TIGER WINERIES

WHEN ENGINEERING MEETS BIOLOGY

PRISON EDUCATION

PRINCETON ALUMNI WEEKLY

RETURN OF THE CICADAS

JUNE 2021
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Class of '20

Princeton has given me lifelong friends, amazing teammates, and countless lessons in the classroom and on the hardwood.

I give because

Photo by Steven Freeman

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June 2021 Volume 121, Number 10

PRINCETON ALUMNI WEEKLY

An editorially independent magazine by alumni for alumni since 1900

All in the Family 26
Alumni wineries — challenged by nature in recent months — remain labors of love.
By Constance Hale '79

The Toolmaker's Mind 32
Clifford Brangwynne uses the tools of engineering to understand the workings of the cell.
*By Carmen Drahl *07*

A Cicada Reunion 36
Princeton's celebration may have been virtual, but one huge group is coming together for its 17th.
By Elyse Graham '07

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Stronger Together
On the latest PAWcast, Wisconsin Democrat Thomas Nelson *04 discusses why strengthening labor unions is at the center of his political agenda.

Changing the Game
Jonathan Erlichman '12 of the Tampa Bay Rays came to coaching with an unusual background: analytics.

'Coronaphobia'
With facts and humor, Dr. Lucy McBride '95 answers questions about mental health and the COVID vaccine.

Lenni-Lenape
Gregg Lange '70 tells the story of Wilted Grass, who enrolled at Princeton in 1774.

Top: Mogao Cave 275, Northern Liang (420–439), *Que* tower–shaped niche, north wall, west side, Lo Archive photograph, 1943–44, Princeton University (Lo 275-5); from left: courtesy Thomas Nelson *04; Will Vragovic/Tampa Bay Rays

On the cover: Gerry Bishop/Alamy Stock Photo

Immigration bill to help keep STEM grad students in U.S. must include humanities and social sciences

In April, Chancellor Robert Jones of the University of Illinois at Urbana-Champaign and I co-authored an op-ed on the Biden administration's comprehensive immigration reform bill. In the op-ed, which ran in ROI-NJ and Illinois' The News-Gazette, we argued that America "should be trying to keep far more of the exceptional doctoral talent we are cultivating at America's research universities." Here is what we wrote.—C.L.E.

In 1958, a young Israeli doctoral student came to Berkeley, California, to study psychology. He eventually spent most of his career in the United States. The student's name was Daniel Kahneman, and he helped to create the field of behavioral economics, won a Nobel Prize, and became an inspiration to many Americans—from scholars and policy-makers to CEOs and baseball executives.

American doctoral programs remain magnets for talent. Our universities attract the best and brightest from around the world, just as they did in 1958. The next generation of Danny Kahnemans is here now, not just in psychology but in a wide variety of other fields. They can make our country stronger, and we should keep them in the United States if we can.

The Biden administration's comprehensive immigration reform bill now before Congress would go a long way toward fixing our broken system, including making it easier for certain science, technology, engineering, and mathematics (STEM) graduate students to stay in America. That is a smart first step, but the current bill is narrower than it should be. It does not, for example, apply to the field of psychology, so it would not have helped the young Danny Kahneman. That is a mistake.

The challenges facing America are complex. Tackling them requires many skill sets. Yes, America needs computer scientists, physicists and engineers, but we also need agricultural economists, humanists and psychologists. We should be trying to keep far more of the exceptional doctoral talent we are cultivating at America's research universities.

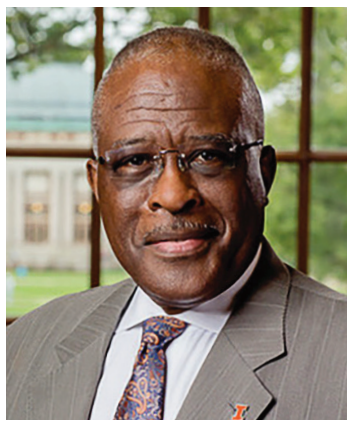
For example: historians and philosophers will help to guide the civic conversations required to bridge social differences and restore public trust. Agronomists and natural resource experts are key to addressing our most pressing global challenges, from food insecurity to climate change. Sociologists, anthropologists and area studies experts provide knowledge crucial to navigating international crises. To address the next pandemic effectively, we need behavioral scientists and experts in global health, infectious disease, immunology and virology, as well as computer modelers.

Of course, academia is only one arena where international Ph.D. recipients can contribute to our society. Students with doctorates in agriculture, for example, are future leaders in food services or agricultural production throughout business, government and the non-profit world. People with doctorates in the humanities will fortify America's cultural institutions, and graduates with natural resources degrees are poised to lead in wildlife conservation or management.

We know these fields are important: American research universities already make a huge investment in their doctoral students across all disciplines. These students in turn make critical contributions to address the great challenges of our day. Many want to stay, and we should want them to do so.

We also have the evidence of history to guide us. We have built the most admired, most productive and most inclusive higher educational system in the world over the past century. This system has been the driver of unmatched educational opportunity and social and economic growth and prosperity. We should stay the course, pushing forward along a proven road to America's sustained success.

This is the moment to act. For the past four years, we watched with alarm as the federal government—in ways large and small—jammed the gears of the legal immigration system and made it increasingly difficult for law-abiding immigrants to work, live and study in the United States.



COURTESY OF THE UNIVERSITY OF ILLINOIS

SAMEER A. KHAN/FOTOBUDDY

"Making it easier for doctoral students to work and live in the United States will encourage extraordinary people to study here and to contribute to our society after they graduate."—University of Illinois at Urbana-Champaign Chancellor Robert Jones and Princeton University President Christopher L. Eisgruber

We are heartened by the Biden administration's recent measures to undo this damage, including restoring the DACA program. The President's Executive Order tasking agencies to adopt a more sensible and hospitable immigration system sets exactly the right tone.

These are important and essential actions, but we must do more to attract and retain the world's best talent. Making it easier for doctoral students to work and live in the United States will encourage extraordinary people to study here and to contribute to our society after they graduate.

American history has demonstrated that one of our country's greatest strengths is the ability to attract superb talent from throughout the world. We see that talent all around us at our universities. Do we want these remarkable doctoral candidates to stay and contribute to our society after we have trained them? You bet we do, and we look forward to working with the administration and Congress to make that possible.

Inbox

REMEMBERING SHULTZ

Bettmann/Getty Images

The tribute to George Shultz '42 by Anne-Marie Slaughter '80 (Princetonians, April issue) brought back memories of my conversation with Secretary Shultz in 1984. Learning of President Reagan's plans to visit China, I wrote a letter to request a meeting. With the incredible gumption of a 24-year-old who had traveled halfway around the world to live and work in Beijing, I thought it would be interesting for Reagan to hear about China through the eyes of a young American. To my surprise, I received word that the president would like to meet.

On the day of Reagan's reception with the U.S. business community, I was ushered into a room next to the ballroom at Beijing's Great Wall Hotel. Perched on the edge of a table was Shultz, also waiting for Reagan to arrive. Although shy by nature, I realized that this was a once-in-a-lifetime opportunity. Princeton was the conversation opener, of course. When he learned I'd been living in Beijing for two years, he asked all of the questions I had prepared to speak about with the president: impressions of the people I interacted with, the lingering impact of the Cultural Revolution, the slow opening of markets and loosening of economic restrictions, the progress of American companies seeking to gain a foothold in China, the social campaigns attempting to influence behavior and thought, the restrictions on my movement and travel. He was authentically curious and kind. And, yes, I did find myself wondering about whether the story of the tiger tattoo was true.

Sara Judge '82
Arlington, Mass.

TIGER TATTOO

I usually browse PAW for news of friends and classmates, but I was really struck by the Q&A with James Baker III '52 ("The Texan in Washington," May issue), a great American and personal favorite. One question revolved around the story of a tiger tattoo reputed to be sported by his good friend George Shultz '42.

My father was Princeton '43. I believe he was in Quad with future Secretary Shultz and played JV football with him.

During an extended illness late in my father's life, the story of said tattoo on Shultz's derrière became a cause célèbre. I asked my father if he had ever heard of it.

"Heard?" he replied. "I've seen it!"

Needless to say, somewhat nonplussed, I asked how that came to be. Apparently after a Friday afternoon win, Dad's friend George went to New York City to celebrate the victory. The next Monday, the tattoo made its official maiden appearance in the JV locker room after practice.

Jack Dunn IV '73 k'43
Key Largo, Fla.

TEACHING CIVICS

I enjoyed Professor Robert George's mention of his students' "shock" at reading Hamilton and Madison to the effect that the United States was constituted as a "republic" and not a "democracy" ("Why We Need Civics," April issue). He is quoted saying, "No one ever told them."

None of them, I guess, had ever been my student at Saint Ann's School in Brooklyn, where, even if they did not read my book, they would have learned that the United States is both. We began as a kingless republic, like Rome and Florence, and became, like them, a republic that was less and less aristocratic and more and more democratic after a few generations. The Roman and Florentine — and First and Second French — republics, however, returned to monarchy with the Caesars, the Medici, and two Bonapartes.

Those who once learned that democracy and republic are antithetical may be unprepared for what shocked my students, which was my suggestion that without a good civics education, a democratic electorate might one day elect to be ruled by one instead of many, turning their republic into a democratic monarchy or elected dictatorship by miseducation. The recent attempted coup by our farcical Napoleon has reminded me that history teachers need to teach some things repeatedly — but I'm retired now.

Bill Everdell '63
Brooklyn, N.Y.

VON HIPPEL'S INFLUENCE

It was a pleasure to see Professor Frank von Hippel's championing of nuclear safety and security appreciated ("The Happy Warrior," April issue). As an undergraduate majoring in what we used to affectionately call Woody Woo, I was focused on market incentives in environmental policy. But after taking one class with von Hippel, and then another, I changed my professional trajectory to the one I'm still on today. As a professor working on nuclear, biological, and chemical weapons

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PRINCETON
ALUMNI WEEKLY

An editorially independent magazine by alumni for alumni since 1900

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threats, bridging the academic, government, and think-tank worlds, I'm regularly reminded that not only does von Hippel "know people who know people," as you quoted him saying, but so many of them also know — and deeply appreciate — him.

Philipp C. Bleek '99
Monterey, Calif.

PARTY POLITICS

I read both "What's Next" articles ("What's Next? The Democrats" and "What's Next? The Republicans," April issue), and they captured the divide between Democrats and Republicans. The Democrats article was long on specifics, policy, and issues. The Republicans article, while addressing many of the same issues, was short on specifics and policy and, as expected, long on values, especially religion. While the author, Ryan T. Anderson '04, is careful to nuance this — writing, "Where people assemble in a variety of houses of worship to give thanks to the Creator so central to the Declaration" — for the vast majority of Republicans religion equates to Christianity. So much for the separation of church and state if Republicans must ask, as Anderson writes, how effectively policies "defend core American values like life, marriage, work, and religion."

John W. Unger Jr. '74
Saugus, Calif.

Ryan T. Anderson '04's statements in a recent PAW forum concern us. Anderson directly advocated for policies of the Trump administration. PAW could surely draw on more credible conservative voices.

Mr. Anderson employs a far-right vocabulary in the guise of moderation. Concepts like "elite," "nature," "globalism," "core values," and "forgotten Americans" are hardly neutral. Mr. Anderson has repeatedly demonized LGTBQ+ and nonreligious American citizens using debunked social science and historical research. His assertion that "people are created male and female, to unite in marriage and raise children together in a family" constitutes a dog whistle against such groups.

We find Mr. Anderson's denunciation of "the alt-right, QAnon, racism, antisemitism, or xenophobia" ironic given his championing of homophobic and transphobic policies. He edited a journal in which one contributor championed criminalization of "sodomitical relationships." Mr. Anderson played a leading role in a 2017 vice-presidential working-group report that provided justification for the Trump administration's ban of transgender Americans from military service.

The "free exchange of ideas" defines American society. Yet instrumental uses for dialogue exist: the appearance of tolerance, presumed parity between views, and the heightened profile of participants. Criticism may trigger calculated claims of censorship; Anderson decried "cancel culture" upon critical reviews of his book *When Harry Became Sally: Responding to the Transgender Moment* (2018).

The state of the country leaves Americans in need of responsible conservative interlocutors. We salute PAW's willingness to seek them out; unfortunately, Mr. Anderson does not qualify.

Timothy Nunan '08
Berlin, Germany
John Raimo '08
Paris, France

ADMITTING THE CLASS OF '25

Is a 4 percent admission rate to the freshman class really a good thing (On the Campus, May issue)? No, because while the admissions committee has rightly increased diversity, the University's elite status has to a much greater degree shrunk the percentage of students who can be admitted.

What happens to students who would have been admitted in past years, but now are denied admissions? They go somewhere else. How many future Nobel Prize winners or social activists or future research scientists does Princeton miss out on having in its community?

This problem will continue to grow unless we do something to increase the number of students admitted. A logical solution, one that NYU has embraced, is to have additional campuses. These sites could have other areas of study that are currently not a focus at Princeton,

increasing its expertise overall.
Kim Masters '68
Asheville, N.C.

EXPANDING PRINCETON

Regarding the upcoming expansion of the undergraduate student body (President's Page, April issue): When Sebastian Thrun started the Massive Open Online Course (MOOC) experience at Stanford before starting Udacity, he noticed a peculiar phenomenon. Many of his Stanford undergrads preferred to take his course online rather than attend in person. He asked why, when they or their parents were spending good money for the privilege to attend Stanford in person. The answer was that they could rewind and replay parts where they may have had trouble following the first time, an opportunity not available in person.

Is Princeton willing to experiment with the MOOC/in-person mix? If so, that might be another way to enlarge the number who can come onto campus for part of their learning, while taking MOOCs when possible from home.
Siddharth Dasgupta *86
Moorpark, Calif.

FROM THE ARCHIVES

Women's hockey alumnae Mariesa Mason Lea '09 and Laura Watt Taylor '07 wrote to identify their teammates in our February From the Archives photo. They are, from left to right, Micol Martinelli '08, Monica Brennan Peterson '09, Brittany Salmon '08, Julie Flynn '10, Sonja Novak '08, Alison Ralph '07, Christine Foster'09, Melanie Wallace '10, Marykate Oakley '08, Amy Bourbeau (coach), and Brittany Parisi '10.

Frank Wojciechowski

FOR THE RECORD

Joel Primack '66's class year was incorrectly identified in an April feature story about Frank von Hippel.

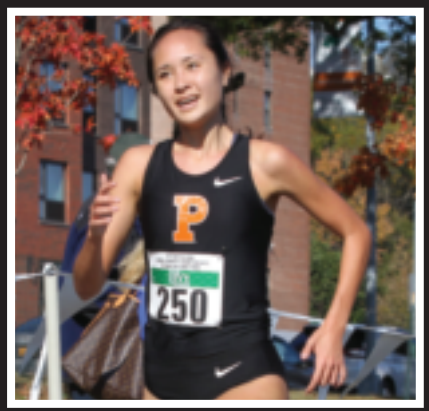
PRINCETON VARSITY CLUB

Congratulations to the Great Class of 2021

WILLIAM WINSTON ROPER TROPHY
Daniel Kwak '21 • Fencing

C. OTTO VON KIENBUSCH AWARD
Clara Roth '21 • Field Hockey

CLASS OF 1916 CUP
Ollie Schwartz '21 • Heavyweight Rowing



ART LANE '34 AWARD
Melia Chittenden '21 • Track & Field/XC

SPECIAL RECOGNITION LEADERSHIP AWARD

Maddie Bacskai '21 • Field Hockey

AJ Chen '21 • Volleyball

Chris Wilson '21 • Heavyweight Rowing

ART LANE '34 AWARD
Matthew Marquardt '21 • Swimming & Diving

CLASS OF '67 PVC CITIZEN-ATHLETE AWARD
Vietta Johnson, M.D. '82 • Track & Field

MARVIN BRESSLER AWARD
Adam Maloof • Athletics Fellow, Baseball

LORIN MAURER h78 AWARD
Karen Malec • Athletics Event Operations

The above awards were presented as part of the 2021 Gary Walters '67 PVC Awards Banquet, which honors varsity student-athletes, alumni and supporters of Princeton Athletics. To learn more about the 2021 award recipients or the Princeton Varsity Club, please visit www.PrincetonVarsityClub.org.

