode to know who they are dealing with. Sugars are how sperm know they’ve reached the egg, and why your immune system would rise in rage at a transfusion from the wrong blood type. Bertozzi likens the sugars to a cell’s barcode, whereas Laura Kiessling, a glycoscientist at MIT, compares glycans to a cell’s identification card (it helps to stay agile with metaphors when considering glycans). As with the ID in your wallet, there are bad actors who’d like nothing better than to forge it.

For decades, scientists have known that the glycans on a variety of cancerous tumors undergo dramatic changes distinguished by the proliferation of a particular sugar called sialic acid. But it was not clear to what end. During the past decade, Bertozzi’s team, as well as others, have revealed sialic acid’s insidious trick. As the sugar thickens on a tumor, it lulls the immune cells—which otherwise might find and fight it—to sleep. In another context, sialic acid’s calming influence—essentially a barcode signal indicating “self”—might be a virtue, quelling autoimmune attacks, for example. But cancer is using the sugar for nothing so noble. It’s cloaking itself in a false identity to hide from our immune protectors. In response, Palleon has created a product that scythes the sialic acid with a “molecular lawn mower,” stripping away the cancer’s mask and exposing it to the newly awakened immune system. Or that’s the goal.

In concept, the drug is similar to immunotherapies developed in the past decade, which likewise try to stop cancer from activating “off” switches within our immune system. (With its awesome, potentially self-destructive firepower, our immune system absolutely requires fail-safe buttons.) Perhaps the best-known immunotherapy patient is former U.S. president Jimmy Carter, who was all but pulled from the grave by a treatment called Keytruda after metastatic melanoma spread to his brain and liver.

But only a minority of eligible cancer patients respond to such treatments. Bertozzi is hopeful that Palleon can significantly expand the number, not least because the company believes more tumors cloak themselves in sialic acids than exploit the protein receptors blocked by Keytruda. Varki, who has no connection to Palleon, says the approach “has a lot of promise,” though Bertozzi acknowledges success is far from assured. Any drug that reaches human tests has excelled in lab and animal models, yet the vast majority fail to clear the remaining hurdles. Nevertheless, she is optimistic. “We at Palleon, and more broadly the glycoscience people, we’re quite bullish about this,” she says.
Her foray into entrepreneurship adds a new chapter to a career already distinguished by a talent for building new chemical tools and methods. Indeed, when people lay their bets on Bertozzi’s winning a Nobel Prize, it’s often for her most famous tool—bioorthogonal chemistry, a term she coined for a field her lab pioneered that allows scientists to pursue chemical reactions inside a living system without disturbing it.

Imagine a white-coated chemist mixing chemicals in a sterile flask in a sterile lab where heat, light, acidity, temperature, etc., are all under her total control. Now imagine her trying to pursue similar reactions in a living cell where nature dictates the environment. Classically, it would have been impossible, especially without harming the cell. But over the course of more than a decade, Bertozzi’s lab found better and better ways to do just that—by developing very fast, very selective and very nontoxic reagents that react with each other—and only each other—amid the distractions of a living system.

Bertozzi developed the approach, originally, out of frustrations with the difficulties of studying glycans. In the late ’90s, no imaging technology was available to see the sugars in vivo, as was possible with proteins or nucleic acids, an obstacle that was preventing Bertozzi from pursuing ideas like using changes in the glycans as diagnostics for diseases.

And so Bertozzi devised an elegant solution born of an uncommon expertise in both chemistry and biology. She duped cells into digesting an unnatural sugar so similar to the real thing, the cells unquestioningly added it into their glycan coats. This unnatural sugar was utterly inert to its new surroundings, but it was extremely reactive with another chemical it was then exposed to. And this second chemical came carrying fluorescent probes that would glow to reveal their new homes. It was like a benign Trojan Horse. The cells welcomed in gifts of sugar and gave them pride of place in their glycan coats, and the sugars turned around and provided a landing pad for tools that allowed Bertozzi and colleagues to see and manipulate the cell’s glycans. The cells hadn’t been harmed or significantly affected, but their sugary canopies had been exposed.

“Think of it as finding needles in a haystack,” says Thomas Cech, a biochemistry professor and Nobelist at the University of Colorado who helped select Bertozzi as an investigator for the Howard Hughes Medical Institute in 2000. “With Carolyn’s chemistry, every needle now glows in the dark.”

Bertozzi and her students and postdocs painstakingly honed the process for years, leading to a moment in 2008 when they released a paper showing the glycans of an embryonic zebrafish lit up like a Christmas tree, the first time the glycome of a living organism had been imaged. It was, in the words of chemist M.G. Finn, like a “global positioning system” for tracking sugars through organisms.

The technique continues to open new windows into the glycan world. Last year, Ryan Flynn, PhD ’15, MD ’17, a postdoc in Bertozzi’s lab, used bioorthogonal probes to reveal glycans dangling from ribbons of RNA on cell surfaces, upending accepted wisdom that glycans were rooted in either proteins or fats embedded in the cell. RNA, meanwhile, was supposed to exist only within a cell.

“It’s really a bombshell because the discovery suggests that there are biomolecular pathways in the cell that are completely unknown to us,” Bertozzi, the study’s senior author, said at the time. She also noted the magic of interdisciplinary collaboration: “Ryan is RNA, I’m glycans. We have completely different backgrounds.” The discovery may ultimately have implications for the treatment of autoimmune diseases.

Indeed, from the start, it was clear that bioorthogonal chemistry had broad applications. Bioorthogonal approaches have been used to observe and manipulate lipids, proteins and nucleic acids, and to stitch together antibody therapies with drug payloads, as well as to engineer and manipulate glycans with a precision previously associated with the molecular surgery of recombinant DNA. Most significantly, it has changed where chemistry is possible. “What Carolyn’s vision has done, she’s replaced the glass flask with a cell, with a zebrafish,” says Neal Devaraj, PhD ’07, a professor of chemistry and biochemistry at UC San Diego, who was earning his doctorate in electrical chemistry at Stanford when he saw Bertozzi speak on her zebrafish work, a “mind-blowing experience” that steered his career toward studying how nonliving matter such as simple organic molecules can assemble to form life. “That is a fundamental paradigm shift in the way we think about doing chemistry.”

And one day, the chemistry Bertozzi enabled may occur inside you. In October 2020, Shasqi, a start-up that Bertozzi advises, began the first use of bioorthogonal chemistry in humans during clinical trials of a targeted cancer treatment. In Shasqi’s proposed therapy, a tumor is injected with a biopolymer before the patient receives an “encaged” dose of chemotherapy. Only upon reaching and reacting with the polymer at the tumor is the chemotherapy released. The goal, Bertozzi says, is to deliver the chemo with a level of precision that enables higher doses while protecting the rest of the body from chemotherapy’s toxicity.

There are plenty of other reasons pharmaceutical companies might want medicines to assemble in the body, Devaraj says—size being one. Neurological therapies, for example, may better slip past the filter of the blood-brain barrier if they are transmitted in components, he says, uniting only once they’ve reached the brain. He expects many companies to follow Shasqi’s lead. A Nobel Prize for work of such influence, he says, is very plausible. “I may even argue it’s just a matter of time.”

O. chem

Before she was a rock star scientist, Bertozzi was almost a rock star, or at least she came closer than your average member of the National Academy of Sciences. A play-by-ear pianist who still relaxes by figuring out pop tunes, Bertozzi was the keyboardist in a hair metal band at Harvard called Bored of Education, alongside guitar wizard Tom Morello, who later founded Rage Against the Machine and Audioslave. The world is a poorer place...
Bertozzi had been flirting with becoming a doctor when she fell so hard for O-chem her sophomore year that she couldn’t tear herself away from her textbook long enough to go out on Saturday nights.

for the dearth of photographic evidence of their collaboration. (Bertozzi has photos of Morello in leather-panted glory but not of herself. She consoles the reader by saying her hair was much as it is now.) And she sometimes jokes about missing her chance to follow Morello to Los Angeles.

In reality, she was probably never destined for an artistic career. She was the middle daughter of an MIT physics professor and of a secretary turned stay-at-home mom who had been denied the chance to go to college by her parents and who was determined that her own daughters would receive a far different message. Bertozzi grew up in a household where academics were central, grad school was assumed, and science and math reigned supreme. (Her dad, an inveterate builder and tinkerer, also fostered a valuable DIY ethic by having Bertozzi do masonry and lay concrete.) In Bertozzi’s telling, it was her elder sister, now a mathematic professor at UCLA, who was the obvious brain. Her own application to Harvard, she says, was fortified by her soccer talents, although she didn’t play there for long. Once practice and games conflicted with labs and class, there was only one outcome.

Plus, there was soon organic chemistry to think about. The course is famous for weeding out premeds, and so it did here, albeit not for the typical reason. Without any clear career ambition, Bertozzi had been flirting with becoming a doctor when she fell so hard for O-chem her sophomore year that she couldn’t tear herself away from her textbook long enough to go out on Saturday nights. A torture to many was pure pleasure for her. It just made intrinsic sense.

Alas organic chemistry—or its scholars of that era—didn’t love her back with equal gusto. Despite being the top student in the course, she struggled to get a research job on campus, a fact that to her seemed suspiciously related to her being a woman in an overwhelmingly male department. She ended up working for a junior faculty member in physical chemistry—ostensibly a less prestigious post—but he challenged and championed her, and her senior thesis project, in which she built from scratch something called a photoacoustic calorimeter, won a prize. (It also reinforced a fondness for the road less traveled—at Cal, she chose another junior faculty member as an adviser, the late Mark Bednarski, who introduced her more deeply to sugars. As a postdoc, she worked in a biology lab, a disciplinary zigzag then frowned upon.)

It wasn’t just gender that marked Bertozzi as an outsider at Harvard. It was also sexuality. In 1986, during her sophomore year, the Supreme Court handed down the Bowers v. Hardwick decision upholding an anti-sodomy law and creating an unsettled feeling in Bertozzi that she, as a lesbian, had been criminalized. Maybe there wasn’t reason for concern in Cambridge, Mass., but what about 35 miles away in New Hampshire or whatever jurisdiction she might cross into? Her decision to go to grad school at Berkeley wasn’t only about the school’s excellence in chemistry. The organic chemistry department had a small but significant female presence. And it was a stone’s throw from the most gay-friendly city in the country.

A generation later, she still feels a duty and a desire to be a role model as a lesbian scientist and to talk about struggles she lived through, from the AIDS crisis that shaped her early years in the Bay Area and motivated her goal to create medicines to fight for marriage equality that provided a discordant soundtrack to some of her most fulfilling years. Bertozzi has three sons with her wife, the first born just before California banned same-sex marriage in the state. She remembers feeding him when he was 2 months old, with anti-gay marriage ads blaring on the TV and the anxiety of not knowing whether her parental rights would survive the election. “I think it’s important for me to bear witness,” she says. “I never want to be like, ‘Well, all that is behind me; now I’m just like everybody else legally.’ No, I don’t think that does anyone a service.”

To save Grace
Service is a big part of what drives Bertozzi. She is renowned for her commitment to her students. Her first doctoral advisee, Lara Mahal, says Bertozzi demanded a lot—Mahal almost quit in protest at one point—but gave back just as much. “It’s part of why she is incredibly successful: She is so giving and generous, and those are not words used with many highly successful scientists,” says Mahal, now the Canada Excellence Research Chair in Glycomics at the University of Alberta. “It has always been a two-way street with her.”

In Silicon Valley, it’s easy to perceive her surge into start-ups as a play for financial glory, an assumption that makes Bertozzi laugh. The road to riches in biotech is long and unlikely, she says. “If you really want to make money, go be a hedge fund manager or something,” she says. “Don’t be an academic founder of a biotech.” Instead, she says, her emergence as serial entrepreneur is about making sure her lab’s work has the maximum impact possible. Sometimes, there’s no better way of doing that than doing it yourself. And sometimes it’s just what fate seems to want.

Bertozzi wasn’t even finished unpacking her moving boxes in September 2015 when she got an out-of-the-blue email from a stranger, Matt Wilsey, ’00, MBA ’08, with an opportunity for research funding. It was exactly what she had come to Stanford for, yet the details were like nothing anyone could have anticipated.

Wilsey’s daughter Grace had been born in 2009, and a host of troubling symptoms had unfolded—weak muscles, difficulty eating, tearless eyes, poor sleep, development delays and more—that would confound scores of specialists over the coming years. It was only
when she was 3 that she was diagnosed with a deficiency on a single gene, known as NGLY1, which was causing a vanishingly rare disorder that was completely unstudied and would almost certainly remain so. The family had been able to connect with a handful of others around the world enduring the same odyssey, but the number of known patients was in the double digits. In the harsh logic of business, there was almost zero incentive for anyone to look for a cure.

In 2014, Wilsey and his wife, Kristen, ’03, took the onus on themselves to change that, creating a foundation to fund research with support from friends, loved ones and other contributors. Wilsey had already recruited dozens of scientists when multiple people recommended he try Bertozzi. The NGLY1 gene was known to be affiliated with sugars, but nobody knew why a deficiency there would be so devastating.

For Bertozzi, the decision to get involved wasn’t difficult. As a mother of children around Grace’s age, she could feel the terror of such a mysterious, possibly fatal diagnosis. As a glycoscientist, she knew she had rare skills to help. And as someone intent on translating her research into the real world, she had found exactly what she came for. She convened a group of postdocs and students to collaborate.

Results were not long coming. Bertozzi’s lab drew a bead on NGLY1’s role in initiating a cellular-garbage recycling process that’s responsible for chopping up old and damaged proteins. In the cells of Grace and the others, NGLY1 wasn’t there to start the process—a step that involves removing a sugar from the molecule that does the degrading. And it was leading to a destructive pile-up of trash.

The particulars of the findings were transformative, Wilsey says. Not only did they have direct implications for Grace’s disease, but the mechanism had relevance for degenerative diseases, like Parkinson’s, as well as for cancer, where conversely you might want to thwart garbage removal to cause malignant cells to die. These were diseases that would attract investment dollars that could transform the scale of their efforts. “All of a sudden it opened up this whole new universe,” Wilsey says. “I mean, it was like we were stepping through the looking glass.”

In 2017, Wilsey and Bertozzi co-founded Grace Science, intent on putting the research into action. The company expects to begin clinical trials on a gene therapy for NGLY1 in early 2023, an agonizing wait for the Wilseys but no time at all compared with the norm. “It’s lightning-fast in the drug-development world,” Wilsey says.

There are currently about 100 known people with NGLY1 deficiency in the world, and Bertozzi has met many of them through gatherings organized by the Grace Foundation. Although her career brims with accolades, connecting personally with people whose health may someday benefit from her work is “one of the greatest privileges of my career as a scientist,” she says. Success on their behalf would be sweet.

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Jose Padilla’s 40-plus years of “lawyering against power” began with a win before a skeptical judge—his father. After graduating from law school at UC Berkeley in 1978, Padilla, ’74, was poised to fulfill a promise he had made to the community leader who wrote him a recommendation for Stanford: He was coming home to the Imperial Valley, an expanse of sun-scorched scrubland snugged between San Diego and the Arizona border and transformed into prime farm country by the waters of the All-American Canal and the sweat of workers like Padilla’s grandparents.

But first Padilla wanted his father’s blessing—and therein lay the rub. Padilla was joining California Rural Legal Assistance, a legal aid organization founded on a vision of providing the poor with the “same economic, political and social bargaining power” that private law firms offered the rich. The goal wasn’t simply to obtain justice in individual cases but to make a larger impact. A few years earlier, CRLA had championed complaints from workers in Salinas about the short-handled hoe—el cortito—a weeding tool that forced them to spend hours in a stooped position, eventually ruining their backs. In 1975, California banned the tool.

But bold tactics, outsider lawyers and a willingness for confrontation can ruffle feathers, not least in rural communities. Padilla’s father, also named Jose and known as Joe, was a former farmworker who’d earned his U.S. citizenship serving in World War II and who supported his family as a unionized truck driver. To him, CRLA attorneys’ reputation for taking on...
local employers made them rabble-rousers. Like most of his classmates, the elder Padilla had left school to work after the eighth grade, and he wanted to make sure his son didn’t squander his education. His response when Padilla told him his plans: “You’re going to work for those radicals?”

His son didn’t flinch. “Dad, you told me and Grandma told me that I shouldn’t forget how to serve our community, right?” Padilla recalls responding. “They’re serving people like you were, they’re serving people like Grandpa was. You always told me it wasn’t about the money, it was about the value in life, and it was about giving service back. You taught me that. I learned it. And I am going to do it, so I need your blessing.”

“Well, after that lecture,” Padilla laughs, “Dad said, ‘Kneel down, I’ll give you my blessing. May God bless you and your work.’”

On the evidence, it’s tempting to say something has smiled on Padilla’s career intentions; at the least, Padilla has had no regrets about standing up to his father that day. He long ago moved away from Imperial County; he has never left CRLA. Six years after joining the organization, he relocated to San Francisco as its executive director. Nearly four decades later, he remains in the post, leading an organization of 66 attorneys, 46 community workers and 17 field offices spread across California’s agricultural heartland, from El Centro in the south to Marysville in the north.

He is a hero in the legal aid world, renowned both for intransigence under attack—CRLA has no shortage of detractors—and for flexibility in response to clients’ changing needs. Under Padilla, CRLA advocacy has expanded to include LGBTQ+ issues, sexual harassment cases, foreclosure prevention, and outreach to the growing number of farmworkers who speak neither English nor Spanish. But at its core, CRLA’s focus, like Padilla’s, remains the same: fighting for the rights of the rural poor, many of whom are immigrant farmworkers. “I can’t think of many people who have brought justice to more people who feed Americans every day than Jose,” says Don Saunders, senior policy counsel at the National Legal Aid & Defender Association. “He really stood up for some of the most disadvantaged communities in the United States.”

**A MOVEMENT AGAINST SEXUAL ASSAULT**

Most people have never heard of CRLA or its aims. It’s perhaps the consequence of America’s rural-urban divide, a veil that obscures farming communities like Arvin and Madera, to name two locations where CRLA has offices. Citified Americans have grown increasingly concerned with how their food is grown, but that doesn’t necessarily extend to worrying about who grows it.

Even the government agency whose very mission is workplace equality has traditionally overlooked farmworkers. When William Tamayo took over as regional attorney in the Equal Employment Opportunity Commission’s San Francisco office in 1995, the federal agency’s focus was on urban cases involving anti-Black or gender discrimination. Agriculture—and its largely Latino workforce—was low priority.

But Tamayo—whose Filipino father had worked in the sugarcane fields of Hawaii—reached out to a wider roster of stakeholders, including Padilla. In an industry where physical duress is expected, Tamayo thought he’d be prodded to pursue claims of age and disability discrimination. Instead, Padilla pressed him to act against sexual assault of female farmworkers.

As a former immigration lawyer who’d seen many domestic violence cases, Tamayo was familiar with the vulnerability of women on society’s margins. But he was shocked by what Padilla described—a world in which “hundreds, if not thousands” of poor, immigrant women faced the choice to submit to sex or lose their livelihoods. When he began talking with the farmworkers themselves, he would learn that they used terms like “green motel” and “field of panties” to refer to the locations where they’d been raped.

Tamayo agreed to train CRLA workers on sexual harassment law in August 1996. A month later, a woman walked into CRLA’s Salinas office looking for help receiving unpaid wages from a job. The community outreach worker, sensing more to her story, kept asking questions, and soon his suspicions were confirmed.

The woman had been fired—as had her boyfriend—after objecting to harassment, including lewd remarks and unwelcome touching. And there was more: She’d been forced to have sex with the hiring supervisor.
to get a job in two previous picking seasons. CRLA alerted Tamayo, who threw EEOC resources into an investigation. The result, in February 1999, was an $1.86 million settlement with the woman’s employer, an unprecedented outcome that Tamayo says inspired more farmworkers to come forward and more legal aid organizations across the country to pursue sexual harassment cases. He credits Padilla and CRLA, his “eyes and ears,” for starting the movement.

‘NEVER FORGET YOUR ROOT’

When Padilla told his mother about CRLA’s groundbreaking work on rape cases, she told him that sexual assault had blighted her generation, too, their family included. “Why don’t your three cousins all look alike?” she said.

“That made me look back,” he says. “I am here for a reason. I am here because I come from that base and I’m able to push representation that was not there before I became director.”

Padilla grew up on the east side of Brawley, a small town in central Imperial County. His grandparents on both sides immigrated there from Mexico in the 1920s. On the west side of the tracks, he says, were mostly white growers and professionals; on the east side were mostly Latino farmworkers and a few families like his own, who’d risen a notch above in economic comfort.

The public elementary schools were as segregated as the neighborhoods, but when Padilla was in third grade, the local priest told his parents that the young altar boy was smart and would benefit from the more rigorous Catholic school. And so Padilla’s family began driving him and his three younger siblings to Sacred Heart in an old AMC Rambler that contrasted with the late-model cars making the same drop-offs. Few other kids saved their paper lunch bags for reuse.

It was a short drive but a sufficient distance for Padilla to go from being the “smart” kid at a mostly Latino school to a struggling one at a mostly white institution. But by sixth grade, he was again the top student. He returned to the public system for high school, where he excelled at baseball, edited the yearbook, served as class president, and benefited from faculty who fed him books, like Eldridge Cleaver’s civil rights memoir, Soul on Ice, and who stoked his potential. When a recruiter from a Northern California university visited campus his junior year, a counselor made sure Padilla was in the audience. Outside of sports scores, it was the first time he’d heard of Stanford.

But Padilla wasn’t living out a charmed narrative. His senior year, his school would select one student to visit Costa Rica on foreign exchange. With his stellar grades and Spanish fluency, Padilla felt like a shoo-in. He wasn’t. A vice-principal explained the Costa Rican hosts were expecting someone “American.” He was too Mexican.

At a backyard party to celebrate his high school graduation, his grandmother took him aside. “I don’t care how important you become, or how many important people you will know, or how many important friends you make,” she told him in Spanish. “Never forget. You always carry a cactus on your forehead.”

He was, she meant, of common stock, marked by the abundant plant of the desert. People would always see it in him. He should too. “Never forget your root,” she said.

FARM COMMUNITIES

As a freshman at Stanford, Padilla began growing the mustache he still carries—a proud signifier, he says, of his Chicano identity. He was editor of a campus newspaper called Chicanismo; he started a literary magazine called Miquitzli; and he was a resident assistant in the first years of Casa Zapata, the Chicano-Latino theme house. “He was a rather amazing RA,” says Arturo Pacheco, the dorm’s inaugural Latino theme house. “He was a rather amazing RA,” says Arturo Pacheco, the dorm’s inaugural resident fellow, “maybe one of the best I ever saw there in the next 14 years.” Padilla’s initial ambition at Stanford—to become a doctor—was challenged by struggles in math and science classes he realized stemmed from his comparative lack of preparation. At Zapata, he helped other students form study groups to reduce similar frustrations and organized seminars to help students understand their roots.