On the Campus

April and May brought vibrant colors to the campus, as seen in these blooming magnolias near Henry Hall. *Photograph by Ricardo Barros*

Q&A: ANDREA GOLDSMITH

Engineering Expansion

New dean shares her plans to grow, diversify, and foster innovation

Andrea Goldsmith became the dean of Princeton's School of Engineering and Applied Science in September, and in her first year she's made it a priority to improve diversity and develop plans to expand the school's student body and physical footprint.

Before joining the University, she was a professor at Stanford. A leader in the development of wireless communications, in April 2020, Goldsmith became the first woman to win the Marconi Prize, the highest honor in telecommunications research. She is the chair of a diversity and inclusion committee for the Institute of Electrical and Electronics Engineers (IEEE). She also founded two companies and has 29 patents.

Goldsmith spoke to PAW about her journey to Princeton and her plans for the engineering school.

What interested you about a career in engineering?
I didn't start out thinking that I was going to be an engineer. My dad was a mechanical engineering faculty member, so he suggested that I declare engineering when I started at the University of California, Berkeley, because it would be a lot easier to transfer out than to transfer in. My first year I was taking math and physics courses and working full time, and I did poorly. That summer, I took a step back and reevaluated. The next semester, I was taking an algebra class with a female TA, the first female math graduate student I'd actually seen. It was just so inspiring. I aced that class and caught up with my other studies, and I realized: OK, I can do this.

What advice would you offer students who struggle?
I like to say it's good to fail early and often. I think it's normal in your first year to question whether you really belong here, but having the resiliency to say, "I'm going to make that decision and I'm not going to let my failures or what other people think dictate whether I can overcome them or not" is important. It served me well in later challenges and failures, from not getting into my first choice (Stanford) for graduate school to the many times my two companies were on the brink of failure. I'm not afraid to take risks, and in many ways that has helped me get to where I am today.

Can you talk about how the gender gap in engineering impacted you?
You walk in a room and you're viewed differently. I'll tell you one anecdote: When I started my faculty position at Caltech, there were three offices in the complex where I was sitting, and my department chair's office was next to me. Everyone assumed I was his administrative assistant just because I was next to him and I was female. Diverse people don't get the same opportunities as nondiverse people, and that means the profession suffers as a result.

Why were you interested in becoming the engineering dean at Princeton?
I generally wasn't interested in leadership roles at universities because I didn't believe they would lead to significant impact. So when H. Vincent Poor [*77], who was interim dean of engineering and is a longtime friend and collaborator, suggested I apply, I told him I was unsure if I'd be able to have the impact I would want at a place like Princeton. He pointed me to the strategic plans for engineering developed in 2016, which were very bold and ambitious and included building a whole new neighborhood that would be a catalyst for collaboration within and across engineering and the entire University. I realized there is no better opportunity

"I'm not afraid to take risks, and in many ways that has helped me get to where I am today."
— Andrea Goldsmith

David Kelly Crow

for me anywhere in the country to lead and have impact.

What priorities did you focus on in your first year?
A lot of my first year was strategic planning. There's a number of things I did early on, particularly related to President Eisgruber ['83]'s call to combat systemic racism on campus. One was I put in place best practices for faculty hiring and crafted a very detailed action plan on diversity and inclusion, including anti-racism. We also increased the number of graduate students (35 additional students over two years) in engineering. Additionally, we are experimenting with a one-year master's program for current seniors and members of the Class of 2020. We've had about 70 students apply to the program.

What about initiatives for undergraduate students?
The first year is where we lose a lot of our diverse students. So we've added a set of classes for first-year students that pose math and physics through the lens of engineering and how you need to learn these tools in order to apply them in ways that make the world a better place. Those classes have a tremendous retention rate of diverse students in STEM. Undergraduates who major in engineering sometimes go on to pursue other careers. I want to keep them in engineering because Princeton educates great leaders; we need stronger ties to industry so our students can see what it's like to be an engineer.

Can you talk more about research collaborations with industry, such as the Google AI Lab in Princeton?
I think it hasn't been a focus to really forge strong ties between industry and Princeton's faculty and students. In my own experience, I was constantly talking to people in industry and I was funded by industry for a lot of my research. My former students were funded by people from industry and they got tremendously valuable opportunities from those relationships. Part of my strategic planning is finding ways to connect to industry.
Interview conducted and condensed by C.S.

READ MORE in an expanded interview at **paw.princeton.edu**

ENDOWMENT INVESTMENTS

Resources Committee Recommends Partial Divestment from Fossil Fuels

The Resources Committee of the Council of the Princeton University Community (CPUC) recommended that the University dissociate from fossil-fuel companies under certain conditions. The guidelines were sent to the Committee on Finance of the Board of Trustees May 10.

At the virtual CPUC meeting in May, the Resources Committee, which considers divestment proposals, explained its four recommendations for dissociation in response to a proposal submitted over a year ago by Divest Princeton, a group of students and alumni.

The committee recommended that Princeton should dissociate from fossil-fuel companies that "deny climate change and/or spread climate disinformation" and those in "the highest greenhouse gas-emitting sectors of the fossil-fuel industry." For companies that don't fall under the latter category, the University should "establish criteria for conditional dissociation from fossil-fuel companies that have not undertaken an acceptable path towards carbon neutrality."

Since those recommendations require further decision-making to set clear guidelines, the committee recommends that Princeton "create an administrative process and determine what expert input is needed to establish, implement, and sustain actionable criteria for dissociation." It also notes that these decisions should be based on "current and prospective actions," not past behavior. Resources Committee chair Blair Schoene, an associate professor of geosciences, explained, "We don't feel it's in Princeton's interest to police the past actions of companies, but it is in our interest to build a moral platform for us to stand on with regards to these partnerships going forward."

Schoene said the recommendations are based on moral and ethical grounds and take into consideration committee guidelines for divestment, including sustained interest on campus, contradictions with University values, and consensus on how the University should respond. Student support for the move was clear, he said, after an undergraduate referendum in November showed 82 percent of those responding supported divestment.

No timeline was given for when the Board of Trustees will announce a decision. In an April *Daily Princetonian* op-ed on next steps, Jim Matteo, vice president for finance and treasurer, wrote, "The Resources Committee's recommendations will serve to inform the trustees' decisions but will not determine them."

In a statement, Divest Princeton criticized the recommendations as "not enough." "The recommendations announced on Monday [May 3] are the least Princeton can do," the group said. "We call on Princeton to dispense with the committees and finally take action against this blatantly destructive industry." *By C.S.*

NEW AVENUES FOR CANCER RESEARCH

The LUDWIG INSTITUTE FOR CANCER RESEARCH is opening a Princeton University branch that will focus on cancer metabolism, the University announced in April. Joshua Rabinowitz, a professor of chemistry and the Lewis-Sigler Institute for Integrative Genomics who specializes in cancer and metabolism, is director of the branch, and Eileen White of Rutgers University serves as associate director. Yibin Kang, Princeton's Warner-Lambert/Parke-Davis Professor of Molecular Biology, is a principal investigator and founding member.

Rabinowitz said the branch "offers us the chance to capitalize on multiple areas where Princeton is a world leader and has world-leading technologies that haven't yet been applied to cancer."

STUDENT DISPATCH

For Gap-Year Students, Pandemic Is Chance to Explore New Paths

By Richard Huang '23

The pandemic disrupted many Princeton students' plans when classes went virtual and social life was restricted. One popular alternative was taking a gap year: According to a memo from Dean of the College Jill Dolan, 496 students originally in the classes of 2021, 2022, and 2023 opted to do that this year, while 217 admitted students from the Class of 2024 deferred enrollment.

Laeo Crnkovic-Rubsamen '24 had already taken a gap year before coming to Princeton and had no plans for a second. But that changed when Princeton announced in early August that most students would not be allowed on campus in the fall. "I found my learning style was not conducive to the virtual experience," said Crnkovic-Rubsamen, who also realized he wouldn't be able to enjoy the social aspects of college online.

Around that time, a friend from high school reached out about creating a startup, now called Plexus. The idea was to create a note-taking app that could scan through typed notes and make note-taking more useful.

Crnkovic-Rubsamen decided to focus on the startup. Since then, he's spent much of his time either coding or in team meetings. He plans to enter Plexus in startup competitions in preparation for a launch in early summer.

The gap year has been "a great adventure," said Crnkovic-Rubsamen. "It's been a steady growth process."

Alice McGuinness '23 also decided to take a gap year when she realized classes would be virtual. Last summer, McGuinness interned for Integrated Refugee & Immigrant Services (IRIS), a nonprofit in Connecticut that helps local refugee and immigrant families. She helped connect refugee and immigrant youth to remote-learning resources.

She decided to stay with the nonprofit and took on new responsibilities. She now organizes speaking events, trains interpreters, calls IRIS clients for vaccine outreach, and organizes a program that pairs English-speaking volunteers with refugee women who are learning the language.

In addition to her work with IRIS, McGuinness works as an ESL tutor and volunteers with Maitri, a nonprofit serving South Asian victims of domestic violence, transcribing interviews for them. She took Urdu language classes in the fall and plans to take a Bengali language class this summer, both through the U.S. Department of State's Critical Language Scholarship Program.

Life has settled into a rhythm. "A tiny part of me feels like I could just keep working there forever," she said. "[My work] has definitely helped me figure out that this is something I'd like to do in the future, either working at a nonprofit or working with immigrants and refugees."

Lydia You '23 had been thinking about a gap year even before COVID-19 hit. She wanted to explore a career in journalism and think about what she would do for independent work as a computer science major. She planned for an in-person journalism fellowship in a newsroom, along with some international travel, but "during COVID, none of my plans worked out," she said.

You did find a remote position at *The Argonaut,* a local newspaper in Santa Monica, writing stories about technology and politics and creating data visualizations related to the stories.

"It was such a wonderful experience because that really was my first exposure as a journalist, albeit in a very weird, virtual time," said You. She also had a software-engineering job with Borderless, a financial technology startup.

By winter, she had left her jobs and began feeling directionless as she worried about wasting her free time. "I had a huge identity crisis, and I was also facing burnout, and I was questioning my decisions about my life," said You. "But I think once I had that moment, it helped me be OK with where I was."

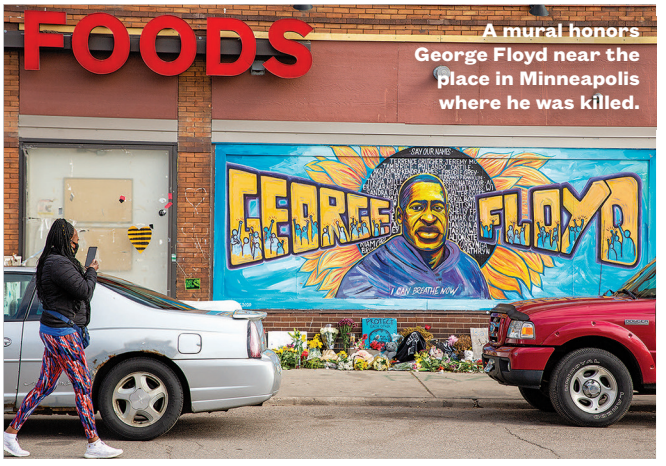
She recently worked and lived on a farm for three weeks, and she's been reading and writing poetry. While You doesn't think she planned her gap year well, she's not upset with what she's been able to do.

"A lot of this past year was dismantling all these preconceptions I had of what a successful life was and what a successful life for me would be," said You. "I feel like I've become more aware of the world around me and more aware of what will fulfill me."

Illustration: Sam Island; photo: Nastasia Klevak '22

CLASS CLOSE-UP

While Studying Policing and Civil Rights, Students Turn Attention to Current Events



A mural honors George Floyd near the place in Minneapolis where he was killed.

Ted Shaffrey/AP Images

In April, the day after former Minneapolis police officer Derek Chauvin was found guilty of murdering George Floyd, students in the class "Policing, Civil Rights, and Social Change" grappled with whether the verdict represented actual accountability.

Students held differing views. "For me this doesn't look like accountability," said Gina Feliz '22, a concentrator in the School of Public and International Affairs. "Accountability means that every system that led to the death of a Black man by the hands of police needs to be reckoned with — not just one person."

Earlier classes laid the foundation for this conversation to happen. "I spent a lot of time in the first couple of weeks building trust and making sure students were comfortable with sharing opinions in what felt like a safe space," said Udi Ofer, a visiting lecturer in public affairs and head of the American Civil Liberties Union's Justice Division, who taught the class. "I talked about my own views while at the same time explaining how I'm going to create an environment that accepts all views."

Although Ofer has taught at the University for more than three years, he was inspired to create this new spring-semester class following the events of last summer, which reignited conversations around racial justice, police brutality, and mass incarceration. "This seminar is meant to bring this national conversation to life," he said, "by studying both past and present policing in America and by introducing students to the current debates on policing in the United States."

> **"This seminar is meant to bring this national conversation to life by studying both past and present policing in America ... ."**
>
> **— Udi Ofer, visiting lecturer in public affairs**

The class of nine students met on Zoom weekly to discuss aspects at the intersection of policing and civil rights, including Supreme Court decisions that have affected policing; concepts such as "broken-windows" policing, which links disorder within a community to more serious crime; and data such as the numbers of active police officers, budget statistics, the most common reasons for arrest, and the rate of prison growth. The central texts for the class were *The New Jim Crow: Mass Incarceration in the Age of Colorblindness,* by Michelle Alexander; *From the War on Poverty to the War on Crime,* by Elizabeth Hinton; and *The End of Policing,* by Alex S. Vitale. Students were required to analyze policy issues and suggest recommendations for change in their final papers.

The class syllabus was adapted to keep up with current events. That's why Ofer decided to make time for the class to watch and dissect the opening arguments of the Chauvin trial. "We always try to make the conversation current because, as we're studying these issues in the classroom, it is also happening in real time outside of the classroom," he said. *By C.S.*

BLOOMBERG GIFT

A gift from Bloomberg Philanthropies, founded by former New York City Mayor Michael R. Bloomberg, will establish the EMMA BLOOMBERG CENTER FOR ACCESS AND OPPORTUNITY at Princeton, with the aim of expanding support for first-generation college students and students from lower-income and underrepresented backgrounds, the University announced in April. *The Wall Street Journal* reported that the gift was $20 million.

The center is named for Emma Bloomberg '01, who has worked for education and anti-poverty nonprofits. In a University release, Bloomberg said she was grateful for the opportunities she had as a Princeton student and wants young people from all backgrounds to have access to the same resources, along with "a more comprehensive support system for all who matriculate."

The University announced that Khristina Gonzalez, an associate dean of the college, will serve as the director of the new center, a role supported by a gift from Bob Peck '88, a Princeton trustee and a co-founder and managing director of FPR Partners.

The center will integrate and expand several existing mentorship and enrichment programs, including the Freshman Scholars Institute, the University's Program for Transfer, Non-Traditional and Veteran Students, and the Princeton University Preparatory Program.

Graduate students participate in a 2019 Prison Teaching Initiative training session.

Charting New Courses

Princeton's Prison Teaching Initiative helps incarcerated students earn degrees

In a normal semester, participants in Princeton's Prison Teaching Initiative (PTI) would lead dozens of courses for incarcerated students in New Jersey state correctional facilities and one federal prison. This spring, with pandemic-related restrictions, offerings were limited to seven classes taught with what officials called "approved distance learning techniques and modalities," including paper instruction and assignment packets, textbooks, and brief, two-way electronic messages.

Jill Stockwell *17, PTI's administrative director, is hopeful for a return to normal by fall. She'll have plenty of volunteers available: As of mid-April, 130 graduate students, faculty, and staff had applied to teach or tutor in the coming year. Instructors work in teams, so about 100 can participate when there is a full course load.

"This is an opportunity to teach your own class, to create your own syllabus," Stockwell said, "but also to give back and to extend the resources of an Ivy League institution to this incarcerated group of students, many of whom were pushed out of their school experiences and so are given the opportunity to have a college degree for the first time during a prison sentence."

PTI has been a leader in New Jersey's prison-education community, and programs like it seem poised to grow after Congress restored incarcerated students' access to federal financial aid in the stimulus package passed in December 2020. At Princeton, Provost Deborah Prentice is considering an expansion of community education, including PTI, as part of the University's efforts to address systemic racism.

Princeton's involvement in prison education began in the astrophysics department more than 15 years ago, with postdocs Mark Krumholz '98 and Jenny Greene and Professor Gillian Knapp volunteering as teachers and handling the administrative tasks as well. Greene, now a professor, serves as PTI's academic director, and since 2017, the administrative work has been part of the McGraw Center for Teaching and Learning.

"Every single [student] has recognized that education is the way to change their lives … ."

— Jenny Greene, professor of astrophysical sciences

For graduate students eager to teach, PTI offers the chance to lead classes in math, science, social sciences, and the humanities. The program has offered lab courses for about a decade, including a physics lab added last year.

Most PTI students are pursuing an associate's or bachelor's degree through local community colleges and Rutgers University's Mountainview program. Instructors say PTI teaching is a great experience because of the commitment of the students. While some haven't been in a classroom in more than a decade, Greene said, "every single one of them has recognized that education is the way to change their lives when they get out."

Goni Halevi, an astrophysics graduate student who has taught astronomy, physics, and algebra, said the students in prison are collaborative and engaged; they don't hesitate to ask questions and aren't concerned about how they are perceived by classmates. "They're there to learn and to grow as students," she said. "You really feel that in the way they interact with the instructors."

English professor Jeff Dolven and graduate student Matt Rickard *19 taught one of PTI's first "combined" classes, where Princeton students learn alongside incarcerated students, in 2018. In "Poetry and Belief," six undergrads traveled weekly to East Jersey State Prison for a class that included 12 men enrolled in a Rutgers bachelor of arts program. They explored poems by historical and contemporary poets, and the incarcerated students were devoted to the material and the class discussions, said Dolven, who thought the Princeton students were "elevated by that intensity."

"It gives you a sense of how much intelligence and talent and imagination is locked up in prisons," Dolven said.

PTI's work also has brought formerly incarcerated students to Princeton's campus for summer internships in the sciences and humanities. This year's internships will operate remotely because of the pandemic.

Dolven sees prison education as a tangible way for Princetonians to use their academic expertise to work toward social justice. "At a moment when everybody is asking, 'What can I do?,'" he said, "this is one really important answer." *By B.T.*

Julie Clack/Office of Communications

A NEW LIFE AWAITS YOU

Delivering on a reputation for providing excellent care, upscale service, engaging programs and an unparalleled, vibrant living experience, Maplewood Senior Living is proud to introduce its newest assisted living and memory care community, Maplewood at Princeton.

Models are now open. Join us for an upcoming Open House.

SATURDAY, JUNE 12TH | 11:00 AM - 3:00 PM
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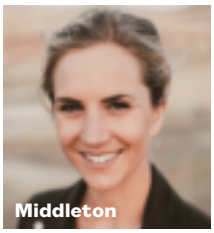
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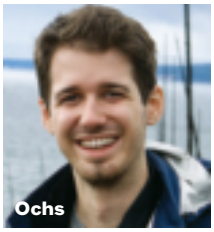
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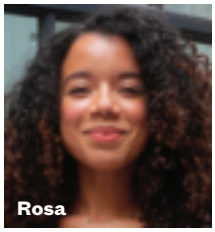

Rosa

Four Grad Students Win Jacobus Honor

Four Ph.D. students were named winners of the Jacobus Fellowship, Princeton's highest honor for graduate students. The award, which supports the final year of study, is traditionally presented at the Alumni Day luncheon, which was canceled this year.

Alexandra Middleton (anthropology) studies neuroprosthetic technologies, which integrate prosthetic limbs with patients' muscles, bones, and nerves.

Pranav Mundada (electrical and computer engineering) is exploring quantum devices, with applications that range from aircraft design to drug manufacturing.

Ian Ochs (plasma physics) studies fusion energy, researching ways to reduce plasma instability with the goal of maintaining a fusion reaction in the lab.

Margarita Rosa (comparative literature) is writing her dissertation on legal doctrines that Portuguese colonizers used to enslave women and their children in Brazil.

IN SHORT

President Eisgruber '83 apologized on behalf of the University for AN INSTRUCTOR'S USE OF HUMAN REMAINS in an online course on forensic anthropology posted last fall. Janet Monge, a former visiting lecturer at Princeton and a curator at the University of Pennsylvania Museum, examined the remains of a victim of the 1985 MOVE bombing in Philadelphia, a police raid and fire that killed 11 people, including five children. The video has been removed from Coursera, an online learning site. In a statement posted April 28, Eisgruber wrote that he had "authorized a fact-finding effort, to be conducted by outside counsel, to help us gain a complete understanding of the scope and nature of Princeton's role in the handling of the remains and related issues."

According to *The Philadelphia Inquirer,* the remains were analyzed after the bombing by Alan Mann, then a professor at Penn, and kept at the Penn Museum. Mann later was on the Princeton faculty, from 2001 to 2015. The Penn Museum has pledged to return the remains to survivors in the Africa family, to whom the remains are believed to belong.

Politics professor Keith Whittington, the interim director of Princeton's Program in Law and Public Affairs, was named to President Joe Biden's COMMISSION ON THE SUPREME COURT OF THE UNITED STATES, established by executive order in April. The 36-member group will analyze "the principal arguments in the contemporary public debate for and against Supreme Court reform," according to a White House press release. Also named to the commission were alumni Heather Gerken '91, dean of Yale Law School; Rick Pildes '79, a professor at New York University School of Law; and Bertrall Ross *03, a professor at the University of California, Berkeley, School of Law.

A new CENTER FOR GENDER AND SEXUALITY at Frist Campus Center will launch in fall 2021, maintaining current services and staff from the Women*s Center and LGBT Center while allowing for expanded programming that relates to the intersections of gender and sexual identity. (According to its website, the Women*s Center "replaced its apostrophe with an asterisk to suggest that we are much more than our name implies: the Center is not just for women nor is it just about women.") The new center "will be better able to carry out our mission to eliminate discrimination and injustice at Princeton based on sex, gender, and sexual identity," said LaTanya Buck, dean for diversity and inclusion in the Office of the Vice President for Campus Life, in a University release.

IN MEMORIAM ROBERT B. HOLLANDER '55, a longtime professor of European literature whose popular courses on Dante inspired generations of students, died April 20 at age 87. Hollander joined the Princeton faculty in 1961

and taught in the departments of French and Italian and comparative literature, chairing the latter from 1994 to 1998. He also was head of Butler College from 1991 to 1995. The East Pyne seminar room where Hollander taught *The Divine Comedy* was rechristened "the Dante Room," and alumni of the course regularly gathered at Reunions, reciting and discussing different passages each year. Hollander and his wife, poet Jean Hollander, published a three-volume annotated translation of *The Divine Comedy.*

IN MEMORIAM SOHAIB SULTAN, the University's first full-time Muslim chaplain, died April 16 of cancer. He was 40. Sultan joined the Office of Religious Life in 2008, starting the Muslim Life Program on campus. After his cancer diagnosis last spring, he continued to preach and posted a blog of reflections, both spiritual and medical. "Over the years he was a marvelous instructor to all of us in how to live," the Rev. Alison Boden, dean of religious life and the Chapel, wrote in a remembrance. "In his last year he taught us even more so how to die."

READ MORE about Sultan's impact at Princeton at **paw.princeton.edu**

Jacobus winners, clockwise from top left: Tony Gambino Photography; Jack Wilson; Aurelia Augusta; Marly Gallardo; In Memoriam, from top: Beverly Schaefer; Sameer A. Khan

Julia Campbell '22 coxes a Princeton men's heavyweight eight racing against Drexel in April.

From top: Row2K; Ethan McAlpine '21

ESSAY: THE COXSWAIN

A View From the Boat

By Julia Campbell '22

Julia Campbell '22 is a coxswain with Princeton men's heavyweight rowing. As this issue of PAW goes to press, the rowers are back in their racing shells after about a year out of the water. Toward the end of the spring semester, the University allowed sports teams to engage in local competition, and the men's heavyweight rowers began by racing St. Joseph's and Drexel in Philadelphia at the end of April.

As the coxswain, I sat in the stern of a 60-foot rowing shell, the only member of the crew with a forward-facing view of the course. The eight male rowers faced me. Their over-6-foot, broad-shouldered frames made for the most formidable blind spot a 5-foot, 3-inch driver could ever imagine.

Short, staccato waves slapped against the six thin boat shells lining the mouth of the lake. Lines of white buoys 2,000 meters long converged in the distance, blurry. In six minutes, a winner would emerge victorious.

I nodded at Ralph, who sat directly in front of me. He nodded back, exhaling as the official started naming the crews in the fourth-varsity Eastern Sprints Grand Final in May 2019. "Harvard, Yale, Princeton ... " Eight black-and-orange oars submerged beneath the choppy surface of the water. "Attention ... " Ralph raised his hands slightly, locking the blade against the tension of the water. "Go."

And with that, the six shells launched into the unforgiving waters like bullets out of a rifle chamber. Blades shredded the lake's surface, throwing a spray of frigid white foam into the air.

I immediately called for 20 quick strokes, nodding at Ralph to take the rate up. All eight men in the boat could hear me through their seats' speakers, which connect to the coxswain's headset. My numb fingers tightened around the steering cables as I tried to hold a straight line against the harsh wind and strong current.

By the 1,000-meter mark, I was sitting dead level with the Harvard and Yale coxswains. I locked eyes with the Yale coxswain for a brief moment and heard her command her crew to give 10 extra-powerful strokes. I relayed this to my crew immediately, telling them to hold them off for three strokes, then execute our own power 10. The eight guys accelerated through the end of each stroke. Harvard trailed behind us, and we jockeyed for the lead against Yale.

For the next 500 meters, it was a game of inches in a battle of wills. Then, with just 400 meters to go, we were three-quarters of a boat length down. We had never sprinted earlier than the 250-meter mark. But calling the sprint early was the only card I had left in my hand, the only possible move I could play for a chance to win. "In two, sit up and lift it to 38!" We took another two seats on Yale — moving ahead by the length of two seats in the boat — and lifted our rate again, to 40 strokes per minute.

The Yale coxswain looked back at me. She yelled something at her rowers. I continued pressing mine on, urging them to ignore the pain that had built up from lactic acid spreading throughout their muscles. It was my job to push them deeper into the pain cave, beyond what they thought their physical limits were. That was the only way we'd have a shot at reaching our shared goal: to win.

This is the thrill of the coxswain.

Just six months earlier, I had stepped into the coxswain seat of a Princeton heavyweight men's eight for the very first time. I remember my bright orange rain boots slapping against the concrete as I ran to keep up with my long-legged teammates, carrying the daffodil-yellow boat shell from the rack to the dock. With a forced kind of confidence and in a pitch much lower and louder than my natural voice, I called for the eight guys to take the boat over their heads and into the

In six minutes, we learn a critical lesson that many people do not learn in their entire lifetimes: We are more alike than we are different.

water. I couldn't remember the last time I'd felt this nervous. What if they didn't like me? Would they respect a female coxswain? Would they listen to a walk-on coxswain from the suburbs of Wisconsin? What if I was just too different to fit in on the team? Thoughts like these bounced around in my head as I tested my headset microphone and prepared to launch into unfamiliar waters, with an unfamiliar crew, accompanied by unfamiliar coaches. "Fake it 'til you make it, Jules," my mom had told me on the phone a few hours before practice, trying to ease my nerves. But there is no "faking it" in the coxswain seat.

The coxswain, as some wrongly believe, is not a small man who does nothing except say "stroke, stroke, stroke." In fact, in the words of Seth Lesser '83, a former men's heavyweight coxswain, "that is the one thing we never, ever do." Rower Jens Clausen '21 characterizes the coxswain as simply "the brain amidst the muscle of eight rowers." Such a role encompasses steering the boat, coaching technique, motivating the crew, managing time, handling equipment, strategizing and executing a race plan, and deviating from that plan if necessary.

Each of these duties comes with challenges of its own. Take the job of steering, for example. In theory, steering is easy. A coxswain just has to get from point A to point B in the straightest line possible. But an average eight-rower shell is more than 60 feet long, just a few feet shorter than an 18-wheel tractor-trailer. And instead of having the immediate response of a steering wheel, coxswains steer the boat's 3-inch rudder by pushing a wire-thin cable to either side. The result is a painfully slow response time to any steering adjustments, often in tough conditions such as strong winds and currents. Finally, a coxswain must steer with the gigantic blind spot of eight heavyweight rowers sitting directly in front of her.

Micaela Keller '20, also a former heavyweight coxswain, puts it like this: "There are a million things for a coxswain to think about in any given moment. You are the crew's motivator, its strategist, its technical coach, its decision-maker, and its communicator. In the most high-pressure situations, you have to think about the boats around you, the technique of the guys in front of you, the amount of time that has elapsed, the number of meters remaining, the speed of the crew, the conditions of the water. And then you have to think about how to communicate that information to them at the right time and in the right way."

A race can come down to fractions of a second, and every action has a crucial impact. The coxswain, though small in stature, has big shoes to fill.

On Lake Carnegie, our five heavyweight shells are filled with athletes from every corner of the world. There are future Olympians in these boats, and there are walk-ons who never touched a rowing oar before they arrived at Princeton. There are men, there are women. But they all come together with one purpose: to make ridiculously fast boats. Days, months, years of training pay off in a six-minute flash as our individual differences fade into the background and all that matters is how badly we want to win. In six minutes, we learn a critical lesson that many people do not learn in their entire lifetimes: We are more alike than we are different.

We lost the Eastern Sprints Grand Final to Yale by six-tenths of a second. Harvard placed third, trailing nearly 10 seconds behind us. The loss was heartbreaking.

But we learn through loss. During the COVID-19 pandemic, our team has lost a lot, as has everyone. For nearly one whole year, our team was unable to train together, race together, and be together. Finally, in February, those of us who were in Princeton were able to set foot in the boathouse once again. We are deliberate, intentional, and thoughtful with every stroke we take on Lake Carnegie not just because we want to win medals, but because we remember the time we spent apart.