The disparities in education Padilla saw growing up and at Stanford shaped a lifelong interest in schooling. He contemplated pursuing a PhD in education policy before choosing law, influenced by summer experiences working with the United Farm Workers.

At CRLA, he has been able to blend both interests. When he started as a staff attorney, the organization was just coming off a win in another of its iconic cases from the early ’70s, a class-action suit that prevented schools from administering IQ tests only in English, which had the effect of funneling Spanish-speaking students into special ed classes. Padilla’s early focus at CRLA included establishing education rights for families of migrant workers and fighting a rollback of desegregation efforts. Today, education—along with housing and labor

‘You always told me it wasn’t about the money, it was about the value in life, and it was about giving service back. You taught me that. I learned it. And I am going to do it, so I need your blessing.’

‘Well, after that lecture, Dad said, “Kneel down, I’ll give you my blessing.”’
rights—remains central to CRLA’s mission.

A dozen years ago, Kern High School District in Southern California released head-turning disciplinary data showing more expulsions than any district in the state, even those with far larger populations. Moreover, Black students were expelled at a rate almost 600 percent higher than that of white students. Latino students were expelled at a rate 350 percent higher.

When the disparities in Kern County persisted, CRLA jumped in, filing suit in 2014 along with other groups, including Greater Bakersfield Legal Assistance and the Mexican American Legal Defense and Educational Fund. In 2017, the district settled, agreeing to, among other things, pay $670,000 in damages, work with experts to overhaul its discipline training, and prohibit expulsion for “willful defiance,” a vague term for wrongdoing that critics say throws open the door for racial bias to influence who gets what kind of punishment. CRLA’s director of litigation, Cynthia Rice, says it was hallmark Padilla: Take a strong stance, bring in collaborators who trust his leadership, and back it up with solid and innovative legal arguments.

Of course, CRLA’s victories look less illustrious to those on the other side. Kern High School District denied wrongdoing and said it had already begun addressing the high numbers before the lawsuit was filed. “Settling the case simply means that KHSD no longer wishes to be compelled to spend any more taxpayer money—meant for education and students—on attorneys’ fees and costs associated with defending against this litigation,” it wrote on its website. CRLA was, in so many words, a nuisance litigator.

Joe Del Bosque, who grows melons, asparagus and almonds in Firebaugh, Calif., respects CRLA’s goals. Both he and his wife were farmworkers before becoming growers, and he retains a deep concern for his workers. But he says many farmers recoil at some CRLA practices, like sending out observation crews who scan fields with binoculars, documenting infractions like not having a nearby toilet or shade in hot weather. Del Bosque is a former chairman of Ag Safe, an industry group that educates farmers on how to better meet such workplace regulations. They use the carrot to entice change, he says. CRLA, in many farmers’ minds, uses only a stick.
CONTROVERSY AND CONFIDENCE
CRLA has been controversial since its inception. The organization was birthed in 1966, thanks to a $1.27 million grant from the newly established Office of Economic Opportunity, a creation of President Lyndon Johnson’s War on Poverty. Before the grant was even approved, the California State Bar was in opposition, calling the proposal “militant advocacy.”

By 1971, CRLA had garnered the ire of the state’s top politician. Outraged that the organization had thwarted planned cuts to Medi-Cal, California’s version of Medicaid, then-Gov. Ronald Reagan tried to block federal funding for what he called a “bunch of ambulance chasers doing their own thing at the expense of the rural poor.” The attack backfired when a report justifying Reagan’s position proved rife with inaccuracies.

But over the decades, opponents of CRLA, and legal aid in general, have been successful at limiting what federally funded legal aid organizations can do. They may not, for example, work on cases involving abortion, initiate class-action suits (as had been possible for CRLA’s IQ case), or, in most instances, represent undocumented people. Padilla estimates 60 percent of California’s some 830,000 farmworkers are here without proper documentation.

Between 2000 and 2005, the inspector general of the Legal Services Corporation—which distributes funds to 132 federally supported legal aid programs across the country—opened three separate investigations into CRLA after complaints from congressional representatives, Republican and Democrat, with connections to the agricultural industry. The last investigation, initiated by former dairy farmer and outgoing congressional representative Devin Nunes, resulted in a preliminary finding of “substantial evidence that CRLA has violated federal law” by soliciting clients, working a fee-generating case, requesting attorney fees, and associating CRLA with political activities.

The investigation then bogged down in a six-year subpoena battle in which CRLA refused to give the inspector general tens of thousands of client names. “CRLA is a rogue organization with a long history of serious legal violations,” Nunes said as the date for appellate oral argument neared. “In light of these transgressions and its long-standing refusal to cooperate with the inspector general, its federal funding should be terminated.”

The D.C. Circuit ruled that CRLA had to turn over the names, but the broader investigation never reached a conclusion. To critics, CRLA had simply stonewalled the investigation until it fell apart. But in the legal aid world, Padilla’s reputation only grew as someone willing to go toe to toe with opponents to protect the privacy of vulnerable clients. “We all knew about it because we thought it was one of the biggest threats not only to CRLA but to legal aid in general,” says Sylvia Argueta, executive director of the Legal Aid Foundation of Los Angeles. “He took up that fight.”

That is as anyone who knows Padilla would expect. A garrulous presence in private life—his wife, lawyer Deborah Escobedo, chides him for running at the mouth—Padilla can be the life of the party, singing Mexican rancheras and boleros on his guitar with a charisma that translates to his advocacy. “His ability to tell a story to any audience, even hostile audiences, makes it impossible to come back and say, ‘You’re wrong, you’re a bad man, you’re insincere,’” says Jack Londen, a partner at the law firm Morrison & Foerster, who represented CRLA lawyers in the subpoena investigation. “I have never seen an audience that didn’t fall in love with Jose.”

Estella Cisneros, ’07, legal director of CRLA’s agriculture worker program, was motivated to join the organization after seeing Padilla speak while she was a student at Yale Law School. “I remember just how inspiring he was and how genuine he seemed, and how it really made me excited about working for legal aid and being a people’s attorney.”

And yet Padilla is also a battler. His heroes include the late Cruz Reynoso, once the head of CRLA, later the first Latino member of the California Supreme Court. In 2012, Padilla won an essay crediting Reynoso and CRLA’s other founders for establishing a culture of “lawyering against power” founded on three principles: representing the most vulnerable; working for systemic change; and expecting to pay the price for daring to do so. For Padilla, Nunes’s outrage was the inevitable result of CRLA’s successes, including winning claims of millions of dollars in unpaid wages and benefits from the dairy industry. “When you engage in systemic advocacy and confront political power, there is a political price to be paid, and you must be prepared for the political consequences that follow,” Padilla wrote. A “social justice advocate must never be afraid to lawyer to power and must always be able to defend the work.”

Marty Glick, who was CRLA executive director for two years in the ’70s, and who was central to the short-handled hoe and IQ cases, is amazed by Padilla’s stamina. The job requires dealing with politics, the press, fundraising, and the internal frictions inherent in any large, decentralized organization, all in addition to advocating on behalf of clients. And yet Padilla has thrived for decades, Glick says, a tenure marked by a sharp legal mind with the strategic sense of when to hold back and when to go all in.

“I was director of [the Employment Development Department] under [Gov.] Jerry Brown for four years; I was managing partner of my law firm; I now run a small entertainment company,” Glick says. “It was easily the most difficult leadership job of any of those. How anybody could do it for really any length of time, let alone the amount of time Jose has done it, is truly remarkable.”

If Padilla has an advantage, perhaps it’s that he was born into the world he fights for. “He is a guy who still wakes up in the morning and thinks about serving the poor,” says longtime friend Sergio Garcia, ’83. As a law student in the mid-’80s, Garcia worked on a case for Padilla in which farmworkers in Salinas had been forced to dig caves in the hillsides in which to live. Nearly 40 years later, the dankness of the caves has stayed with him. “It was a rude awakening to me,” he says. “This is what CRLA is about.”

Soon after his return to Imperial Valley in 1978, Padilla crossed paths with the community leader to whom he’d made his teenage promise to come back home. A decade prior, the man—the leader of an organization called Casa de la Amistad—had balked at writing a Stanford recommendation for Padilla. Why, he asked, should he help another kid leave town and never come back? Padilla had insisted he would be different. Indeed, the deciding factor in his joining CRLA rather than the United Farm Workers was that CRLA had a job in Imperial Valley.

But when Padilla told the man this, the man had no idea what he was referring to. “I used to write a lot of letters,” he told Padilla, who laughs at the memory of the earnest kid whose word was a bond only he knew about. “Here I had made all my life decisions around this promise to this organizer,” Padilla says, “and he never even remembered.”

It’s a funny story, but maybe not the whole story. Much more than that moment brought Padilla back to rural California. Much more than that keeps him fighting for it.

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DELIBERATION NATION
How improving civic literacy can reinforce democracy.

By Jill Patton
you can cram a couple hundred people onto bare wooden benches in a stuffy courtroom and behold the state of American democracy.

It’s jury selection. The judge will spend the day fielding excuses for why almost no one can serve: There are work obligations, travel plans, ailing parents, infants to tend. And then there are all manners of bias that people swear they couldn’t possibly see past to render an honest verdict.

Oh, we think it’s good in theory—about two-thirds of U.S. adults say serving on a jury “is part of what it means to be a good citizen,” according to a 2017 Pew Research Center survey. But in practice . . . well, cue the groan.

So why are we groaning? “A problem with contemporary democracy is that we don’t really realize that the stakes are high,” says Josiah Ober, a Stanford professor of political science and of classics. We’ve got a lot going on, and our civic duties, from serving on a jury to studying the propositions on this year’s ballot, often feel like they get in the way of the rest of life. “We see politics as a game instead of as a highly consequential activity that bears heavily on our flourishing or languishing.” Ober, an expert in democratic theory, sees a failure with civic education. “[Civic education] is, in short, a fairly presented argument for the regime’s legitimacy,” he writes in Demopolis: Democracy Before Liberalism in Theory and Practice, his 2017 defense of democratic principles. Done right, that education overrides people’s desire to check out and focus on other things. He says modern democracies, including the United States, are falling down on the job.

“It’s a collective action problem,” says James Fishkin, a professor of communication and author of the 2018 book Democracy When the People Are Thinking: Revitalizing Our Politics Through Public Deliberation. “There’s a lot of [academic] literature that shows that individual voters have an incentive for rational ignorance.” In other words, why should anyone spend a lot of time learning about political issues when the impact of one person’s vote is so small? Fishkin was stewing about that very problem in the late 1980s when he was a fellow at Stanford’s Center for Advanced Study in the Behavioral Sciences. “I was worried about the upcoming primary season, and public opinion polls being so superficial, and the lack of public will formation in our democracy,” he recalls. Then an idea came into his head: a new kind of public opinion poll that integrates the act of group deliberation in order to yield more informed judgments. More than 30 years later, his technique—called deliberative polling—has been used some 120 times in 32 countries on topics both narrow and national as a way to gauge what the people at large might think if they fully weighed the range of arguments face-to-face in collaboration with others.

In the meantime, new challenges to democracy have emerged, chief among them a lack of coherence in civic knowledge. “News networks and newspapers used to be shared information sources, but we now have a fragmented partisan press and advocacy journalism,” Fishkin says. “The line between opinion and reporting is blurred. In our news feeds, we only listen to the like-minded. The change in technology has increased extreme partisan polarization and further entrenched people in their views.” In response, Fishkin is boosting the reach of deliberative polling and taking the practice of civic deliberation to the masses in hopes that it can help knit together what he calls our “fragmented public sphere.”