Above: ***Alice in the Pandemic*** **performers Carami Hilaire, bottom left; Daniel Moody, top right; and Children's Chorus from Voices Boston.**

From top: *Alice in the Pandemic* rehearsal screenshot; Arthur Cohen

THEATER: ELENA ARAOZ

Best in Show

Stretching the limits of imagination and tech for online perfomances

In March 2020, lecturer in theater Elena Araoz was in the midst of holding auditions for a play she was set to direct at a Massachusetts theater when the pandemic hit. "There was a great sense of mourning," she says of the theater world, which came to a complete halt. "But I also thought, 'What better way to invigorate the way we make theater than to use this period as a place of experimentation? How do we capitalize on what this gives us and let go of the trappings we hold so dear?' "

The result is Innovations in Socially Distant Performance, a research project at the University's Lewis Center for the Arts that Araoz founded and leads with a team of six Princeton undergraduates. Since June 2020, the project has created five online works — all directed by Araoz and produced with professional artists and artistic organizations — that draw on a wide range of artistic fields, from puppetry to opera to video-game animation. The project has been selected for the Library of Congress' COVID-19 web archive.

Alice in the Pandemic, a deep dive into the elasticity of time, is an opera about a nurse navigating an unfamiliar landscape. A collaboration with the activist opera company White Snake Projects, it was the first online piece to use new technology that enables performers in different locations to sing together synchronously over the internet. The singers interact on the screen through fantastical 3D animated avatars, with a children's chorus and a string quartet. "We had video-game designers and animators working with opera makers — it was thrilling," Araoz says. "We are drawing new audiences and stirring up so many possibilities."

"What better way to invigorate the way we make theater than to use this period as a place of experimentation?"

— Elena Araoz, lecturer in theater

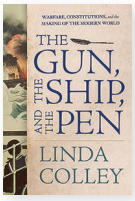
In August, Araoz directed a virtual production of *a farm for meme,* a play written by Virginia Grise about a 14-acre farm in South Central Los Angeles that was bulldozed and paved over in 2006. The project featured professional actress Marlene Beltran and three Princeton students, who used only objects they had at home to create plants that would appear to grow. The homemade-style design dovetails with the play's subject: A new farm has been planted by Mexican, Chicano, and other community members in recent years to help those without easy access to a grocery store.

The New York Times called the play "a 20-minute meditation on growth, death, and rebirth [that] mixes box puppets, shadow play, live film, and archival footage into a gorgeous mise-en-scène that feels theatrical in its purposefully homemade aesthetic. Arms are made of

continues on page 18

FACULTY BOOK: LINDA COLLEY

Considering the Constitution



Americans are proud of their Constitution, which is 233 years old and the longest surviving written constitution in the world. But as Linda Colley shows in her new book, *The Gun, the Ship, and the Pen: War, Constitutions, and the Making of the Modern World* (W.W. Norton), the U.S. Constitution emerged during a period when constitution writing flourished around the globe, aided by revolutions in warfare, globalization, and communications. Colley, the Shelby M.C. Davis 1958 Professor of History, spoke with PAW about why constitutions are made, why they fail, and how ours is doing.

When did constitutions become popular, and why?

There had been rules of law and of government since ancient times. But if you define a constitution as a single document that contains constraints on government and is widely disseminated among the public, those sorts of texts go up after 1750, from Corsica to Sweden. It didn't begin in 1787. This is not to say that the American Constitution is not remarkable, but it was operating against a sympathetic background.

Several factors around this time contributed to the rise of constitutions, but the main one was a dramatic increase in the scale of warfare. With wars becoming larger and more expensive, there was much more pressure on states to reorganize themselves so they could raise the taxes and the manpower needed to fight them. At the same time, the people, the subjects, said that if the state was going to make more demands on them, they wanted clearly defined rights in return. So this pressure from above and below provided an engine of these rather different constitutions that emerged.

Several factors "contributed to the rise of constitutions, but the main one was a dramatic increase in … warfare."

Are countries still writing constitutions?

They are still passing them, and they are amending them. Amendment is crucial and it is arguably one reason why the Norwegian Constitution of 1814, the second-oldest surviving constitution after the American one, has remained effective. Conversely, one could argue that the difficulty involved in amending the U.S. Constitution — as distinct from the state constitutions, which are amended much more often — is one of the structural challenges the United States now faces. The Founders made it difficult to amend the Constitution because they thought that frequent changes might endanger stability, but the American Constitution is now very old. Perhaps it needs to be amended more, though how on Earth do you engineer that in the political environment we have now?

Why do some constitutions endure but most do not?

It is partly contingency. If the United States had been bordered by powerful enemies after 1787, its Constitution probably would not have lasted very long. Hawaii in 1840, when it was an independent monarchy, and Tunisia in 1861 introduced written constitutions in the hope that the imperial powers would respect them as modern states and spare them from colonization. But in neither case did it work.

What is unique about the American Constitution?

I would focus on three things. First, the American Constitution emerged from an epic military struggle that received

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THEATER, *continued from page 17*

red construction paper; flower stems, of measuring tapes."

Araoz, who will become the producing artistic director of the theater and music theater season in September, says the Princeton students working on the projects have contributed "an openness and a playfulness, reminding me that theater doesn't have to be done in any particular way."

Another project, *The Manic Monologues,* aims to dispel the stigmas around mental illness. Viewers take a self-guided tour through 21 videos in which actors perform true stories written by people who have been affected by mental illness. The stories — which run under 10 minutes each — address issues such as self-medication and suicide ideation. The project is a collaboration with the McCarter Theatre Center, The 24 Hour Plays, and Princeton University Health Services.

Virtual projects are broadening theater's reach, says Araoz. "Theaters have often felt like exclusive places, both for artists and audiences. There were people who weren't willing to go into theater spaces, because they haven't felt invited in or travel isn't possible for them. And theater makers have been trying to figure out, 'How do we bring in young people, people from different heritages?' In this playful virtual place, we are really invested in opening our doors wider." *By Jennifer Altmann*

Peter Hurley

worldwide attention, which gave the constitution that followed that war a particular international resonance.

Second, it is a very short constitution. That may sound facetious, but it's not. For a constitution to become well known in all corners of society, it has to be printed and published. That is much easier when you have a short constitution. Constitutions have gotten longer and longer. Look at the Indian constitution; it's a wonderful document, but it's huge.

The third distinguishing characteristic of the American Constitution is that the press was so well established in America at the time it was adopted. As soon as the draft was issued in Philadelphia in September 1787 it was picked up all over the new United States, then sent across the Atlantic to Great Britain, which had an even bigger print industry and the world's biggest maritime fleet, and so it was publicized around the world. Even apart from its specific provisions, the American Constitution had several particular advantages working for it.

How healthy is the American Constitution today?

There's an old cartoon in Victorian Britain where a bishop asks a junior minister for whom he has made breakfast, "How is your boiled egg?" And the junior clergyman, not wanting to offend, says, "It's very good — in parts." I think you could say the same about the American Constitution. Clearly it's a formidable document, it trains a certain kind of legal vigilance as a way of monitoring government, and it acts as a source of national unity even though we know Americans have never read it and don't know what's in it.

But it is a constitution drafted in the 1780s. The Bill of Rights is also very old, not least in regard to gun laws and how those have been interpreted. This gets back to the old question: Are written constitutions too rigid? Remember, Thomas Jefferson thought that for a healthy polity, constitutions should be renewed every 17 or 18 years. But of course politicians don't have the time or the will. We'd all go mad.

So, it's good in parts — like the egg.

Interview conducted and condensed by M.F.B.

Top: courtesy Princeton University Press; Lo Archive photograph collection, 1943–44, Princeton University, from top: Mogao Cave 158, Middle Tang (781–848) Reclining Buddha, Parinirvāna scene, west wall, (Lo 158-10); Mogao Cave 285, Western Wei (535–556), *Five Hundred Bandits Become Buddhas* (landscape), south wall, (Lo 285-12-3a)

GALLERY: ART AND ARCHAEOLOGY

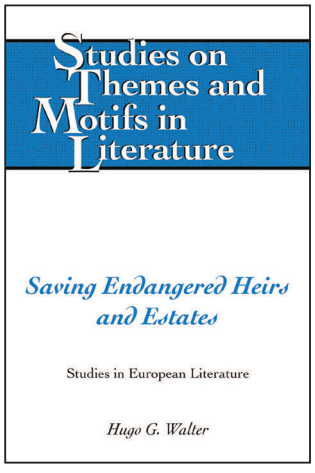
CHAPTER IN HISTORY

Visualizing Dunhuang: The Lo Archive Photographs of the Mogao and Yulin Caves (Princeton University Press), edited by Dora C.Y. Ching *11, associate director of the Tang Center for East Asian Art, is a nine-volume collection of photographs of China's Dunhuang Caves taken by James C.M. Lo and Lucy Lo.

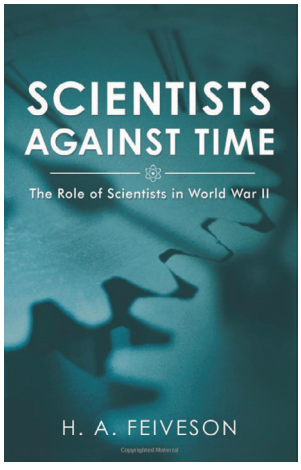
Just outside of Dunhuang, a city on a network of silk routes from China to central Asia, are the Mogao and Yulin caves, containing Buddhist murals and sculptures from the fourth to the 14th century. The Los spent 18 months in the 1940s photographing the sites. Then, the late Princeton professor of East Asian art Wen Fong '51 *58 saw their work at the 1964–1965 New York World's Fair and commissioned a full set of prints for the Department of Art and Archeology. "The Los had a lifelong wish to publish the archive, and finally, under the auspices of the Tang Center for East Asian Art, we were able to embark upon this project," says Ching. She adds: "The Los did not simply document the caves; they created lyrical photographs with unusual camera angles and photographic techniques to convey human involvement and movement." *By C.C.*

Princeton BOOKSHELF

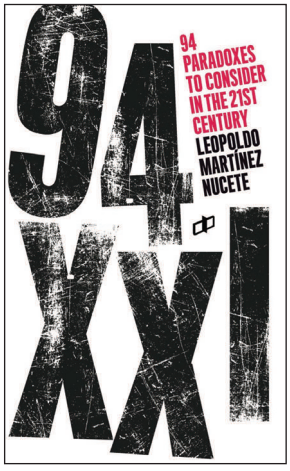
2021 Summer Guide to Princeton Authors



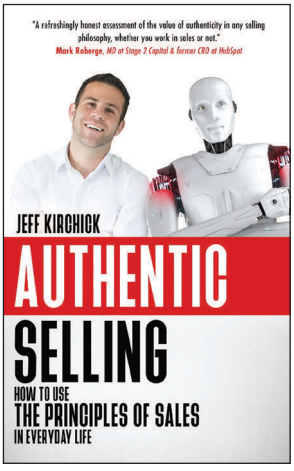
Saving Endangered Heirs and Estates
Hugo G. Walter '81
This book is a collection of great and insightful essays which discuss heroic endeavors to save endangered heirs and estates by searching devotedly for the truth in criminal and civil cases.
Peter Lang Publishing



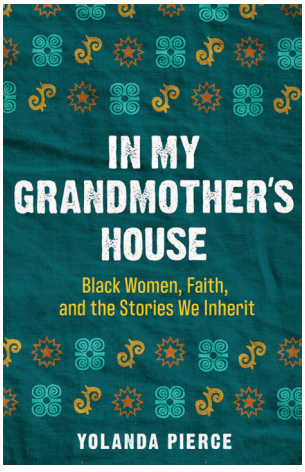
Scientists Against Time The Role of Scientists in WWII
H. A. Feiveson *72
A concise history of the role that science and technology played during World War II, especially by the Allied powers. — *Kirkus Review*
Feiveson is a senior research scientist emeritus for the Program on Science and Global Security at Princeton University.



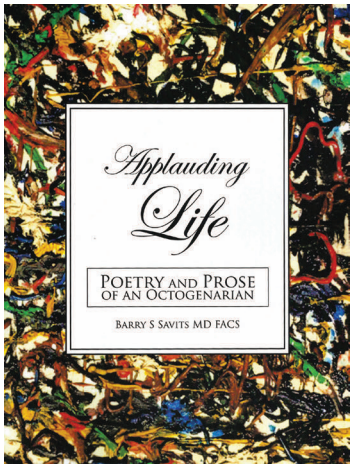
94 Paradoxes to Consider in the 21st Century
Leopoldo Martínez Nucete *96
These are paradoxical times. Prevailing trends brought progress, but reactionary and polarizing undercurrents surfaced.
This book is a collection of essays from social media disinformation, to the existential threat of climate change. On Amazon.



Authentic Selling
Jeff Kirchick '10
In today's broken dialogue, it is more important than ever to understand basic sales acumen and how to embrace authenticity in order to sell your ideas. Jeff Kirchick's "Authentic Selling: How to Use the Principles of Sales in Everyday Life" is available on Amazon now!



In My Grandmother's House: Black Women, Faith, and the Stories We Inherit
Yolanda Pierce '94
Pierce builds an everyday womanist theology rooted in the Black church and truths from Black women's lives. Her essays center those living on the underside of history, teasing out the tensions of race, spirituality, trauma, resistance, and memory.



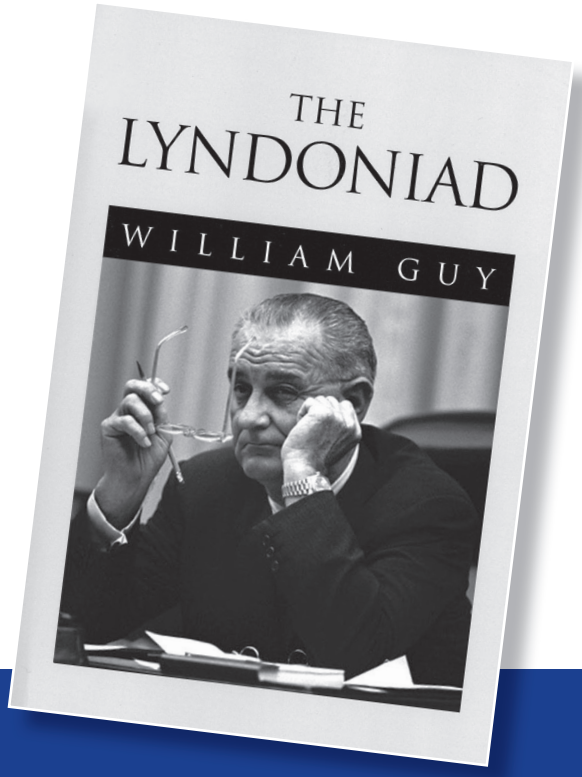
Applauding Life: Poetry and Prose of an Octogenarian
Dr. Barry Savits '55
This collection speaks in the genre of poetry and poetic prose. Social consciousness abounds within the serious and the whimsical memoirs and ideas. An amusing, entertaining, understandable, yet provoking, legacy of a retired surgeon – 87 years old.

The Lyndoniad

William Guy MA *71 Ph.D. *76

The Lyndoniad is a poem or a succession of poems or a congeries of poems containing history. It treats of Lyndon Johnson in pieces, throws up facet-flashes of his life and of his epoch. The historians have had and will continue having their voluminous say about the throes and the tumult of the 1960s but here is a counter-approach to the same material: the 1960s as a kaleidoscopic epic poem with Lyndon Johnson at the center of it speaking for himself, and others speaking for him and about him and against him. Shards and tatters. The abstract and not so brief chronicles of a time when the nation was breaking.

WILLIAM GUY is a Pittsburgh native and a Pittsburgh resident. He is the author of *Gravity's Revolt*, a novel; *Defunctive Music*, a book of poems including a translation of *Beowulf*; four books of travel essays; a translation of *The Iliad*. He is, with William Orr, co-author of *Living Hope: A Study of the New Testament Theme of Birth from Above*. He is at present translating *The Odyssey* and contemplating more poems on Lyndon Johnson.



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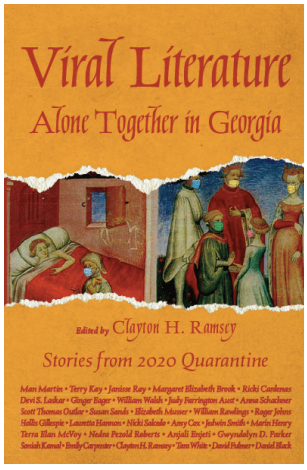

Viral Literature: Alone Together in Georgia
Clayton H. Ramsey '89
Inspired by Giovanni Boccaccio's fourteenth-century *The Decameron*, this anthology is a diverse collection of the work of 32 of the best storytellers and poets in Georgia, reflecting on a theme prompted by the current pandemic.

The Boos NightMerry
Nate R. Tots '10 and SP:Zero
A fun breath of fresh air for children's picture books that links technology, cities, and music. Follow Merry, an outcast Boo, and the Woos, as they try to save Big Bit City from an old enemy, No-Man. Created for charity and will blow you and your little human's circuits!
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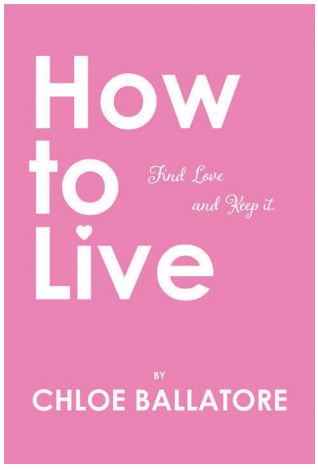

How to Live: Find Love and Keep It
Chloe Kovner Ballatore '91
Learn the science behind the magic of love. Actionable tools derived from the work of Freud and Jung for dating, relationships and communication that balance your yin and yang energies. Get what you want out of life!
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Nature took its toll, but alumni wineries adapted

ALL IN THE FAMILY

By Constance Hale '79

ON A SUNNY DAY in July 2019, in the Mayacamas Mountains east of Santa Rosa, California, Whitney Fisher '99 headed up through a wooded hillside after a morning's work in the fields. She was dressed in her standard uniform: jeans, work boots, pink-and-white plaid shirt, straw hat dangling from a cord around her neck. She followed a path up to a brown, board-and-batten building and went around back, where a teak table was set under mulberry trees for the Fisher Vineyards weekly lunch for senior staff.

It was the kind of idyllic setting the words "wine country" evoke. The farm-to-table lunch featured chicken and vegetables grilled outdoors and an ample salad. The lunch crew — Whitney's mother, brother, and sister, as well as the heads of hospitality and marketing, the cellar master, and a few guests — reminisced about how the Fishers had transformed a century-old sheep ranch into a producer of high-quality wines. Then they debated the theories of the state's top enology school, the follies of "lifestyle vintners," and Supreme Court decisions about interstate commerce, among other subjects. Finally, mini chocolate cakes with crème fraiche and strawberries, made by Whitney's mother, Juelle, were served in honor of the cellar master, one of five brothers in the Vega family, as integral to the winery as the founding family itself.

The Fishers are among a small number of Princetonians who have taken their liberal-arts degrees and their MBAs and applied them to a fetching industry. Their wineries are scattered as far east as New York and as far south as Chile, but most are located in Northern California.

Barely three months after that lunch, the wine industry was shaken when wildfires struck; the Kincade fire came dangerously close to the Fishers' property. The following January, the first case of coronavirus in the state was reported; soon, schools across the state were shuttered, restaurants and bars were emptied, and their wine sales were gone, too. COVID-19 raged through communities of farmworkers.

Then, in late summer 2020, wildfires again swept across Northern California. The August Complex "gigafire" burned more than 1 million acres, an area larger than the state of Rhode Island. By September, thick smoke trapped by a layer of fog in the Bay Area caused a day described by many as resembling a nuclear winter. Last September, the Glass Fire caused mass evacuations and burned the hillsides surrounding Fisher Vineyards, sparing the family home and the winery — just barely.

Never had the wine industry seemed more fickle. Yet established family wineries headed by Princetonians survived. They did so through luck, grit, family spirit, and innovative marketing. Not only did they manage to keep putting out cases and cases of fine wines, they make for a fascinating story of small businesses that keep an eye on the past while reinventing themselves for the future.

Tim Carl

Whitney Fisher ’99 checks the wine at Fisher Vineyards, which was started by her father, Fred Fisher ’54.

FOR THE MOST PART, wineries run by Princetonians fall into the loose category of "family winery." Josh Greene, '81, editor and publisher of *Wine & Spirits,* defines a family winery as a privately held company in which a clan brings its values and intergenerational dynamics to bear.

"At one end of the spectrum are the mega-corporate family wineries, like Gallo in California and Boisset in France," says Greene. Midsize family wineries include Wente Vineyards, where Christine Wente '97 is a fifth-generation winegrower, and Marimar Estate, where Cristina Torres '10 works at a Sonoma satellite of the family's 150-year-old Spanish brand, Torres.

Smaller in scale are what Greene calls "artisanal" wineries, which would include most of the wineries owned by Princetonians, like Fisher in California, Lakeshore Winery in New York, and Kingston Family Vineyards in Chile. They also include labels that own neither vineyards nor a winery but rather enter into long-term agreements with growers, control a specific tract of land, hire a winemaker, and market their premium wines, such as Moone-Tsai winery, headed up by Larry Tsai '79. Then there are, Greene says, "bootstrap efforts" — tiny wineries that will themselves into existence with a grand vision, little money, and a lot of expertise.

Fred Fisher '54 might have been called a bootstrapper in 1973, when he planted his first vines. One of six "damn independent" kids in a family descended from a founder of Fisher Body Co. in Detroit, Fred majored in basic engineering at Princeton, got an MBA at Harvard, and joined the Army. On a short leave, he discovered wine at Lago di Garda in Italy, he says, spreading his lanky frame over a teak chair under the mulberry trees. "I said, 'This is the life.'"

After two years in Detroit at General Motors, he left his industrialist, auto-industry background behind, took off for San Francisco, and worked as a management consultant. "My sister Jane and her husband, Tom, lived just down the hill," Fisher notes, employing a salty blend of words and sentences and a voice that recalls Jimmy Stewart in timbre. "I saw this land, and thought, 'That's where I want to be.'" He bought some land from his sister in 1973.

"I grew up with the philosophy that you learn things by doing," Fred says. "I thought, by God, this will be interesting. You can learn."

There was a lot to master. "I was learning how to drive a tractor down there," he says, pointing to a spot below. "I hit a patch of mud. In Detroit, you hit a patch of mud and you accelerate. I drove that tractor so deep in the mud it took two weeks to get it out."

Wine-drinking may seem glamorous, but winemaking is far from it. The making of the fermented-fruit-in-liquid-form starts in the field, with careful curation of the grapes and a harvest of the prime fruit. After the removal of stems and leaves, grapes are crushed into pulp, or "must." Then comes fermentation in tanks, when yeast converts the grape juice into alcohol. The cellar master oversees activity within the cellar, and the winemaker keeps close tabs, constantly tasting the developing wine. After aging in casks, for a few months or a few years, the libation is bottled, sold, and consumed — or, in the case of reds, aged even longer.

"It was just the two of us," remembers Fred's wife, Juelle, who had worked in the investment business, of the first vintage, in 1979. "Fred did the planting and harvesting. I shoveled the stuff out of the tank. We wanted to touch the whole grape."

Grapes had to be paired with the right landscape. This European notion of "terroir" is one that California vintners have imported; it refers to how a region's climate, soils, and terrain affect taste. So the Fishers had to master more than just tractors and mud. An inhospitable patch of land called the Wedding Vineyard, because that's where Fred and Juelle had married, features three feet of clay-heavy topsoil over rock. "It gave us such fits," Juelle says. "We couldn't get the berries through the antiquated must pump, and the tannins were harsh." According to Fred, the key was to pick as late as possible and to shift from inoculated to natural yeasts, which produce a slower, gentle fermentation. The result? A cabernet sauvignon lauded by a reviewer as a "broody, virile" wine.

Each of the three Fisher children has an affinity for a different aspect of running a vineyard. Whitney, the eldest, is head of winemaking and farming. Her brother, Rob, is the general manager, and her sister, Cameron, handles marketing.

Whitney Fisher grew up thinking she'd be a scientist and planned to major in molecular biology. A summer job in a lab changed that; she switched to American history. She took a job at a wine-industry mergers-and-acquisitions firm in the late 1990s, when Australia, South Africa, and New Zealand were all coming on the scene. "But it was a desk job," she says, "and I'm a country girl."

After the Glass Fire, Whitney Fisher noted the contrast between the devastation of the forested hillside at left, and the beauty of the vineyard at right, which was spared.

With her parents at a pivotal time in the business, she came back to the family vineyard. "I did everything — designed the website, helped the winemaker, replanted vines with the vineyard crew," she says. "I spent the harvest of 1999 in the cellar with hoses and barrels, and I never left."

It has not always been easy. She works alongside the crews — "whether replanting in the fields or repacking in the winery. My father is right — you end up knowing so much more if you're there, working." She learned Spanish and pushed herself, as "the boss's daughter," to outwork everyone else.

At a family winery like Fisher, the word "family" extends to those beyond the clan; Whitney says

Whitney Fisher works alongside the crews: "My father is right — you end up knowing so much more if you're there, working."

Whitney and Fred Fisher in front of a favorite tree.

Photos: Tim Carl

the camaraderie has helped the business survive the challenges of 2020, even strengthening the bonds. When the fires came, workers and family members helped keep them at bay, bolstering a "sense of shared destiny." When COVID-19 made it necessary to cut costs, everyone gave up something but no one lost their livelihood; when vaccinations became available, the entire workforce of 22 people opted for the shots. Meanwhile, the team found new opportunities, Whitney says, like a successful "Zoom on women and wine." Though farm workers were hit badly by COVID-19, "We have emerged out of the pandemic with every single employee still with us," Whitney says in a phone interview in spring 2021. "That was our goal."

FOR COURTNEY KINGSTON '92, being part of the family team means being at her kitchen table in a two-story tract home near Palo Alto, California, pandemic or not; her co-workers are in Princeton, New York City, and the Casablanca Valley in Chile. She travels to Chile four times a year (when there's no pandemic raging) and uses WhatsApp to meet with far-flung relations.

Courtney is head of sales and marketing for Kingston Family Vineyards. She describes herself as a "misfit": an MBA who works on a family farm; an international businesswoman who is also a suburban mom.

After graduating from Princeton with a degree in Latin American studies, Courtney moved to San Francisco and ended up at Deloitte & Touche as a consultant for California wineries. Then she moved to high-powered tech jobs. At 30, knowing the corporate grind wasn't for her, she entered Stanford Business School.

Soon Courtney was helping her family find new purpose for the 7,500-acre ranch in Chile where her father, Michael '62, had grown up. Founded by her great-grandfather, a miner who had left Michigan for Chile in the early 1900s, the ranch was supplying 5 percent of all the fresh milk to the capital city of Santiago, but it was subject to the vagaries of commodity pricing. The Casablanca Valley was developing a reputation for crisp white wines. Courtney started talking with her brother Tim '87 and wrote a business plan for a vineyard "in the hills where the cows didn't want to go."

"We knew nothing about vines, but we had land and Chilean know-how — and a soil engineer who pronounced the land *'un wow lugar,'*" Courtney says.

After much research and some inquiries with California wine powerhouses interested in expanding into Chile, the family used savings to plant the first vineyard. Tim signed on as president, Courtney led sales and marketing, and their father, who had worked for Citibank and lives in Princeton, stepped in as CFO. Tim's wife, Jennifer Pickens Kingston '87, is COO. Michael's sister Sally and her husband, Enrique Alliende, oversee day-to-day operations in Chile.

Some of the world's oldest vines grow in Chile, because the country escaped the phylloxera epidemic of the 1800s. Cabernet sauvignon and carménère have been its signature red grapes, but the Kingstons gambled on pinot noir and

syrah, sensing that the hilly Casablanca Valley would welcome cool-climate reds. They invested in vines, a winery, and a tasting room. They did not invest in salaries ("My husband is in tech, thank God,'" says Courtney), office space ("The North American HQ is in my house"), or unnecessarily expensive equipment ("We MacGyver everything").

They partnered with a winemaker from a Napa winery esteemed for its pinot noir; he took a look at the Casablanca Valley and said it reminded him of Santa Barbara County with higher mountains. As it turned out, the soil was almost pure decomposed granite and, together with the intense afternoon sun, gave the red grapes great color.

In 2003, the Kingston Family label produced 450 cases. The winery now makes about 3,500 cases a year, crushing 10 percent of the grapes they grow and selling the rest. Meanwhile, Chile has become the seventh-largest producer of wines in the world.

Courtney has become an adherent of the "evergreen business" way, in which a company remains privately owned, focuses on long-term outcomes, and avoids raising capital that puts money before mission. She calls it "organic growth": Move forward steadily with your employees and partners; value generations of the community as much as generations of the family. She created the winery's education program; the Stanford Business School has written cases on the winery's story. Students "read the Stanford cases and then come visit us as a class," Courtney explains.