DEMOCRACY’S FOUNDATIONS

When America’s founders sketched out their plan for a democracy, they relied on the thinking of Aristotle and his idea that citizens of, say, Athens could rule and be ruled on their own terms. In Politics, penned in the 4th century BCE, Aristotle explained that people would need to take on certain civic duties, and they would have to know enough about the government to perform them. So, Ober says, the Athenians developed a formal system of civic education, and the community elected highly respected members to instruct young citizens. Every free adult male, in turn, was required to spend two years in public service, including military training. Those over 30 could also sit for a year on the Council of 500, which handled daily affairs and recommended agenda items to the legislative assembly. Requiring participation meant there was “skin in the game,” Ober says. Your vote to, for example, go to war with Sparta had immediate, obvious and often personal ramifications.

But Athens wasn’t like early America. About 40,000 of the city’s residents were considered citizens, so when the legislative assembly met—some 40 times a year—roughly 5,000 tunic-clad men showed up at any given time to consider the agenda and vote. Business was conducted out loud, with speeches and debate. It was a direct democracy. The population of the United States in 1776, by comparison, counted 2.5 million, and the country spanned more than 1,000 miles, from present-day Maine to Georgia. The founders opted for a representative democracy: Power lay with the people—or, at least, with the property-owning men eligible.
to vote at the nation’s founding—but representatives would be the voices in the room.

When James Madison, Alexander Hamilton and John Jay laid out arguments for the government’s formation through the Federalist Papers, their views traveled directly to readers via two New York newspapers. But few publications at the time circulated more than a thousand copies; printing was done laboriously on hand presses, and literacy rates were low. Public schools didn’t gain hold until 1830 (and elementary school wouldn’t become compulsory nationwide until 1918). Most of what citizens knew about government affairs came from politicians themselves. Over time, the gatekeepers to civic knowledge became the media, and it was the press, TV networks and, eventually, online news outlets that determined and reported the facts as they saw them, which provided the basis for voting decisions and civic engagement. “[Those] models for informing the public operated under a couple different constraints,” says Renée DiResta, technical research manager of the Stanford Internet Observatory, a program at the Freeman Spogli Institute for International Studies that researches the abuse of information technology. Editorial gatekeepers controlled how stories were told, and distributors—like broadcast networks—controlled their reach.

These days voting rights are broader, literacy rates are higher, and all the information in the world is at our fingertips. America’s 240 million eligible voters are dazzled with choices—for the school board, the water district, county judge, a half-cent sales tax funding firefighters, perhaps propositions for the district, county, state or nation. Most of what citizens knew about development restrictions or education bonds, not to mention various high-profile offices. Amid this dizzying complexity has come a profound shift in role of the gatekeeper—or perhaps the death of it—with the rise of social media platforms. “In the social media era, content creation and content distribution are no longer limited by the older gatekeeping models. Everyone participates in the creation and distribution of content, and online crowds determine what we see,” DiResta says. “Anyone can amass influence.”

As people privilege the sources they find “relatable” over voices with knowledge and expertise, she says, they’ll rely on the statements of a neighbor, movie star or charismatic stranger over those of authorities. And so the American electorate has become
increasingly swayed by influencers—including celebrities like Kim Kardashian and Taylor Swift, both of whom have endorsed candidates for state or federal elections. In one 48-hour time period in October 2018, Swift (who had 112 million Instagram followers at the time) inspired 169,000 people to register to vote through Vote.org, according to the organization. About 190,000 voters registered via Vote.org in the entire month of September 2018.

It’s not that inspiring people to vote is bad. But when it comes to endorsing candidates or policy positions, things get a little trickier. “In the era of gatekept content, experts and government and the media determined whose views were legit,” DiResta says. Now, “expertise and influence have been decoupled.”

What’s worrisome there, DiResta thinks, is that people are more exposed to manipulation by bad actors. Her research has shown, for example, the ways that Russian military propaganda becomes amplified across the media ecosystem—readers repeat and retweet the narratives that appeal to them without knowing their original source or reliability. And at the same time, she says, algorithms are pushing ever-more homogenous information into people’s social media feeds. That kind of platform design exacerbates partisan animus, a phenomenon explained by political scientists including Stanford’s Shanto Iyengar and Neil Malhotra, MA ’05, PhD ’08, in a 2019 paper about affective polarization—a sense of division not explained by policy positions or political ideology. “Democrats and Republicans both say that the other party’s members are hypocritical, selfish and closed-minded, and they are unwilling to socialize across party lines, or even to partner with opponents in a variety of other activities,” the authors write.

Such conditions make it difficult to answer all the open questions with which we have to grapple as a society. But there’s something worse, Ober will tell you, than failing to find the best solutions. When the people in a representative democracy can’t see eye to eye, they can’t effectively serve as a check on their government. That’s when the biggest enemies to representative democracy—systemic political corruption and autocracy—crop up. And both of those are live issues. Some 63 percent of American participants in the 2017 World Values Survey said they think rich people buy elections fairly often or very often, and 32 percent said they believe voters aren’t often offered a genuine choice in elections. In a democratic system, it’s the voters who have to remedy those problems at the ballot box.

“Any modern democracy that cannot resort to decision-making by the people if and when necessary remains vulnerable to capture by a political elite,” Ober writes in Demopolis. He also makes the point that such dangers aren’t purely theoretical. “Tyranny has often been a successor to democracy, in antiquity and modernity.”

THE BIG FIX

To improve civic literacy and the quality of public decision-making, Fishkin and Alice Siu, ’03, MA ’07, PhD ’08, director and associate director, respectively, of Stanford’s Center for Deliberative Democracy, are trying to give voters more voice and agency with what they view to be the “magic sauce” of democracy: deliberation.

“We have a highly polarized environment,” Fishkin says, “and a lot of people are getting their information from social media. Mere exposure to good information that’s been vetted can backfire—people don’t trust it. But we find that with civil discussion with diverse others, people transform.”

A key strategy toward that end is reinventing public opinion research via the deliberative poll. Organizers of a deliberative poll gather a representative sample of voters, meant to be a microcosm of the population at large, to consider policy proposals. The sample includes “standard categories” of representation, Fishkin says, such as class, gender, education, income and ethnicity, as well as “attitudinal representativeness,” meaning the mindsets of the participants reflect those of the broader population. The sample size must also be large enough that changes in opinion will be statistically significant. The poll organizers—Center for Deliberative Democracy staff members typically team up with civil society organizations, governments, media companies, universities or nonpartisan groups—survey the participants on a targeted set of issues. Next, the voters gather together for a period of time (say, a weekend) to discuss those issues. They mull over briefing materials vetted by an ideologically diverse advisory group, and they have small-group, moderated discussions with ground rules. There’s also a plenary session in which participants pose questions directly to relevant experts. Afterward, participants are polled again. The new opinions represent the views the broader public might hold if people became informed enough to make considered judgments. The results are then shared with the media and community leaders for use in reporting and decision-making.

In 2019, the Center spearheaded America in One Room, a deliberative poll that brought 526 people—a representative sample of American voters—to a hotel outside Dallas for a long weekend. Relying on their personal views and experiences as well as briefing materials created by a committee of experts, the attendees broke into small groups and debated the major topics of the 2020 election: the economy, the environment, foreign policy, health care and immigration. They considered and discussed policy proposals.

At the end of the weekend, many participants interviewed by the New York Times said they didn’t believe they’d changed their mind on anything. But, they said, they did have more empathy for folks who felt differently, and they had gotten practice debating in a civil manner.

In actuality, some of them had changed their minds. Participants moved toward the center on several issues, researchers from NORC at the University of Chicago who conducted before-and-after surveys found. For example, Democrats lessened their support
SEAN CASEY GOT AN EMAIL saying the palm tree in the Democracy Day graphic was too happy. “You could take it in a direction that is much more negative, and rightly so,” says Casey, ‘23, chair of the Democracy Day Coordinating Committee. But the proposal he and Jonathan Lipman, ‘21, put before Stanford’s Faculty Senate last summer called for a noninstructional day of special programming to be held campuswide on Election Day each year. It would signal the university’s commitment to democratic principles and encourage student voting, civic engagement, dialogue and public service. Its symbol, according to Casey, needed to be optimistic.

In its inaugural year, Democracy Day fell on November 2, 2021, a cloudy Tuesday. On Wilbur Field was Donuts & Democracy, a deliberative polling event centered on discussions about social media and technology. Armed with input from experts, participants debated the role of social media in society, along with proposals to create a publicly funded or nonprofit social media platform, in small groups moderated by undergraduates who were enrolled in a deliberative democracy practicum. Later in the day, programming included an interdisciplinary panel of faculty, “Is Democracy in Danger?” on Meyer Green; a virtual session with Sen. Jeff Merkley, ’79, who emphasized the importance of active civic engagement and advised students on how to shape the nation’s future; and an outdoor screening of the documentary Boys State, which depicts a thousand teenage boys forming a mock representative government. “I came here because of my lack of information,” said first-year student Francisco Ortiz. “I was introduced to topics that I never even considered were big problems today.”

Virginia Bock, the Haas Center for Public Service communications manager and the day’s staff leader, hopes future Democracy Days will encompass more hands-on student activities—from voting to community service projects to events designed by individual student groups. When Casey steps back to think, he is quick to invoke perspective ("I’d be surprised if our little day is changing the hearts and minds of legislators in Washington"). Still, he is already working with other universities to implement Election Day commemorations on their campuses. "I'm optimistic that progress is near," he says. That would make a certain cartoon palm tree very happy indeed.

—Valerie Trapp, ‘22
for a $15 minimum wage, from 83 percent to 59 percent, while Republicans increased their support for rejoining the Paris climate agreement, from 28 percent to 44 percent.

“What I hear during exit interviews from deliberative polls is, ‘Well, I’ll try to listen to the other side,’” Siu says. “People say, ‘I can’t replicate deliberative polling, but I can talk to someone who thinks differently.’”

The basic concept behind deliberation, Fishkin writes in Democracy When the People Are Thinking, is weighing. “People should weigh the arguments, the competing reasons, offered by their fellow citizens under good conditions for expressing and listening to them and considering them on the merits.” From a psychological perspective, it’s that mental wrestling that helps us overcome our impulse to seek out facts that support what we already think. And when we’re with others in person, we have the opportunity to express empathy.

“The public is very smart if you can tap into that wisdom,” Fishkin says. “People only appear stupid because they aren’t putting a lot of cognitive effort into having an opinion.”

Deliberative polling, though, is tailored and time-consuming—a huge amount of work goes into preparing the briefing materials alone. Siu says that’s done under the supervision of large, multifaceted advisory panels comprising a full spectrum of viewpoints, from policy advocates to academics to representatives of private industry. The panelists all contribute to the process of identifying the policy proposals, selecting the background reading, and editing and reviewing the final briefing packets and videos. “The document, how it’s composed, is quite arduous,” Siu says. They start with a long list of proposals and whittle it down to what can be discussed in a weekend’s time—and to ideas that are actually feasible to implement. “No pie-in-the-sky ideas,” Siu adds. Then you have to select the participants and produce the event itself. Even if deliberative polling is the solution to democracy’s woes, it’s going to have to become less bespoke.

Turns out, scaling it up is in the works. Four years ago, Fishkin and Siu teamed up with Ashish Goel, MS ‘98, PhD ‘99, a professor of management science and engineering, to create the Stanford Online Deliberation Platform, an automated moderator for group deliberations that’s programmed to give set speaking times to participants and to prompt questions and debate. It requests arguments for and against proposals, prods the people who aren’t speaking, and gives participants the opportunity to weigh in on whether all sides of the issue have been fully explored. It solicits questions from the plenary, and everyone votes on which ones will be discussed.