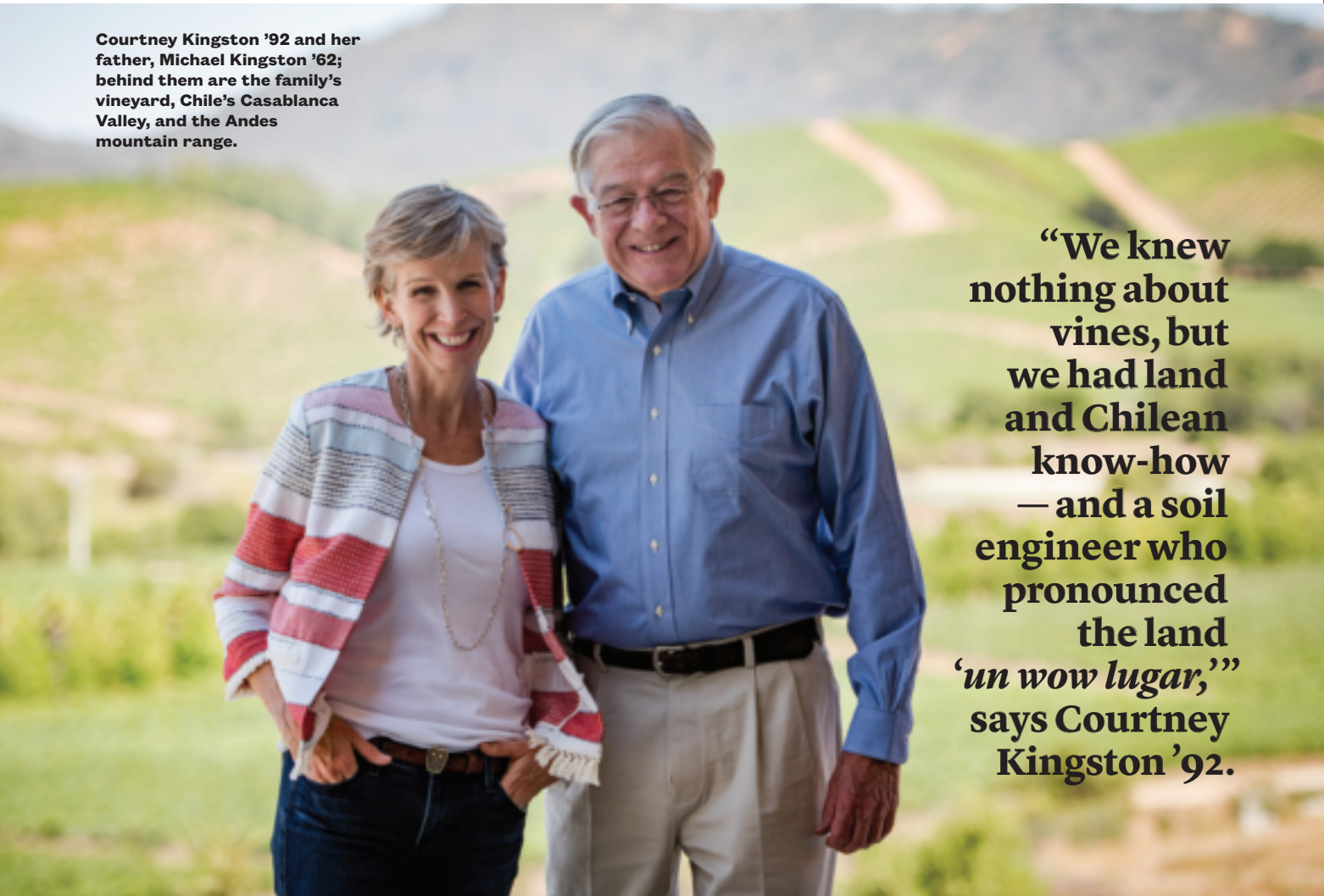
The education program saved the winery in 2020. Before the pandemic, about 20 percent of the winery's 5,000 guests each year were students visiting through the education program. The rest were mostly adventurer travelers visiting the glaciers or the desert and hitting the winery as an aside. "They'd visit our winery and become lifelong customers," says Courtney. But the winery shut down the same week that California did. Chile declared a state of catastrophe and its borders were closed.

The hospitality-driven marketing was gone. Then something happened. "Professors and MBAs familiar with our story asked if we could host their class discussion of the Kingston/Stanford case via Zoom," she says in a phone conversation this spring. "We ship wines directly to the MBAs' homes, and we all raise a glass together." Recent additions include wine tastings for tech companies and what she calls "Uncle Ernie's 80th-birthday celebration."

"With each virtual class, with each bottle we taste," she says, "we send money back to Chile to pay for our team." The education program, she says, "brings my whole self, and our whole family, full circle."

FOR LARRY '79 AND MARYANN TSAI, founding a family winery was not about carrying on or creating a legacy. They'd each had successful corporate careers and were ready for a joint "second act."

Tsai, a first-generation Chinese American, grew up on Long Island and majored in economics at Princeton. He harbored dreams of adventure but ended up entering Stanford Business School.



Courtney Kingston '92 and her father, Michael Kingston '62; behind them are the family's vineyard, Chile's Casablanca Valley, and the Andes mountain range.

"We knew nothing about vines, but we had land and Chilean know-how — and a soil engineer who pronounced the land *'un wow lugar,'"* says Courtney Kingston '92.

Founding a winery was not about carrying on or creating a legacy. They each had successful corporate careers and were ready for a joint "second act."

MaryAnn and Larry Tsai '79 in Napa Valley, home to Moone-Tsai Vineyards.

In 1984, while working in brand management at Carnation (now Nestlé), he met MaryAnn Nicastro, who worked in sales. She had grown up in a Boston Italian family and spent summers helping her grandmother tend a garden with vegetables, herbs, and her grandfather's precious vineyard.

Several years, a few moves, and another MBA (hers) later, they were back in California, where MaryAnn worked at Beringer in Napa and Larry climbed the ladder in marketing and sales at food-industry companies large and small. When MaryAnn's mentor, Mike Moone, left Beringer to start a new label, he hired MaryAnn as CEO, making her one of the first women in such a role in Napa Valley.

In 2003, with a nest egg they'd saved and her mentor as a partner, the couple started Moone-Tsai Vineyards. Taking advantage of their marketing muscle and their relationships in Napa Valley, they bought great grapes from great growers (sometimes ordering from exact rows on particular hillsides) and enlisted a Bordeaux-bred winemaker. Their wine is actually made at Brasswood, a Napa winery that makes its equipment available to custom-crush clients. The first vintage yielded 181 cases of wine that they "mostly drank and gave away," says Larry. After a second vintage of 200 cases, the business was off and running. By 2008, they were producing 3,000 cases, and by 2012, they were both working full time for their company.

They run the business from a Spanish-style manse on Howell Mountain with a stunning view of Napa Valley. The Glass Fire came within one mile of the house, but at a table in a living room filled with Chinese art and antiques, Larry still pours the Paige Cuvee, a chardonnay named for his older daughter. He calls it a "prom princess" of a wine — golden in color and with notes of white flower, honey, and lemon candy. It is in an elegant Burgundian style, the oak and butter kept in check. He adds, "It's the only Napa wine you'll find in the cellar at 10 Downing Street."

For Tsai, as for Princeton's other alumni winery owners, the pandemic required new marketing strategies. The team at Moone-Tsai got aggressive with digital marketing, using the internet, email lists, social media, and partnerships to reach out directly to "the ultra-premium-quality wine folks" and offering bundling, special shipping, and other incentives. Moone-Tsai's digital business went up "times five," Tsai says, as more people bought more wine than before, drank it, and ordered again.

By the spring, Tsai seemed optimistic. He sensed pent-up demand for wine-country visits, which offer not just the chance to try and buy wine, but to drive through a beautiful landscape, meet people who care about wine, and share stories. "We deliver a multisensory experience," he says.

Tsai turns philosophical when the talk turns to the particular resilience of a place like Napa Valley. "It's not just dirt," he muses about the idea of terroir. "When we talk about different soils, we're comparing rocky volcanic soils with clay sediments and alluvial deposits in the valley's former riverbeds. And we're talking about old, gnarled vines growing in those difficult soils. Wines are best when they struggle."

Constance Hale '79 is a California journalist and author.

At left: Kingston Family Vineyards; above right: Suzanne Becker Bronk

THE TOOLMAKER'S MIND

Clifford Brangwynne marries engineering and biology in a quest to understand the inner workings of the cell

BY CARMEN DRAHL *07

The best way to learn how intensely Princeton bioengineer Clifford P. Brangwynne approaches life is to catch him playing hockey at Baker Rink. Before the COVID-19 pandemic, he had a standing noontime game. He's played since childhood, mostly defense. At Baker, he might be fending off collaborator and friend Mikko Haataja, a professor of mechanical and aerospace engineering at Princeton and a formidable forward. "When you play intense sports, that's the only thing that's consciously on your mind," Brangwynne says. With skates on, he gets in the zone. And when Cliff Brangwynne gets in the zone, there's no stopping him.

Brangwynne, the June K. Wu '92 Professor of Chemical and Biological Engineering, an investigator at the Howard Hughes Medical Institute, and a MacArthur "genius grant" recipient, usually is in the zone scientifically, too. In 2009, when he was a postdoctoral researcher, he published a major finding, something fundamental about how cells are organized. In textbook diagrams, cells look tidy. Little subcompartments called organelles, each surrounded by a membrane, do jobs like storing genetic information or producing energy. But Brangwynne found an organelle that was not bound by a membrane. Instead, it acted like a lava lamp or oil-and-vinegar salad dressing. When he looked under a microscope, he saw liquid blobs fusing and breaking apart within a cell.

Within a few years, scientists started spotting lava-lamp behavior all over all kinds of cells, including human cells. Today, they know that the blobs, called droplets or biomolecular condensates, form when certain proteins in the cell crowd together in a temporary way. It's akin to the way people in the internet phenomenon known as a flash mob rapidly assemble in a public place; perform some act, like a dance number; and just as suddenly, disperse. Work from several labs has implicated malfunctioning cellular droplets in diseases such as Alzheimer's and ALS (Lou Gehrig's disease).

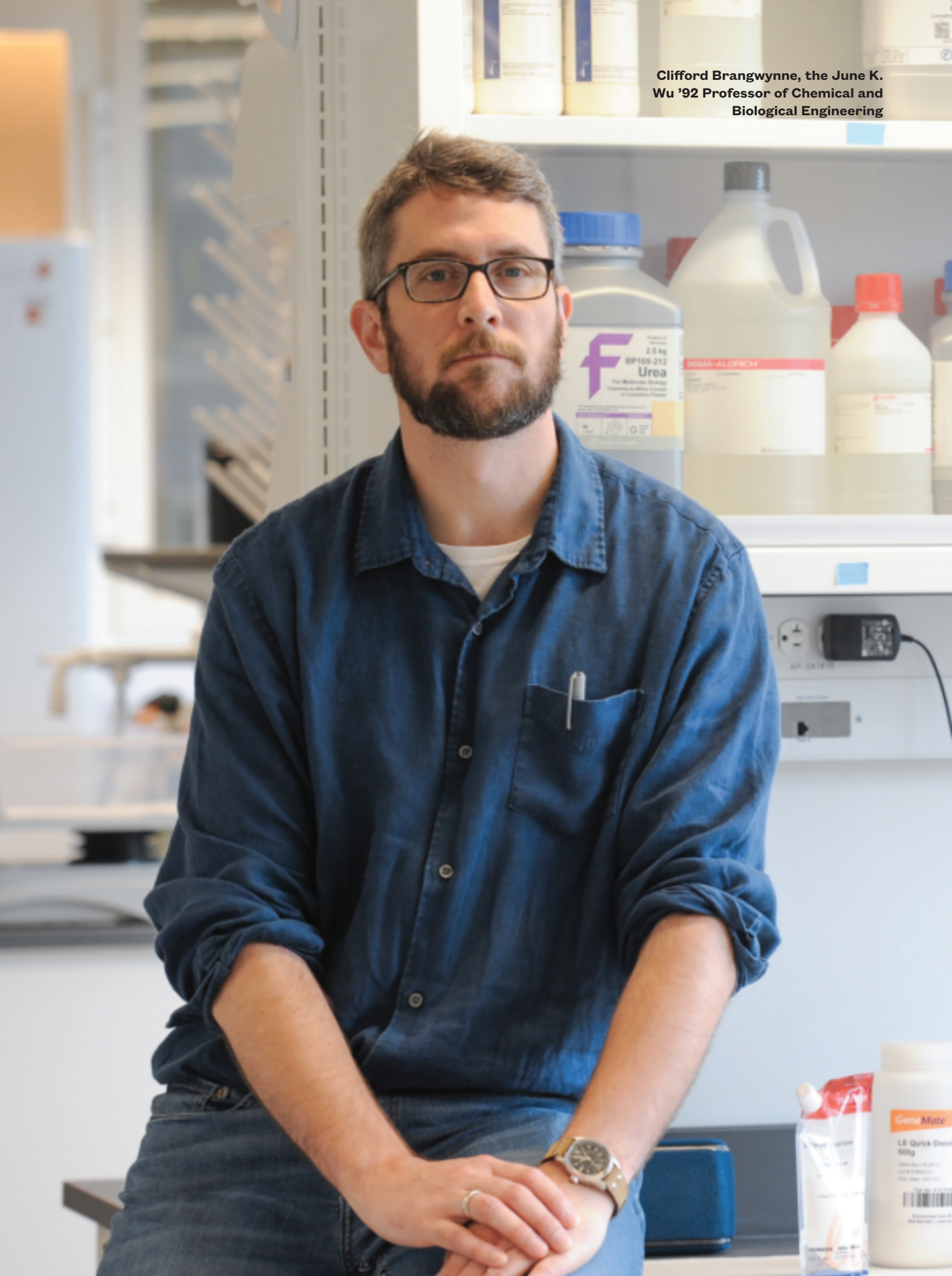
Yet Brangwynne saw challenges looming. It's one thing to be able to see droplets in cells. It's another to know the rules that govern their formation, or to know all the purposes they serve. To answer those questions, he'd need to go beyond passive observation. He would have to learn how to control droplets, because controlling something demonstrates that you understand it. "Cliff's got a great nose for exciting problems," Haataja says. And it was in response to this problem, Haataja says, that "the bioengineer side of Cliff took over."

Bioengineering is a big word that covers a big swath of science. Bioengineers, Brangwynne says, use ideas from quantitative fields to study biology. They mobilize the components of biology, like proteins, and wield them the way a construction worker would a drill. They build a toolkit to answer fundamental questions about biology or to solve a vexing problem for society. It's an approach that has already taken Princetonians far.

Driven by a desire to reduce pollution, Frances Arnold '79 recognized the environmental cost of producing modern conveniences like medications and fuels. She set out to coax proteins to make them without all the waste. When she launched her lab at the California Institute of Technology in the 1980s, scientists contended that brainpower and computer power would reveal precise instructions for making proteins do their bidding. But proteins contain hundreds or thousands of amino acids. With 20 amino acids to choose from, that works out to a daunting number of possible combinations. Arnold didn't like those odds, so she tried harnessing biology's way of tweaking proteins — evolution — to create a protein-customizing tool any scientist could use. Today, manufacturers of drugs and laundry detergent alike use her technique, known as directed evolution. She took home a share of the 2018 Nobel Prize in Chemistry.

In 1961, when Osamu Shimomura was a researcher in Princeton's Department of Biology, he isolated a greenish, glowing protein from a jellyfish. But he didn't stop there. He looked under the proverbial hood to see what made the protein glow. Other glowing proteins known at the time required chemical additives to light up, but Shimomura's protein needed only a blue light source. Scientists seized the opportunity to use the green protein as a tool. Among countless applications, they used it to track how cancer cells spread and to detect arsenic in water wells. Shimomura earned part of the 2008 Nobel Prize in Chemistry. Later, in 2014, part of the chemistry Nobel went to a researcher who used the protein to bump up the resolution of light microscopes, which allowed scientists to see a cell's minute subcompartments — including droplets — in sharper focus.

The more Brangwynne immersed himself in Princeton's community of engineers, the more he realized that he, too,



Clifford Brangwynne, the June K. Wu '92 Professor of Chemical and Biological Engineering

needed a new tool to be able to control or manipulate droplets in cells. "He's always of the mindset that if there's a controversy or if there's something that's unknown, it's because we haven't made the right measurement, and if we haven't made the right measurement, it's because we probably don't have the right technology," says Rohit Pappu, a longtime Brangwynne collaborator and a theoretical biophysicist at Washington University in St. Louis. In September 2015, Brangwynne landed a grant from the National Institutes of Health. In the section of the grant application that asks about the public-health reason for the funding, Brangwynne wrote, "we will develop a cutting-edge technology" to control and study droplets in ways that would be relevant to various cancers and other diseases.

At first, Brangwynne admits, "I don't think we really understood what we were doing." To control droplets on cue, he and his collaborators figured they'd have to start with the "flash mob" proteins that crowd together to form droplets, and then soup them up with other protein parts to create a remote control of sorts that would let a scientist cue the crowding. Finding the right parts was not trivial.