Just in the past year, the platform has been used twice at Stanford to help university administrators consider the design of the new school on climate and sustainability. The first poll engaged 203 faculty over a weekend in January 2021, and the second involved 184 undergraduate and graduate students in May.

More broadly, the online platform was used for America in One Room: Climate and Energy, a 1,000-person mass poll on climate and energy policy that the nonpartisan organizers described as the “largest controlled experiment with in-depth deliberation ever held in the United States.” The event, held virtually in September, included intensive, multiday discussions among more than 100 small break-out groups. More than 30 expert panelists were on hand to advise participants and ranged from the head of government relations at Shell Oil Co. to the director of policy and external affairs at the Nature Conservancy. “On 66 of the 72 issue propositions in the survey, participants changed significantly over the course of the deliberation toward wanting to do more to combat climate change,” researchers reported.

In a November event funded by the American Academy of Arts and Sciences, a national deliberative poll of people aged 18 to 29 used the platform to consider policies related to social media and democracy, civic responsibility and representation. Participants dove into quandaries—Should social media companies be regulated like the news media?—and weighed policy proposals, such as making federal election day a holiday, instituting compulsory public service and using ranked-choice voting. The final report was coauthored by 15 Stanford students taking Communication 138/238, a deliberative democracy practicum co-taught by Siu and Haas Center for Public Service executive director Tom Schnaubelt. They concluded that one of the benefits of participating in the poll was that it enhanced people’s civic knowledge.

Benefiting the public is central to the Center for Deliberative Democracy’s plans going forward. Whereas deliberative polling relies on representative sampling to produce an accurate microcosm of considered views, a new concept—what Fishkin calls deliberative scaling—ratchets up the number of participants beyond what’s needed to create a representative sample with the aim of jumpstarting civic engagement more broadly. In principle, Fishkin says, there’s no limit to the number of participants in a mass event.

“Because the platform works so well, we’re intending to scale the deliberation to much larger numbers in partnerships with universities and civic groups around the country,” Fishkin says. “When people engage in this process, they are more motivated to participate in public affairs. They become more civically engaged. We activate them as citizens, and we think that’s a useful contribution.”

JILL PATTON, ’03 MA ’04, is the senior editor at Stanford. Email her at jillpatton@stanford.edu.
WHEN IT COMES TO K-12 civic education in the United States, by almost any measure, the system is failing. A 2018 Education Week survey found that only eight states require a yearlong civics course in high school—and 15 states don’t require one at all.

It’s not because students are gaining that knowledge earlier. On the most recent national assessment, only 24 percent of eighth graders were proficient in the subject. One obvious problem: Half of the students tested hadn’t taken a civics-focused class.

Civics is the study of how our government was formed, how it functions, and what roles individuals play in that process—and currently, its teaching is a hodgepodge. With federal legislation that would authorize billions in grants for civics education stalled, nonprofit organizations and academic researchers are trying to fill the gap. And their efforts are gaining traction.

“On my good days, I’m very optimistic,” says Louise Dubé, executive director of iCivics, a nonprofit civic education provider founded in 2009 by former U.S. Supreme Court Justice Sandra Day O’Connor, ’50, JD ’52. “This is a unifying idea for all Americans to get behind.”

David Davenport, ’72, a research fellow at the Hoover Institution, agrees. In 2020, Davenport authored a report for the Orrin G. Hatch Foundation called “Commonsense Solutions to Our Civics Crisis.” In addition to more funding, testing and teacher training, Davenport recommends the so-called layer cake approach to civics, which begins introducing children to age-appropriate ideas in elementary school. “If you wait for a single, one-semester course in high school, kids don’t have any context,” Davenport says. “They’ll show up at class with nothing.”

One resource for middle and high school teachers is iCivics, which aims to cultivate an appreciation for civic engagement among young people. The organization provides

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hundreds of free curricular resources—including 14 nonpartisan educational video games, such as Argument Wars (in which players argue real Supreme Court cases), Counties Work (which asks players to manage a county and get reelected) and Do I Have a Right? (which tests players’ knowledge of the Constitution). According to assessments that iCivics embedded in two of its election-related games in 2021, students’ knowledge of civic content improved by 26 percent after playing the games. Perhaps as notable: There was a 38 percent jump in student interest in learning about topics like the Electoral College or participating in voting.

Anyone can access iCivics content on their own at any time—and more than 145,000 teachers and 9 million students in all 50 states do each year. But iCivics has also worked through the Educaturing for American Democracy initiative to design a roadmap for effective civics education, a project funded by the National Endowment for the Humanities and the U.S. Department of Education. “The American democratic system is not an intuitive system—it needs to be taught,” Dubé says. “Our goal is to rebuild a healthy American democracy and to reimagine civic education to do that.”

For Stanford Graduate School of Education professor Sam Wineburg, PhD ’89, that work begins where American democracy has faced the greatest challenge in recent years: the internet.

In 2014, the Stanford History Education Group that Wineburg leads started the Civic Online Reasoning (COR) program, which provides free lessons designed to help students evaluate information they find online. “We are in an incredibly polarized time, and what’s feeding that is the spread of misinformation,” he says. “If we want to be informed citizens, the way we do that in the 21st century is we go online. We don’t go to the public library to learn about the efficacy of a soda tax or whether we should ban private prisons; we google it.”

In fact, Google is one of COR’s key partners. Last year, the search engine—based in part on research by Wineburg and Michael Caulfield, a research scientist at the University of Washington’s Center for an Informed Public—began including an icon designed to help users in the United States assess the credibility of search results. The feature, which appears as a three-dot menu next to your search results, encourages COR skills such as lateral reading (checking what reputable websites say about a source) and click restraint (intentionally skipping over the first search results, which are often advertisements). Wineburg says the feature is a “small nudge to see if we can make things a little better.”

The primary focus of COR, like iCivics, is to make materials teachers can use in the classroom. Its curriculum—based on the work of professional fact-checkers—includes nearly 30 lesson plans that cover using Wikipedia, evaluating claims on social media and identifying trustworthy evidence, among other topics. “You can preach to teachers until you’re blue in the face,” Wineburg says. “We need materials. We need concrete things. That’s where my efforts are.”

—Rebecca Beyer
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Farewells

FACULTY
Theodore Henry Geballe, of Woodside, Calif., October 23, at 101. He was the Theodore and Sydney Rosenberg Professor in Applied Physics, emeritus. The hundreds of articles he wrote and co-authored on condensed matter and superconductivity helped define the field of applied physics and led to numerous technological innovations. He received multiple awards and a Guggenheim Fellowship, and the Geballe Laboratory for Advanced Materials was named for him in 2000. He was predeceased by his wife of 77 years, Frances. Survivors: his children, Gordon, Alison, Adam, ‘74, Monica, Jennifer Norman and Ernest; 16 grandchildren, including Corinne, ‘06, MA ’07, Nicholas, ’04, Daniel, MBA ’13, and Stephanie, ’09; and 12 great-grandchildren.

Douglass J. Wilde, of Stanford, October 28, at 92. He was professor emeritus of chemical and mechanical engineering and served as associate dean for affirmative action in the School of Engineering. In his later career, he focused his expertise on design and industrial optimization, approaches to education, applied psychology and the psychological underpinnings of exceptional teams. He authored several textbooks and more than 100 articles and was awarded the Lanchester Prize in operations research and the Lincoln Foundation’s Student Design Gold Medal. He was predeceased by his wife of 59 years, Jane Ann. Survivors: his son, Nicholas; granddaughter; and brother.

1940s
Maxine Frances Samuel Dickson, ‘40 (psychology), of San Francisco, August 27, at 102. She earned a graduate degree in social welfare from UC Berkeley. She was a voracious reader who loved tennis, gardening, cooking, kayaking, hiking, fishing, skiing, traveling and summers at Lake Tahoe. She was predeceased by her husband of 60 years, Milton. Survivors: her children, Gary, Wendy, Jill Relles, Kit Harwood, Sue and Eve Eppard; eight grandchildren; and nine great-grandchildren.

Suzanne Stephens Weeks, ‘43 (education), of Portola Valley, Calif., July 1, at 100. After working for Matson Steamship Line, she trained Pentagon staff ON how to use punch-card computers. She raised her children in Woodside and served on the town council and as mayor. She was also an avid tennis player and skier and especially enjoyed spending time at Lake Tahoe. She was predeceased by her husband, William, ‘43. Survivors: her children, Tacy Hahn and Stephen; four grandchildren; and great-granddaughter.

Loralee Smith Durkee, ‘44 (graphic arts), of Oroville, Calif., August 17, at 98. She served in the Navy during World War II. After studying at the California Art Institute, she began painting with the California Group and enjoyed a long career, working primarily in watercolor. Her paintings preserve many of San Francisco’s Victorian homes that have long since disappeared. Survivors: her children, Carolyn Adams, Doug Adams and Jay Adams; grandson; and two great-grandchildren.

Elizabeth Marie Chandler Gonda, ‘44 (humanities), of Palo Alto, August 29, 2020, at 98. As a longtime resident of the Palo Alto and Stanford communities, she was an active volunteer at Stanford’s Children’s Hospital and a devoted sports fan. She also enjoyed traveling the world with Stanford friends. She was predeceased by her husband, Thomas, ‘42, MD ’45; and her son Paul, ‘67. Survivors: her children Lynn, ’76, and Bill, ’74; four grandchildren; and great-grandchild. Alan Norman Weeden, ’45 (economics), of Green- witch, Conn., September 28, at 97, of heart failure. He pledged Zeta Psi, played water polo and was a national record-setting swimmer. He served on a Navy underwater demolition team during World War II. Following a career in securities trading, he served on the boards of the Sierra Club, American Bird Conservancy, Conservation International and Audubon. He also served on Stanford’s board of trustees and received the Gold Spike Award. At 90, he set a national record for his age group in the 50-meter backstroke. Survivors: his wife of 71 years, Barbara (Elliott) ’49; children, Donald, Robert, ’76, and Leslie, ’83; four grandchildren; two great-grandchildren; and brother, Don, ’51.

Betty Mae Gettle Hilmer, ’48 (social science/social thought), of Atherton, Calif., July 4, at 95. She played on the basketball team. She was known for her sense of humor and for putting others’ needs before her own. She was also an avid tennis player whose career spanned 70 years. She was predeceased by her husband, Robert, ’47, MA ’53. Survivors: her children, Mike, Nancy and Eric. Hult Morris Alden, ’49 (biological sciences), of Mountain Ranch, Calif., May 25, at 96. He was a member of Sigma Nu/Beta Chi and served in the Army during World War II. He later earned a graduate degree in forestry from UC Berkeley. Survivors: his wife of 70 years, Susanne (Coate), ’51;

Acclaimed Feminist, Author and Social Critic
Celebrated as a breakthrough cultural critic for challenging feminism’s racial defaults, bell hooks embraced expansive interests as a thinker and a prolific writer. Her body of work, which spans five decades and more than three dozen books, encompassed feminist and race theory, poetry, literary and film criticism, pedagogy and children’s literature.

On December 15, hooks, ’73, died at her home in Berea, Ky., of kidney failure. She was 69.