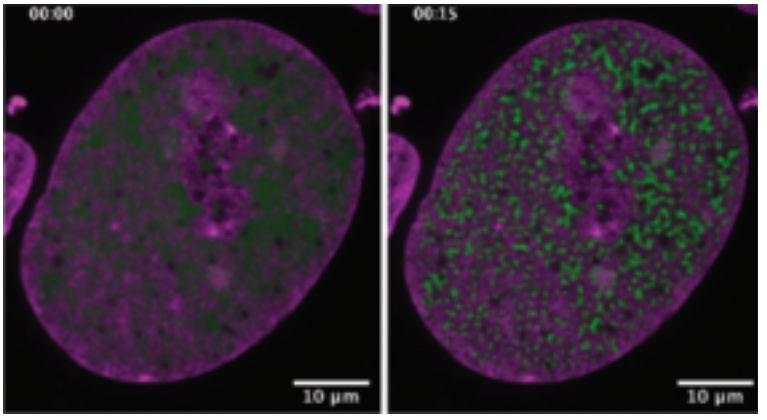
Fortunately, other scientists had built a thriving field around proteins that shape-shift or assemble in response to a flash of light. Laser light is a fantastic remote-control mechanism because it can be turned on or off instantly, and it is so focused that it can be shone on specific regions of a cell. So the researchers attached a light-responsive protein to a flash-mob protein, and then added a glowing protein so they could see their invention under a microscope. Then they put the whole shebang inside cells they had grown in petri dishes. "By coming up with this hybrid and shining a light, you nudge the system" and droplets form, says Haataja, a collaborator on the project. Wherever the team zapped their cells with a blue laser, presto, droplets formed.

As mind-boggling as it was to finally be able to manipulate droplets in a cell, something was still nagging at the bioengineer in Brangwynne. It was a numbers problem. In nature, Brangwynne says, the flash-mob proteins that drive droplet formation assemble in clusters that have the same number of partners every time. He was curious whether droplets would form with fewer or more partners, and what exactly was the threshold concentration for droplet formation. He couldn't answer those questions and others like them, because the light-responsive protein the team chose didn't cluster together in consistent numbers.

To Brangwynne, the droplet field has been all about demonstrating that the principles of physics that govern liquid flow in a lava lamp or salad dressing also apply to the microscopic milieu of the cell. Experts in areas as diverse as polymer physics and cell biology are studying droplets, and that can require bridging different scientific cultures to arrive at the truth, he says. Physicists and mathematicians state their hypotheses with numbers and equations, while biologists may use drawings or diagrams. Brangwynne is a physicist by training, and he thinks that as biology seeks to answer ever more complex questions in the 21st century, the field is going to need to integrate principles of mathematics or physics that perhaps weren't as essential in the 20th.

Brangwynne "brings an engineering pragmatism to his thinking," says Amy Gladfelter '96, a Brangwynne collaborator and quantitative cell biologist at the University of North Carolina, Chapel Hill. "So much of engineering is about product and application, but he has this ability to use the principles of engineering for basic science discovery that is pretty unique as an individual or as a thinker."

Brangwynne and his collaborators hunted for a protein that would consistently cluster with the same number of partners. They decided on ferritin, a protein found in blood, which assembles into a 24-unit cluster. The team again added a glowing protein to track things under a microscope — the glowing green protein Shimomura discovered at Princeton, in fact. They also added a light-responsive component, and finally, the flash-mob protein. It was a construction project on a molecular scale. Sure enough, with a flash of blue light, the new system formed droplets in cells on command. The team calls the technology "core scaffolds to promote droplets," or Corelets for short.



The Brangwynne lab's technique spurs lava-lamp-like droplets to form within seconds inside the nucleus of a human bone-cancer cell.

With Corelets, it's possible to begin tackling the quantitative questions that nagged at Brangwynne. The team has already created a quantitative "fingerprint" of the physical conditions that lead to droplet formation in cells. This fundamental information could someday help researchers understand how to intervene when droplets malfunction in diseases.

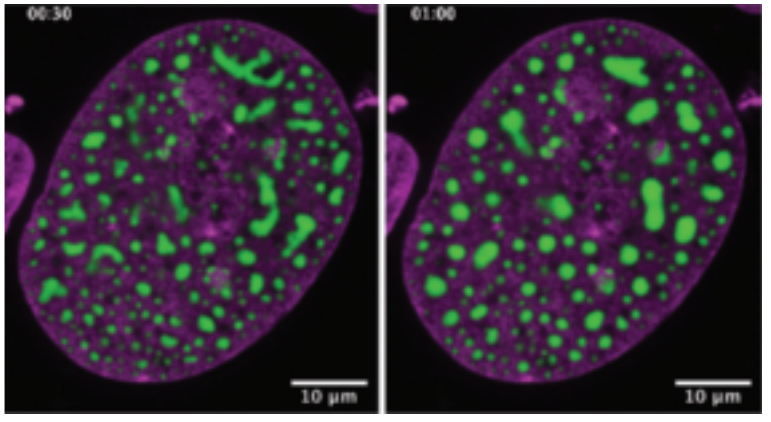
The tiny, lava-lamp-like droplets that form and break apart with Corelets technology are "mesmerizing to watch," Gladfelter says. "They flow, and they drip, and they fuse. They do these things that are like what we see in our everyday lives. You pour maple syrup, or you're making salad dressing and see droplets of oil. We're used to these sorts of interactions with materials. And then to see it at a microscopic scale, it makes you feel like you're in this invisible world," she says. With Brangwynne's technology, a scientist is making it all happen, controlling what's going on in a cell almost as easily as if she were pointing and clicking a mouse. "There's something very beautiful and satisfying about that," Gladfelter says.

For José Avalos, Corelets' flexibility is a selling point.

Amy Strom/Brangwynne lab

Avalos, an assistant professor of chemical and biological engineering at Princeton, is a co-author on the Corelets work. He is interested in using droplets to transform single-celled organisms into tiny factories. To do this, his team is fusing yet more proteins — enzymes that could make pharmaceuticals or fuels in more sustainable ways — to Brangwynne's systems. The original tool had forced Avalos to tack his enzymes onto one giant conglomerate of proteins. It was crowded from a molecular standpoint, and in that situation "some enzymes just aren't going to be happy," Avalos says. The Corelets system is structured differently, he says, and it's possible to devise less-crowded versions that keep enzymes happy and functional.

In parallel to Corelets, Brangwynne and his collaborators developed yet another tool. This technique, called CasDrop, not only summons droplets at will, but it forms them at specific locations in the DNA inside lab-grown cells. The homing device that targets the droplets to DNA is a protein called Cas9, a component of the Nobel Prize-winning gene-editing system



called CRISPR. This Cas9 is modified so that it retains its homing abilities but lacks the ability to snip DNA.

Amy Strom, a postdoctoral fellow in Brangwynne's group, is using CasDrop to learn more about the interplay between droplets and the genome. The working hypothesis is that droplets have the capability to impact how a cell reads genetic instructions, to influence which genes get turned on or off. "I'm super excited about this technology," Strom says. "We can ask new questions that we weren't able to address before."

Both Corelets and CasDrop are getting attention. *Scientific American* placed them among their top 10 emerging technologies of 2019. The scientific journal *Nature* named CasDrop a technology to watch in 2020. In December, Brangwynne gave a virtual lecture about the tools at a cell-biology conference. One enthralled scientist posted a reaction to the talk on Twitter. The tweet included an emoji with its mouth agape, a mushroom cloud emerging from its head. Translation: mind blown.

While Brangwynne's lab was using a bioengineering approach to make droplets coalesce on cue, a bioengineering community was coalescing at Princeton. The Princeton Bioengineering Initiative launched in November, with Brangwynne at the helm. At a kickoff lecture during the virtual launch party, Brangwynne called plans for the initiative "unapologetically ambitious." The community spans engineering and life-science departments, as well as physics and computer science. Fundraising and planning are underway for a building to act as a physical bioengineering hub. Princeton's community-engagement campaign, "A Year of Forward Thinking," launched last fall, featured a bioengineering theme in March. The initiative is recruiting its first crop of distinguished postdoctoral fellows. The call for applications reads: "We particularly welcome projects that seek to develop novel technologies."

Brangwynne beams when he talks about bioengineering at Princeton. "It's the field that's going to transform humanity in this century," he says. He hopes the bioengineering initiative will spark new collaborations between Princeton's faculty and with New Jersey's network of pharmaceutical and biotech companies. He dreams of next-generation medical devices, smarter tests that will fish out successful drugs faster, and solutions to problems like cancer or dementia.

He isn't dreaming with blinders on, however. "We are very aware of the enormous ethical implications of some of the technologies that fall within bioengineering," with CRISPR gene editing perhaps paramount among them, he says. At the same time, not every technology within bioengineering will provoke the same levels of concern, and as in any field, different technologies will require different degrees of forethought and caution when it comes to their application. "We are right now experiencing on an absolutely massive global scale, a huge success of bioengineering," Brangwynne says, referring to the use of vaccines to engineer the human immune response to fight off COVID-19. "I think one has to be careful, and pragmatic, and realistic about where we're drawing lines," he says, because different people are going to have different comfort levels with the ethics of specific bioengineering technologies.

While planning for the bioengineering institute continues, the Brangwynne lab hums with activity. In July, Brangwynne was named a Blavatnik National Awards laureate — an honor that came with $250,000, the largest unrestricted science prize to young researchers. In October, the lab landed a highly competitive five-year, $7.5 million grant from the Department of Defense. Gladfelter, Avalos, and Pappu are among Brangwynne's co-awardees. Together, they'll use the funds to figure out ground rules for engineering droplets so that they can produce new and useful products. One possible application of this work is droplets designed to pump out advanced materials important for national security. Unrelated to all that, Brangwynne and others in the droplet field have launched drug startups to commercialize therapies for cancer and other diseases where droplets go awry.

Haataja, his collaborator and hockey adversary, has every confidence that Brangwynne will continue to succeed. "Cliff on the ice is similar to Cliff the scholar," Haataja says. "He's tenacious. He doesn't give up. He pushes himself, but in a good way. And when he does something, he does it at 100 miles per hour."

*Carmen Drahl *07 is a Washington, D.C.-based writer whose work appears in* Forbes *and* Scientific American.

A CICADA

EVERY 17 YEARS, A PRINCETON 'MAJOR'

BY ELYSE GRAHAM '07

A biblical plague? Hardly. Let's have some respect for the humble cicada. Familiar, in various species, all over the world, the cicada has an old reputation as a friend of scholars. The ancient Greeks, thinking the insects' music good company for academic discourse, called them soft names like "sweet prophet of summer" and "beloved of the Muses." Regardless of whether they actually prefer academic settings, cicadas make a definite home each summer on Princeton's campus, singing from the crowns of trees: loud as a power mower, warm as a cello. Locust is a common, but incorrect, nickname; when European settlers first saw these insects emerge from the ground in the millions, they feared a plotline from the Old Testament had come for them.

The massive brood that is singing this year only comes once every 17 years. Like Keats' nightingale, which is immortal because the bird has witnessed all of history while living in its own eternal present, always singing the same song, these cicadas sing the same song for every generation that treads the campus paths. In 1885, they sang for high-spirited schoolboys who wore black sweaters year-round and staged regular heists to steal the Nassau Hall bell clapper. In 1919, they sang for a more sober, square-shouldered company of students who had recently returned from the war in Europe.

In 1970, they sang for a campus in revolt. That year, the University gave honorary degrees to Bob Dylan and Coretta Scott King, icons of civil unrest. (Dylan wrote "Day of the Locusts" about his experience at Princeton, with the trilling insects at the center: "Yeah, the locusts sang and they were singin' for me.") In 2004, when students were logging onto a new website called Facebook, they sang for my classmates and me. Today, in a Reunions and Commencement season that a pandemic has quieted, they sing once again for all who are there to hear them.

You must be on campus to hear the cicadas properly. Try playing a recording on Spotify or YouTube or some nature website. Nothing you hear will come close to the layer upon layer of pulsing, buzzing music that the cicada ensemble performs on its open-air stage.

The male cicada does the singing. He sings to find mates, extolling the beauty of his wings, the size of his abdominal cavity, and the strength of his tymbal muscles. But he also cooperates with his romantic rivals to protect the safety of the swarm. In 1970, a team of researchers in Princeton University's Auditory Research Laboratory figured out why cicadas sing so loudly: to keep away predators. Their volume can reach around 100 decibels, the same as a chainsaw; birds, bats, and squirrels find this volume annoying, and they risk damaging their hearing by exposing themselves to it for too long. "Thus, as cicadas congregate in large numbers for mating," wrote the researchers, led by James Simmons *69, "the loudness of their sounds drives birds — and virtually all other visible animal life — away."

The cicada makes his music in much the same way that a human musician plays the cello. Using his tymbal muscles, he pulsates a set of ribbed membranes above a hollow abdominal cavity, just as a cellist manipulates a set of strings stretched over a hollow body. The result is a warm, low, buzzing song.

The female cicada listens and evaluates. When she hears a song she likes, she approaches the singer, flicking her wings in a mating bop of her own, and then deposits eggs in the twigs of bushes and trees. Flea-sized nymphs fall out of the twigs and burrow into the ground, reemerging after 17 years to begin the cycle again.

REUNION

Seventeen-year cicadas should be amassing in Princeton by the time you're reading this.

Princeton's 17-year cicadas belong to two species, *Magicicada cassini* and *Magicicada septendecim.* (A third species is not seen in Princeton, says cicada aficionado Peter Grant, professor emeritus of ecology and evolutionary biology.) They also belong to Brood X, the largest of several broods of cicadas that inhabit the eastern United States. They come outfitted for Reunions season, with wings of orange and black.

In 2004, the last cicada year, alumni at Reunions — specifically, alums who had graduated 17 or 34 years earlier — were talking about their "cicada reunion," according to Tamara Broderick '07, who attended the festivities.

That year, members of the Class of 1970, which has kept an insect theme going for decades, marched in the P-rade under their "Seventy-pede," a centipede costume that has encompassed as many as 70 classmates at once. Gregg Lange '70, PAW's online columnist, recalls that "the whole bug theme" started at the class's 20th reunion. "I was the chair of the Reunions Committee at the time," he says. "A bunch of the more demented creative types came up with the theme, because of the Dylan thing. The costume for the reunion was a jungle costume for a lepidopterist with pith helmets to go with the jackets, Bermuda style. We carried little bug nets and clickers to make the sound of the cicadas." The class motto: "In Locust Parentis."

Also at Reunions in 2004, Scott Smallwood *08, now an associate professor of composition at the University of Alberta, exhibited a music installation that he created from recordings of the cicadas' song.

"When I moved to Princeton, I knew this was going to be happening, so I was excited about it," Smallwood says of the cicada emergence. "But I had no idea what I was in store for."

Smallwood, who carries a tape recorder to record sounds in his environment, realized soon after the cicadas started to emerge that they sounded nothing like the insects he knew. "Anybody who's been in the South or certain parts of the eastern U.S. has heard the sound of the annual cicadas: that rhythmic *shh-shh-shh,*" he says. But the 17-year cicadas created a soundscape that he still struggles to describe: They sound like Captain Kirk's phaser; like the Brooklyn band Mouthus, part of the "noise music" scene; like the late experimental musician Zbigniew Karkowski.

Scott Smallwood *08, who created a music installation with cicada sounds in 2004, is now a University of Alberta professor who records interesting sounds wherever he finds them.

Geoff McMaster

"The sound is unbelievable," he says. "It was often really hard to tell how far away they were. You knew some of them were really close, but it just all conglomerated into this massive, chaotic cloud."