Born Gloria Jean Watkins in Hopkinsville, Ky., hooks adopted her pen name as a tribute to her maternal great-grandmother, Bell Blair Hooks, choosing lowercase letters in a bid to prioritize her work over her individual identity. She earned her MA from the University of Wisconsin—Madison and her PhD at UC Santa Cruz, where she wrote her doctoral dissertation on Toni Morrison. She taught at USC, Stanford, Yale, Oberlin and the City College of New York before returning home to Kentucky in 2004 as the Distinguished Professor in Residence in Appalachian Studies at Berea College. Ten years later, the college created the bell hooks center, which has housed her papers since 2017.

Among hooks’s groundbreaking works are Feminist Theory: From Margin to Center, Bone Black: Memories of Girlhood and the iconic Ain’t I a Woman: Black Women and Feminism, a title invoking abolitionist Sojourner Truth’s 1851 speech calling for Black women to be granted full citizenship.

She was 69.

Katie Dieter, associate director of Stanford’s African and African American studies program, says that as a Black female undergraduate, encountering hooks’s work was pivotal to her self-image and career direction. “bell hooks was a breath of fresh air after growing up in a world that teaches young Black girls from an early age that we are not enough—that our skin, hair, features, histories, cultures, and lives don’t matter and are wrong in some way,” Dieter says. “bell hooks changed my entire world, and I know this is true for so many of us.”

—Angie Chuang, ’95, MA ’95
four children; eight grandchildren; and five great-grandchildren.

Arnold Binder, ’49, PhD ’53 (psychology), of Issaquah, Wash., October 2, at 97. He taught psychology at Indiana U., but spent most of his career as a professor at UC Irvine, where he founded the School of Social Ecology. He co-authored four books as well as numerous articles on research methodology, political use of deadly force and juvenile delinquency. He also founded the Youth Service Program (now Waymakers of Orange County), which provides housing and services to at-risk youth and victims of violence. Survivors: his wife of 51 years, Virginia; children, Andrea Mayner, Jennifer Capasso and Jeffrey; and four grandchildren.

Maile Ruth Allen Scott, ’49 (education), of Palm Springs, Calif., October 3, at 94. She was a member of Pi Beta Phi and the voice of “Stanford Sadie” on KZSU. Over the course of her career, she was a model for Coca-Cola ads, acted in summer stock theater, studied at Inichibald School of Design in London, worked in fashion and interior design and sold real estate in Sedona, Ariz. She was predeceased by her four children, Roger Olsen, ’50, and sons, Roger Olson and Brigham Olson. Survivors: her daughters, Kristin Olson and Karinne Lindsey; eight grandchildren; and six great-grandchildren.

1950s

Marilyn Ellen Singer Benioff, ’50, of San Francisco, August 22, at 93. Her artistic eye and sense of style aided her in creating advertising for the family-owned Benioff Department Store, a jewelry store she managed and other businesses. In retirement, she volunteered with the San Francisco Public Library and City Guides. She was also an avid world traveler, theatergoer and sports fan. She was predeceased by her husband of 69 years, Alexis. Survivors: her children, Jeanne, Carol and Louis; and grandchildren.

Walter Leo Maas Dunbar, ’50, MS ’51 (petroleum engineering), of Bakersfield, Calif., October 6, at 93, of heart failure. He was president of Chi Psi and played on the football, rugby, soccer and crew teams. Service in the Korean War and later in the Navy Seabees led to both civilian and Navy management positions, including serving as director of engineering of the Naval Petroleum Reserve. He loved tennis, sailing, woodwork and the outdoors. Survivors: his wife of 69 years, Marilyn; and children, Michael, William, ’84, and Janice; two stepchildren; eight grandchildren; and three stepgrandchildren.

Richard Dean Esbenshade, ’50 (economics), of Pasadena, Calif., September 14, at 92. He was on the wrestling team and found lifelong friends in the fraternity of DMOs—the Dish Machine Operators. After serving in the Army, he earned his JD at Harvard. He helped start the firm of Munger, Tolles & Olson and worked there until 2012, except for a sabbatical with his family in Switzerland. He was predeceased by his daughter Lee, ’83. Survivors: his wife of 63 years, Nancy; children Richard, MA ’93, Jill, Anne, ’88, and Andy; 11 grandchildren; one great-grandchild; and sister.

Charlotte Adams Nourse Martin, ’53 (economics), of Carmel Valley, Calif., August 5, at 92. She taught elementary school in Salinas, Calif., for 26 years and was active in regional and intercollegiate associations as a reading specialist. In retirement, she volunteered at the Monterey Bay Aquarium and served on the county grand jury and on an advisory committee to update the Toro area master plan. She also enjoyed traveling in the U.S. and abroad. She was predeceased by her husband, John. Survivors: her children, John, Frank, Priscilla Wild and James; and five grandchildren.

Hubert Gregg Stokely, ’51 (economics), of Surprise, Ariz., October 15, at 91, of COVID-19. He swam competitively and played water polo. After Navy service, he co-founded the firm of Munger, Tolles & Olson and served as CEO of the firm until 2012. He was a member of the Tournament of Roses Association but most of all loved spending time with his family in the mountains or at the beach. He was predeceased by his first wife, Barbara (Lafot, ’52), and second wife, of 36 years, Naoma Lancaster. Survivors: his children, Janet Mayou and Thomas; and five grandchildren.

Alvin Lee Duskin, ’52, of Tomales, Calif., July 25, at 90. He completed his degree at San Francisco State. He was a member of the alumni association and volunteered at the Western Railway Museum and Niles Canyon Railway. He was predeceased by his wife of 69 years, Alexis. Survivors: his children, Douglas and David; and grandchildren.

Richard Wallace, ’54, of Ashland, Ore., September 21, at 91. After earning his MBA and PhD from Columbia U., he spent his career in arts and historical organizations, including the Philadelphia Bicentennial Commission and the Hall of Fame for Great Americans. He later worked as a real estate agent. He was a lifelong lover of opera, symphony, ballet and theater. Survivors: his wife of 66 years, Sandra; children, Leslie and Robert; and three grandchildren.

Tien Nio Oei, ’57 (Romantic languages), of Rio de Janeiro, July 19, at 91, of ovarian cancer. She was predeceased by her daughter, Lauren Siok Ing Oei Shak, ’77, MS ’86. Survivors: her son, Rodney; and two grandchildren.

Paul Richard Johnson, ’53 (education), MBA ’58, of Portland, Ore., August 25, at 89. He played basketball and was a member of Phi Kappa Psi. He served in the Air Force for 38 years at the Graduate School of Business, retiring as the associate dean for finance and administration, emeritus. During his career, he oversaw construction of the Littlefield office facility and Schwab Residential Living Center. He was also a freshman adviser for more than 20 years. He loved golf, tennis, fly-fishing, photography and wood turning. Survivors: his wife, Carol Domenico; sons, Eric and Kirk; stepchildren, Tony Domenico and Lisa Domenico; and nine grandchildren.

Frederick H. Krock Jr., ’54 (chemistry), of Rossmoor, Calif., August 26, 2020, at 87. He got his start in radio at KZSU as an emergency fill-in. He worked for Armed Forces Radio and then for almost 50 years as a sound engineer and announcer at the classical station KKHI and public radio station KQED. He enjoyed opera, ham radio and Southern cooking. He was also an enthusiastic railroad historian and volunteered at the Western Railway Museum and Niles Canyon Railway. He was predeceased by his wife of 61 years, Pat. Survivors: his children, Diana Godwin and Alan; seven grandchildren; and brother.

Jon Morrow Lindbergh, ’54 (biological sciences), of Lewisburg, W. Va., July 29, at 88, of cancer. His preferred housing as a student was in a tent off campus. His preferred work location was underwater as a cave explorer, smubmersible crew member, researcher for Ocean Systems and part of a Navy underwater demolitions team. He later worked in underwater construction and engineering of the Naval Petroleum Reserve. He loved nature photography and history. Survivors include his wife of 70 years, Barbara; children, Richard and Karen; and brother.

Barbara (Lafot, ’52), and second wife, of 36 years, Naoma Lancaster. Survivors: his children, Janet Mayou and Thomas; and five grandchildren.

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commercial aquaculture development. Survivors: his wife, Maura Jansen; children, Kristina, Anne, and David; and six grandchildren.

Richard J. Koerting, '58 (economics), of Portland, Ore., October 7, at 85, after a long illness. He received his law degree from Harvard, then served in the Air National Guard before beginning a career in Portland at Davies, Biggs, Strayer, Stoel and Boley (later Stoel Rives), where he specialized in health and corporate law. He also helped guide the Morrison Center for Youth and Family Service, Good Samaritan Hospital, Oregon Association of Hospitals and Tidelands Foundation and Multnomah County Library Foundation. Survivors: his wife, Marilyn; daughters, Lisa and Rachel, '92; and granddaughter.

Gary Russell Truex, '58 (psychology), of Elkhart, Ind., April 17, 2020, at 83. He was on the swim team. He served in the Army and then earned his MBA from Northwestern. He began his business career with Hewlett-Packard and FMC before working for more than 30 years at Miles Laboratories and then, after that company’s acquisition, at Bayer. He served on the board of the Humane Society and also enjoyed Stanley reunions and watching the Cardinal play Notre Dame. Survivors: his wife of 58 years, Gretchen; sons, Rick, Woody and David; and six grandchildren.

Barrie Bruce Lovin, '59 (political science), of Lacey, Wash., September 3, at 83, of Alzheimer’s disease. She was a member of Theta Xi. After working in the family cattle business as the manager of large farms in California’s Central Valley, he recognized Amador County’s winemaking potential. He and his wife established Copper King Vineyards in the early 1970s, learning the grape growing business from the ground up and specializing in zinfandel, primitivo, albariño and tempranillo varieties. He was also a machinist, concert promoter, musician, race car campaigner and woodworker. Survivors: his wife of 52 years, Gwen; children, Megan, Grey and Laird; and five grandchildren.

Lynn Wilcox Davidson Hare, '60 (chemistry), of Mercer Island, Wash., September 21, at 83, of pancreatic cancer. Her photojournalism work was published in the New York Times and Seattle Times, while her fine art and portrayal
photography was exhibited in galleries and art museums in Arizona, California and Washington. She later turned to horticultural and botanical subjects. She developed an encyclopedic knowledge of plants and was a founding member of the Northwest Perennial Alliance. Survivors: her husband of 62 years, Halseid, ’55, PhD ’60; children, Drayton, Grace Hensley and Evan; four grandchildren; and brother.

Portia Heaps Leet, ’60 (mathematics), of Redwood Shores, Calif., July 2, at 83, of cancer. After raising her children in Monte Sereno, Calif., and living briefly in Hong Kong, she returned to California to work at Stanford in the School of Engineering development office and sports medicine department. She was also an avid golfer, cyclist and endurance athlete. Survivors: her partner, Larry Wallace; children, Julie and John; and four grandchildren.

Alexander “Sasha” Lanz, ’61 (physical science), of Richardson, Tex., April 2, at 81. He was the grandson of three Stanford faculty members. Over the course of his career, he worked for Geo-tech, Texas Instruments, U. of Texas Health Science, US Tel and Sprint. He loved collecting keys, had a passion for sports cars and enjoyed rallies with the Sports Car Club of America. He was predeceased by his daughter Laura. Survivors: his wife of 49 years, Betty; daughter Amanda; five grandchildren; sister, Jean, ’65; and brothers, Kai, ’74, MS ’75, and Chris, ’76, DMA ’89.

Judith Ann Lochridge Haidinger, ’62 (French), of Rancho Palos Verdes, Calif., October 11, at 81. She loved Big Game and was proud to engage in stunts pranks, including hanging a “BEAT CAL” banner from the Campanile on the UC Berkeley campus. She was also an avid golfer, skier and runner. Survivors: her daughters, Kerry Avrit and Tori Fay; grandchildren and two siblings.

Earl Frederic Herkenhoff, ’44 (geophysics), of Santa Barbara, Calif., September 21, at 79, of dementia. She earned a third master’s degree in learning center for children with developmental disabilities. She loved to sing and was a member of Masterworks Chorale for 43 years. She was also an avid traveler, photographer and PEO member. Survivors: her partner of 36 years, Marilyn Courter; sons, Mark and Steven; and two grandchildren.

Patricia Ann Mayberry Hobe, ’66, MS ’68, PhD ’71 (geophysics), of Wellington, New Zealand, December 24, 2020, at 75, of diabetes and Parkinson’s disease. He was active in the Alpine Club. He did postdoctoral research in seismology at Victoria U. of Wellington and decided to stay, joining the geophysics division of New Zealand’s Department of Scientific and Industrial Research. He was awarded the department’s Ministerial Award for Excellence and a New Zealand Science and Technology Medal and was part of a team that won the 2019 Science New Zealand Supreme Award. Survivors: his wife, Alison; children, Thomas and Emily; and brother, Arthur, ’63, MS ’65, PhD ’71.

Sara Jane “Sally” Segerstrom, ’69 (art), of Santa Cruz, Calif., August 3, at 74. She worked for various divisions of Chevron, he lived and worked in more than 50 countries and led major oil and gas discoveries in the United States, Canada, Australia, West Africa, Indonesia, the Middle East and China. In retirement, he was a docent at Mount Diablo State Park, visiting scientist at Lawrence Berkeley Labs, lecturer at UC Berkeley and vice president of the Bay Area Geophysical Society. He was also an avid golfer, skier and runner. Survivors: his sons, Brett, Eric, James, John and Kyle; four grandchildren; and sister, Patricia Ann Mayberry Hobe, ’64 (political science), MA ’65 (education), MA ’67 (history), of San Mateo, Calif., August 17, at 79, from complications of dementia. He earned a third master’s degree in developmental therapy from Notre Dame de Namur U. She worked as a benefits specialist. As an entrepreneur and philanthropist, she started Pyramid Learning Center for children with developmental disabilities. She loved to sing and was a member of Masterworks Chorale for 43 years. She was also an avid traveler, photographer and PEO member. Survivors: her partner of 36 years, Marilyn Courter; sons, Mark and Steven; and two grandchildren.

David Main Glen, ’64 (economics), of Ashland, Ore., September 13, at 79. He was a member of Phi Kappa Psi. He was a Stanford fund-raiser for more than 35 years and retired as associate vice president for development. In Ashland, he served on the board of directors of the Oregon Shakespeare Festival. He also enjoyed playing golf, traveling and serving his community through the Visiting Nurses Association, Rotary Club, Meals on Wheels, United Way and the Santa Barbara Foundation. Survivors: his wife of 53 years, Parmele; and two siblings.

Russell Robinson Jr., ’66, MS ’69, PhD ’70 (geo-physics), of Wellington, New Zealand, December 24, 2020, at 75, of diabetes and Parkinson’s disease. He was active in the Alpine Club. He did postdoctoral research in seismology at Victoria U. of Wellington and decided to stay, joining the geophysics division of New Zealand’s Department of Scientific and Industrial Research. He was awarded the department’s Ministerial Award for Excellence and a New Zealand Science and Technology Medal and was part of a team that won the 2019 Science New Zealand Supreme Award. Survivors: his wife, Alison; children, Thomas and Emily; and brother, Arthur, ’63, MS ’65, PhD ’71.

After long days of highly publicized political negotiation, former Alameda County supervisor Wilma Ying Chan liked to sit down with a smaller audience. “I have an 18-month-old,” says Chan’s son, Daren. “We would FaceTime every night, and she would sing to him.” The Beatles and the Carpenters were play-list staples, but one of Chan’s favorites was “Evening Prayer” from the opera Pansel and the Greetel. In a career dedicated to public service, Chan frequently found herself in the spotlight. “She recognized that this was part of the job of being a public figure,” Daren says, “and a necessary cost that came with the most important objective of implementing change for underrepresented communities.”

Wilma Ying Chan, MA ’94, died on November 3 after being struck by a vehicle while walking her dog in Oakland. She was 72.

Chan’s desire to effect change was sparked early. “I always felt marginalized as a young girl and daughter of immigrants,” Chan said in an alumni spotlight for the School of Education’s centennial in 2017. After college, she helped found the Chinese Progressive Association in San Francisco and worked to save child development centers in Oakland. Fellow activists encouraged her to run for the Oakland School Board in 1990; she won, becoming one of the board’s first two Asian Americans. More firsts would follow: In 1994, Chan became the first Asian American to the Alameda County Board of Supervisors, and in 2000, she became the first female and first Asian American majority leader of the California State Assembly.

During her time in the state assembly, she authored legislation to establish a no-lead standard for drinking water pipes, to extend affordable health insurance to 800,000 uninsured children and to ban toxic chemicals used in flame retardants. In 2010, Chan reclaimed her seat on the Alameda County Board of Supervisors, where she served until her death.

David Brown, ’90, Chan’s former chief of staff, remembers how she brokered a seemingly impossible deal between Sutter Health and the Alameda County Health System to save San Leandro Hospital, and then, after she joined the state assembly, how she drafted the Hospital Fair Pricing Act, which prevented hospitals from overcharging uninsured patients, and won approval for $100 million to expand state preschool programs. “When she was in a board meeting and trying to sway her colleagues, she just knew what to say and how to say it,” says Brown, who succeeded Chan as Alameda County supervisor. In an irony that wasn’t lost on Chan, change had always been part of her identity. “They gave her the Chinese name Huànyīng—meaning ‘blessing’—because my great-grandfather wanted my mom to be a boy,” Jennifer Chan said at her mother’s memorial service. “My mom often shared that instead of changing who they were, she would change the world. And she did just that.”

Chan is survived by her two children, two grandchildren and two siblings.

—Kali Shiloh

Pathbreaking Leader of California State Assembly
spiritual centers and traveled to six continents. Some of her most memorable trips were exploring Europe with her family, crossing the U.S. with each of her children, snorkeling the Great Barrier Reef and traveling to China, Kenya and Argentina. Survivors: her children, grandchildren and siblings.

1970s
Marjorie Ellen Tripp, ’70 (biological sciences), of Asheville, N.C., September 18, 2019, at 70. After earning her MD at Yale, she worked for almost 40 years in pediatric cardiology. Survivors: her daughter, Britanny Caudill; grandson; and two sisters.
Lisa Robin Kantrowitz, ’74 (human biology), of Chilmark, Mass., June 6, at 68, of cancer. She earned her MD from the U. of Michigan and then trained at Columbia Presbyterian and Mass General. She worked as a surgeon and interventional radiologist at Yale New Haven Hospital and UC Irvine. She later had a career as an investor. She cultivated numerous intellectual passions and loved sharing them with others. Survivors: her husband, Elliott Fankuchen; and children, Sam Fankuchen, ’08, MA ’09, Alex Fankuchen, Peter Fankuchen and Ana Fankuchen.
Jonathan King Feraulio, ’76 (math/computational science), of Palo Alto, July 16, at 67, of ALS. He earned his MBA from Santa Clara U. He was a Silicon Valley software engineer and entrepreneur. At Adobe, he helped develop the SVG, PDF and ePDF specifications. He was later a distinguished engineer at IBM. While paralyzed by ALS, he wrote two books using eye-gaze technology and programmed a text-to-speech web app for ALS patients. Survivors: his wife of 47 years, Karen Kang; daughters, Nicole, Natalie and Allison; two grandchildren; stepmother, Karen; and three siblings.
Lise Ann Kimball, ’76 (art), of Dana Point, Calif., March 27, at 67, of cancer. She was on the field hockey team. She studied sculpture at the Saci College of Art and Design in Florence, Italy. She began her career as a graphic designer and later found her passion in sculpting marble and writing mystery novels. She was an avid hiker and horseback rider and also pursued interests in Tai Chi, aromatherapy, gardening and also pursued interests in Tai Chi, aromatherapy, gardening and Tai Chi, aromatherapy.
Survivors: her children, Lillian Clausen and Krist; children, Joseph and Haley; parents, Sherian and Vernon, ’60; and brother.

1990s
Joseph Robert Jordan Plummer, ’92 (psychology), of Southlake, Texas, November 15, at 52. He was an All American swimmer and represented Australia at the 1988 Olympic Games in Seoul. He later earned his MBA at UCLA and worked on Wall Street before shifting to a career selling luxury real estate. He was also a swim coach, including serving as an assistant coach at the U. of Hawaii. Survivors: his wife, Kris; and two children.
Sacha K. Henchman, ’93, MS ’94 (civil engineering) of San Francisco, October 1, at 50. He was the cycling team captain. After working at an engineering company in Massachusetts and as a software developer in California, he changed course, interning as a cabinetmaker and learning woodworking and carpentry. He was also a Passivhaus designer and co-founded Stingray Builders in 2007, focusing on affordable, high-quality, energy efficient solutions. He enjoyed cycling through the Alps and loved taking friends on extreme mountain-biking adventures. Survivors: his mother, Kitsie Henchman-Sallet; stepfather, Herbert Sallet; stepmother, Kate; sister; and two stepbrothers.

EARTH, ENERGY AND ENVIRONMENTAL SCIENCES
Lawrence Edward Mannion, PhD ’60 (geology), of Oakland, August 1, at 97. He served in the Army during World War II. He traveled extensively during his career as a geologist. Family trips to geologically interesting places, including Yosemite and the Tetons, required frequent stops at road cuts and outcrops, rock hammer in hand. He also enjoyed involvement with the Society for Creative Anarchism and local Catholic outreach to the needy. He was predeceased by his wife of 61 years, Emily. Survivors: his children, Mary Rowe, Lawrence Fellows-Mannion, Margaret Smart and John; five grandchildren; great-granddaughter; and two sisters.

EDUCATION
Carl Heinz Feldman, MA ’51, of Menlo Park, December 8, 2020, at 92. He worked as a chemist for Aramco in Saudi Arabia, served in the U.S. Army in Germany and taught chemistry at Hillsdale High School in San Mateo, Calif., before moving on to a new career as a realtor and eventually running his own real estate company. He supported environmental and social justice causes and enjoyed hiking, mountaineering, California history and activities with Stanford alumni. He was predeceased by his ex-wife, Jeanine, and two grandsons. Survivors: his children, Richard, Fred, Anise and Mary; four grandchildren; great-granddaughter; and two brothers.
Joseph Ehrman III, MA ’53, of San Francisco, October 22, at 97. He served in the Army during World War II. He taught for 34 years in San Francisco, including three decades at Lowell High School, where he was a teacher of mathematics and physics, an analytical drawing counselor, testing coordinator and dean of students. He was also scoutmaster of Troop 14 for 49 years and was awarded the Silver Beaver for his service. His other passions included car travel and photography and attending the opera, theater, ballet and symphony. Survivors: his wife of 52 years, Diane Roth Ehrman, ’48.
Joan Louise Trigg Perkins, Gr. ’56, of Newark, Ohio, September 3, at 89, of advanced chronic obstructive pulmonary disease. She was an avid artist and enjoyed painting and spending time with family and friends. Survivors: her cousin. Marjorie Anne Riley Summerville, MA ’68, of Greenbrae, Calif., October 10, at 82. During her 40-year career as an educator, she was an elementary school teacher, substitute and aide in San Francisco public schools. She was also development director at St. Gabriel School and volunteered for St. Gabriel’s Parish, St. Ignatius College Preparatory and Mercy High School. She served her community through Expanding Your Horizons in Math and Science, Court Appointed Special Advocates and the American Association of University Women. Survivors: her husband of 46 years, Ed; son, Peter; and sister.

ENGINEERING
Donald Charles Baxter, MS ’55, PhD ’58 (mechanical engineering), of Ottawa, Canada, August 24, at 91. He worked at Ottawa National Research Council and then Government Supply
and Services. He later served as Canada’s assis-
tant auditor general. He used his technical exper-
tise to support the Catholic Immigration Centre, 
Historical Society of Ottawa and Ottawa Baytown 
Museum. He also enjoyed traveling and playing 
tennis and bridge as he was predeceased by his 
wife of 66 years, Mary. Survivors: his children, 
Debbie and Ross; and four grandchildren.

Robert LeRoy Smith, MS ’55, PhD ’60 (electrical 
ingineering), of Sutter Creek, Calif., September 3, 
at 90. He taught in Hawaii and at Cornell and 
worked at Stanford as a research physicist focusing 
on very low-frequency radio waves generated by 
lightning. He wrote his first computer program in 
1955 and was a member of the IEEE Floating Point 
Standards Committee. He was also a member of 
the San Francisco Accordion Chamber Ensemble. 
He was predeceased by his wife of 61 years, Lois 
(Kurrie, ’56). Survivors: his children, Ceci Gross, 
Aliee Richter and Marcus; three grandchildren; 
great-grandson; and two sisters.

Noble Hancock, MS ’56 (electrical engineering), of 
Portola Valley, Calif., August 21, at 99. He served 
as the Army during World War II. He taught at San José 
State until 1961, then served as program officer of 
the Luke B. Hancock Foundation in Palo Alto. 
As an avid musician, he built his own 
1000-watt transmitter and served as treasurer of 
the Santa Clara County Amateur Radio Association. 
Survivors: his wife, Lorraine; children, Joyce Gavin, 
Bruce, Janice Pettit, Diane Hancock Sheehy, ’70, 
James and Allen; eight grandchildren; eight great-
grandchildren; and great-great-granddaughter.

Glen Everett Myers, MS ’57, PhD ’62 (mechan-
ical engineering), of Madison, Wis., December 2, 
2019, at 85. He was professor emeritus of 
mechanical engineering at the University of Wis-
consin-Madison; his 40-year teaching career 
included publishing his thermodynamics notes 
for undergraduates as a textbook in 1989. He was 
a longtime member of the American Society of 
Mechanical Engineers and the American Society 
for Engineering Education, and received several 
departmental, college and campus-wide teaching 
awards. He also enjoyed attending bowl games 
and concerts and preserving his family history. 
He was predeceased by his son Gregory. Survivors: 
his wife of 56 years, Susan (Ralph, ’60, MA ’61); 
children Timothy and Christine; and grandson.

Elmer Dale Martin, PhD ’68 (aeronautical and 
astronautical engineering), of Cupertino, Calif., October 5, 
at 87, of complications of Alzheimer’s disease. Over 
his 40-year career with NASA at Ames Research 
Center, he used theoretical mathematics and com-
putational methods in fluid dynamics to study 
boundary shock waves, the Riemann hypothesis, 
multidimensional complex variables and inflated 
sphere landing vehicles. He also enjoyed tennis, 
skating, jogging, dancing and staying fit. Survivors: 
his wife, Barbara; children, Carol Riccio and Kreg; 
and stepdaughter, Karen Hersh.

HUMANITIES AND SCIENCES
Nicholas John DiNapoli, MA ’61 (art), of Santa 
Barbara, Calif., November 8, at 84, of heart 
failure. At General Motors Styling, he worked on the lunar 
rover program. Later at a series of other compa-
nies, including two that he founded, he designed 
cars for the U.S. Department of Transportation, an 
airboat, the DiNapoli automobile, high tech military 
components and Santa Barbara’s downtown 
shuttle buses and Maritime Museum. He was also 
head of the art department at Powell Skateboards 
and taught design at UC Santa Barbara. Survivors: 
his wife, Peg (Mullen, ’62); children, Stella Acuna 
and Nick Jr.; and three grandchildren.

David Evan Kaun, PhD ’64 (economics), of Santa 
Cruz, Calif., September 9, at 88. He played first 
clarinet in the Stanford Symphony Orchestra. After 
a fellowship at the Brookings Institution, he 
became a founding member of the economics 
department at UC Santa Cruz, where he taught 
for 50 years and served as provost at Stevenson 
College. He performed with the Santa Cruz Sym-
phonic for many years and supported the arts in 
numerous ways, including as co-founder of the 
music in May chamber music festival. Survivors: 
his daughter, Abigail; and granddaughter.

Penelope Helen Sarason Vracopoulos, DMA 
’71, of Oakland, July 12, 2019, at 97. She taught 
at Cornish College of the Arts, SUNY Potsdam 
and Washington State U. She also founded 
and led the Gilbert & Sullivan repertory company 
The Pecadillo Players. It performed all the comic 
operas in the composers’ canon during her 
39-year tenure as its director and conductor. 
She also founded the Bellevue Opera and a 
chamber opera group, the Eastside Lyric The-
atre. She was predeceased by her former 
husband, Leonard Sarason. Survivors: her children, 
Heidi Houston, Mark Houston and Penelope 
Houston; and granddaughter.

Christopher Kalman “Casey” Johns, MFA ’77, of 
Racine, Wis., March 2, 2021, at 68, of intracranial 
hemorrhage. He was professor emeritus of art 
Louisiana State U., where he taught painting 
and drawing from 1979 to 2011. His work was exhibited 
at galleries in New York, Chicago, Milwaukee, 
New Orleans and Baton Rouge. He held numerous fel-
lowships, including at the Vermont Studio Colony 
and the David and Julia White Artist Colony 
in Ciudad Colón, Costa Rica, and he was the 2020-
2021 recipient of the Racine Art Museum Fellow-
ship. Survivors: his wife, Mary; son, Eric, and brother. 

Tracy Land Mott, MA ’73, PhD ’82 (economics), of 
Denver, November 4, at 75. He taught at the 
U. of Colorado Boulder before becoming a pro-
fessor and department chair of economics at 
the U. of Denver, where his research focused on 
Keynesian economics and he mentored countless 
junior scholars over his 40-year career. He was 
an active supporter of progressive causes such as 
the fight for a living wage. He also enjoyed 
classic country music, played the guitar and har-
monica and was an avid baseball fan. Survivors: 
his stepchildren, Wendy Bartlo and Brett Bartlo. 

Susan Rickel Welch, MA ’80 (English), of Minne-
apolis, September 4, at 72, after a brief illness. 
She taught English and creative writing at St. 
Catherine U. for more than 30 years. Her publica-
tions included novels and short stories, including 
“The Time, the Place, the Loved One,” published 
in “The Time, the Place, the Loved One,” published 
in “The Time, the Place, the Loved One,” published 
by The Paris Review in 2021 recipient of the Racine Art Museum Fellow-
ship. Survivors: his wife, Mary; son, Eric, and brother. 

Andrew Haden, ’00, San Diego 
William Hagenah, ’66, Kenilworth, Ill. 
Jamie Halper, ’81, Pacific Palisades, Calif. 
Maribel Hernandez-Davis, MD ’85, Penn Valley, Pa. 
David Hornik, ’90, Palo Alto 
Nelson Hsu, ’91, MS ’93, Dallas 
Bacardi Jackson, ’92, Miramar, Fla. 
Theresa Johnson, ’06, MS ’10, PhD ’15, 
San Francisco 
Tonia Kar, ’92, San Francisco 
Juyon Lee, ’22, Stanford 
Danielle Limaco, ’19, San Francisco 
Leslie Luqueno, PhD candidate, Stanford 
Jason Okonofua, PhD ’15, Berkeley, Calif. 
Eddie Poplawski, PhD ’15, San Antonio 
Pablo Poplawski, PhD candidate, Stanford

LAW
Frank Andersson Small, LLB ’64, of Portola Valley, 
Calif., August 8, at 82. He practiced real estate 
and business law for over 52 years with Lakin Speras 
in Palo Alto. He pursued numerous intellectual 
properties at UC Santa Cruz, year, he taught such 
literature, modern fiction, and national and interna-
tional politics. He later studied Russian, Italian 
and calculus. He also enjoyed running, rowing, Roller-
blading and kickboxing. Survivors: his wife of more 
than 50 years, Kay (Stevens, ’60); and sister.

MEDICINE
Larry Jew, MD ’55, of San Francisco, 
September 17, at 96. He served in the Army during World War II. After interning at San Francisco General and

Farewells

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Eddie Poplawski, PhD ’15, San Antonio 
Pablo Poplawski, PhD candidate, Stanford

and completing residencies at San Joaquin General and 
San Mateo General, he and his brother 
opened a private practice in San Francisco in 1957; 
It continues to operate today. He enjoyed reading, 
in both English and Chinese, about history, litera-
ture and art, and a good game of chess. He was 
predeceased by a grandson. Survivors: his wife of 
65 years, May; children, Jonathan, Nicholas and 
Matthew; six grandchildren; and brother.
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As you read this, ramps are on their journey to the sun. One Tuesday night last spring, an image popped into my head of their feathery green leaves unfurling in damp mulch. I knew that ramps (also known as wild leeks) could be found around Washington, D.C., where I was living, but I didn’t know where, exactly. Google Maps and news stories led me to identify a likely target 30 minutes away. I sat there with a half smile—did I dare to go tomorrow?

I had first encountered ramps when I was 19, while working on an organic farm in upstate New York after stopping out of Stanford for a quarter. In the 12 years since, I’d foraged for them four or five times. It would be a stretch to call ramping a tradition, but I aspired to make it one.

As I sat there on my bed, stuck in habits of anxiety and avoidance that predated the pandemic but had worsened during it, I experienced a pull to the woods, acutely, to gather. I’d been feeling unsatisfied, drained by the struggle to figure out whether I’d chosen the wrong paths in career and love or had developed unrealistic expectations for them. The decision to forage was a step toward relearning to trust instincts that had often led me into narrow places.

The next day, when I got to my chosen stretch of woods, I picked a path along a ridge looking down on a creek—ramps prefer creek bottoms and damp hillsides. After two false alarms, I followed another swath of green off trail and around a large fallen tree. There they were, in clumps, just as I remembered: like drooping, rounded swords. I broke off a leaf to be sure and inhaled the sweet, oniony scent. With my trowel, I loosened the dirt at several points around a clump, then levered upwards. Up came three bulbous shoots, their bases covered with layers of yellowing skin and trailing coarse, wavy roots.

I walked on and came to an area on the creek bottom carpeted in ramps. From these, I simply pinched a few leaves off at the stem, one per plant, which allows it to send up a new leaf and eventually go to seed.

In a patch of sunshine, I stopped to take stock. Mainly I felt impressed that this gambit had paid off. I wanted to feel something deeper, and I knew by now that emotion could follow performance. So I made up a ritual: standing with arms slightly out, palms up, and turning slowly in a circle, trying to inhabit thankfulness. “I don’t know exactly what a prayer is,” I thought, with a nod to both Mary Oliver and Robin Wall Kimmerer, whose words have inspired me. I do know how to turn my face to the sun.

The sweetest rituals, I’ve learned, might be the ones you feel just beginning to take root.

Nathaniel Eisen, ’11, is a lawyer and a writer who now lives in Burlington, Vt. Email him at stanfordmagazine@stanford.edu.
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Pastor Darrell Armstrong, ’91, named The Stanford Fund as the beneficiary of one of his life insurance policies.

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