Later that year, Smallwood released the music as a concept album. (You can hear it at bit.ly/brood-x-music).

"I have used the sounds in a lot of other contexts, since then," he says. "They have become part of my vocabulary."

Superstitions have swirled around these insects since at least the time Europeans first wrote about them. In 1669, a settler in Plymouth Colony named Nathaniel Moreton published a book about the history of New England, which interpreted an emergence of cicadas in 1633 as a prophetic omen of a fever that killed more than 20 people. "[T]here was a numerous company of Flies," Moreton wrote,

A young adult cicada in May 2004. After the cicadas emerge, they shed their skin and inflate their wings, which turn from white to orange and black.

Reuters/Alamy Stock Photo

"which ... made such a constant yelling noise as made all the woods ring of them, and ready to deaf the hearers; they were not any of them heard or seen by the English in the country before this time: but the Indians told them that sickness would follow, and so it did ... ." In 1705, another historian noted that a swarm of cicadas had emerged in 1676, one of three "ominous presages" in Virginia around that time. He connected these portents with "the Virginia Rebellion," a bloody settler revolt.

By the 20th century, the periodicity of the periodical cicada was a widely known fact, but people still found ways to argue that cicadas can foretell the future. The insect has orange veins on its wings that form the shape of a "W." Its return therefore presaged war, people claimed — an easy prediction, since unfortunately war is always about to start somewhere.

Much is still not known for certain about these insects, not least because our window of opportunity to see them comes once a generation. Why do they spend 17 years underground? How do they know 17 years have passed? How did two different species of cicada come to share a 17-year cycle in the first place? Why do those two species share a 17-year cycle in one region and a 13-year cycle in another region?

In 2004, two juniors at Princeton conducted field work among the cicadas in preparation for their senior theses. Marian Bihrle Johnson '05 tagged 20 cicadas with small radio transmitters and monitored their activity with the help of two research assistants.

"There was a lot of buzz, no pun intended, about the cicadas in the EEB department," Johnson recalls. "Frankly, the whole campus was energized about the coming of the cicadas because of the lore and almost the biblical proportions of their emergence. I got caught up in that energy."

Radio tracking allowed Johnson to study how the cicadas choose which trees to sing in, she says: "Nobody really knew how far they traveled during their brief lifetimes." She learned that they travel only 300 meters — about 985 feet — in the time between when they crawl out of the ground and when they die.

"As I've returned to campus in this interval between 2004 and now, I've often thought about the construction from the point of view of the cicada habitats," she says. "As the campus changes, what is happening to the cicada populations? Because when they emerge, they can't travel very far. It's not like they can travel to a wooded area off of campus. The vast majority

For her senior thesis, Marian Bihrle Johnson '05 tagged cicadas with tiny transmitters and tracked their movement.

spend their life at the same tree, or they move one tree over."

That same year, Uta Oberdoerster Rawson '05 also did field research on cicadas. "My goal was really to have Professor Peter Grant be my thesis adviser," she says. "I just admire him so much. We met when I was a junior, and he said, 'You know, there's this thing happening in the spring. There's an emergence of Brood X happening — these periodical cicadas. And that's an incredibly interesting event from an evolutionary perspective.'"

For four weeks, early each morning, Rawson visited the grounds around Nassau Hall, taking measurements of every aspect of the trees she could think of — height, foliage, distance between them.

"I had a little clipboard; the grounds crew helped by measuring some of the tree heights for me," she says. "It was an eerie, magical time."

Here is what Rawson learned: First, the only factor that affects where the cicadas sing and lay their eggs is where they emerge from the ground. Periodical cicadas rely on their huge numbers to help protect individuals against predators. She also learned that their wings are adapted to very short flights: "They're not going to fly across the field. They're just going to stick to the tree that they came out of and find their mates within that group."

"They count the years, we think, by measuring the cycles of a tree through their roots," Rawson says. "In the winter, the root fluid slows down, and then it accelerates when it gets warm and all the leaves turn green. So the nymphs underground are able to count. And then, when the soil temperature reaches a certain level, we think, they all emerge within a two- to six-week window."

How do the nymphs spend their 17 years underground? Nibbling on the roots of plants. Enjoying themselves.

Today, Rawson works in the Office of the Chief Counsel (OCC) at the Food and Drug Administration. She is on the OCC's COVID-19 Response Force. She plans to revisit Princeton with her family to hear the cicadas again.

"For me, the sound of the periodical cicada brings back a deep sense of excitement and happiness," she says. "It brings me back to a time when there were lots of questions and lots of mysteries. I can feel exactly what it felt like to be standing in front of Nassau Hall and seeing all those trees covered in cicadas, and the awe of nature."

Johnson, too, has been thinking about her college years because of the cicadas' reunion.

"In 2004, I spent a lot of time thinking about how old I would be when the cicadas returned," she says. "Because 17 years, it's a very odd time cycle to think about your life. It doesn't correspond with a reunion year, it doesn't really correspond to major decades. But I kind of did this calculation as a 20-year-old junior, just thinking, 'Huh. I'll be 37. I wonder where I'll be. I wonder which of life's mysteries will have been answered for me.' And I have to say, over the years, I've kind of returned to that at points of introspection, thinking, 'OK, how close are we to the return of the cicadas? What do I have to show for it?'"

Another alum who says the cicadas are bound into his Princeton memories is Barry McCrea *04, who studied European literature at Princeton.

"The rhythm of the academic year goes very deep — especially when you're young — very deep into your somatic memory," he says. "There's this moment when it starts to get a little bit warm — the end of the year is coming — and the trees burst into bloom on Witherspoon Street. And there's this slightly sour smell, mixed with the smell of coffee coming out of Small World. For me, it really stirs me up, because it's the smell of both beginnings and endings."

The last cicada emergence happened the spring McCrea graduated with his Ph.D., he says: "It really felt like a pathetic fallacy. It was an epochal event in my life, and then bizarrely — it's hard to think that it's true — these black-and-orange insects poured out of the earth and sent us off. I'm still not a hundred percent sure that some Princeton scientist didn't engineer it."

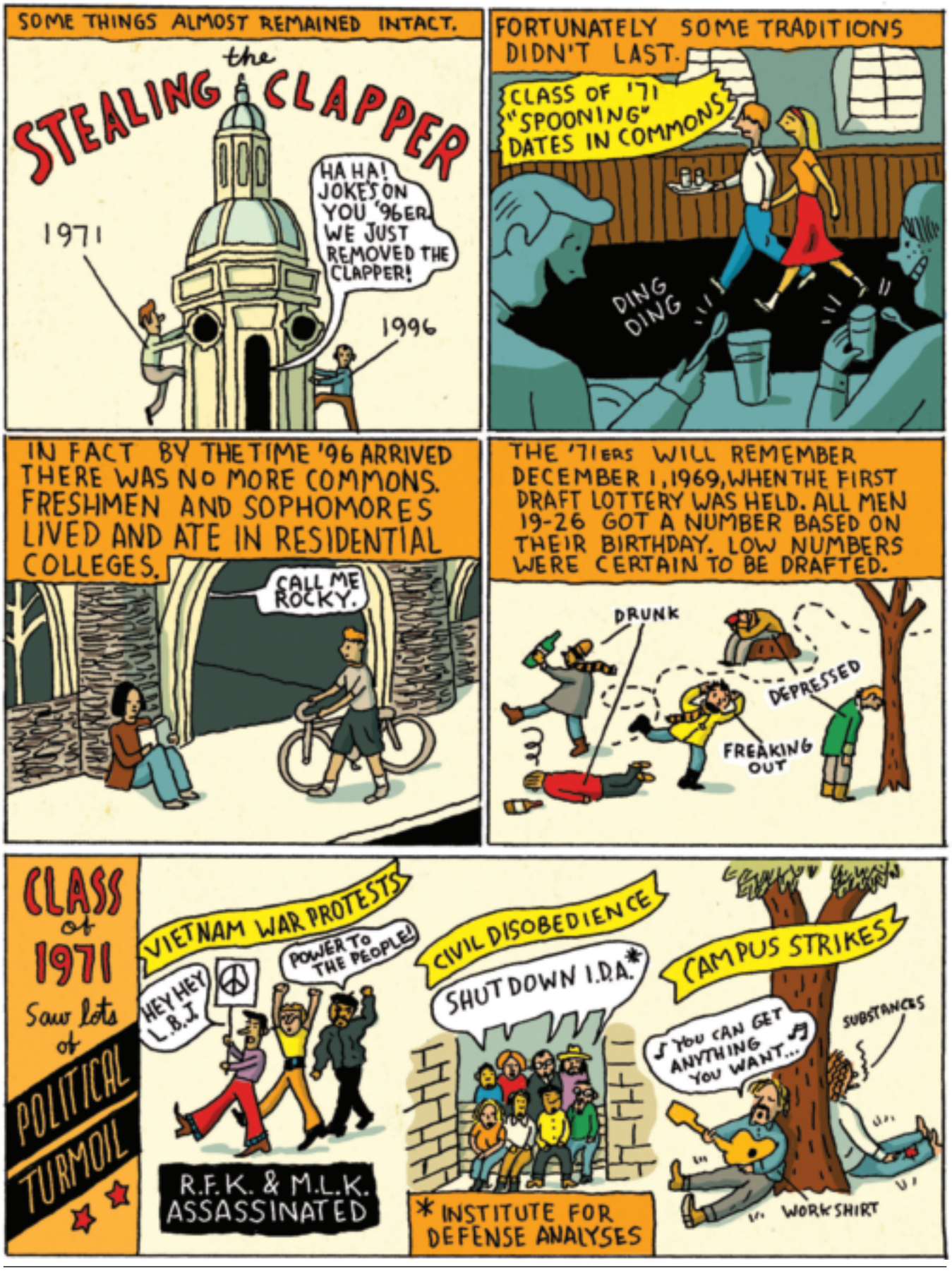
For my own part, I was a freshman in 2004. That spring, I sent a friend a message that was tipsy with wonder in the way that undergraduate reveries usually are: "As I walked home in the dark at 7:40, all the crowns of the oaks burst into song over my head. The insects had started humming at the same time. The sky between the branches was dark, dark blue, and I couldn't tell whether the bits of purple in it came from the dead sunset or from the back of my eyes."

Today, if I like, I can reread books from my undergraduate syllabi. I can get in touch with old teachers or gossip with old friends. But I can't re-create the feeling of being on that campus — or being of it. Here's hoping that next year, we can gather once more under the trees and raise our voices in song. Let's try to return more often than once every 17 years.

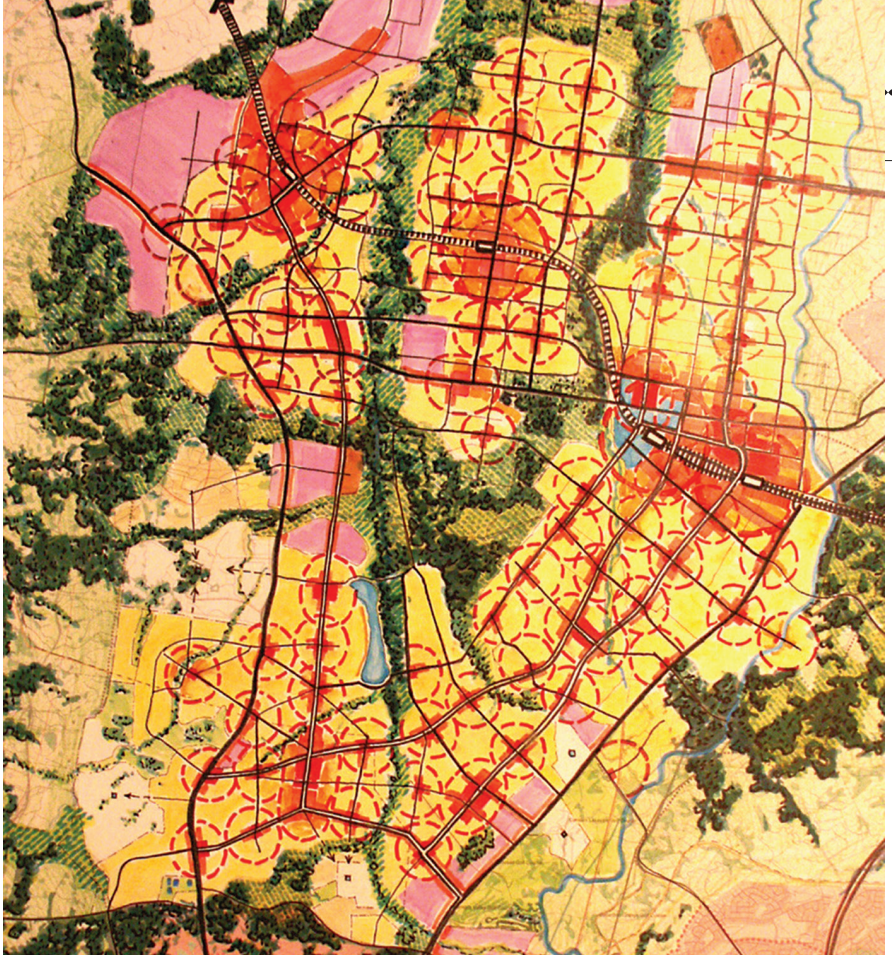
Stony Brook University professor Elyse Graham '07 is the author of You Talkin' to Me?: The Unruly History of New York English.

Denise Applewhite/Office of Communications

PRINCETONIANS


SOME THINGS ALMOST REMAINED INTACT.
the STEALING CLAPPER
1971
HA HA! JOKE'S ON YOU '96ER. WE JUST REMOVED THE CLAPPER!
1996
FORTUNATELY SOME TRADITIONS DIDN'T LAST.
CLASS OF '71 "SPOONING" DATES IN COMMONS
DING DING
IN FACT BY THE TIME '96 ARRIVED THERE WAS NO MORE COMMONS. FRESHMEN AND SOPHOMORES LIVED AND ATE IN RESIDENTIAL COLLEGES.
CALL ME ROCKY.
THE '71ERS WILL REMEMBER DECEMBER 1, 1969, WHEN THE FIRST DRAFT LOTTERY WAS HELD. ALL MEN 19-26 GOT A NUMBER BASED ON THEIR BIRTHDAY. LOW NUMBERS WERE CERTAIN TO BE DRAFTED.
DRUNK
DEPRESSED
FREAKING OUT
CLASS of 1971 Saw Lots of POLITICAL TURMOIL
VIETNAM WAR PROTESTS
HEY HEY L.B.J.
POWER TO THE PEOPLE!
R.F.K. & M.L.K. ASSASSINATED
CIVIL DISOBEDIENCE
SHUT DOWN I.D.A.*
* INSTITUTE FOR DEFENSE ANALYSES
CAMPUS STRIKES
♪ YOU CAN GET ANYTHING YOU WANT...
SUBSTANCES
WORK SHIRT

Marc Rosenthal '71 has been an illustrator for a very long time. His latest children's book is We Love Fishing!, *written by Ariel Bernstein.*



Projected for a population of 250,000, this southwest Sydney expansion plan shows public transportation routes, neighborhood centers, and retention of natural habitats.

NEW URBANISTS UPDATE: CHIP KAUFMAN '71

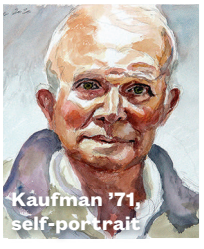
AN URBANIST ISLAND

In January, PAW profiled a group of alumni architects called the "New Urbanists." Together, they revolutionized American architecture with their strategies to reduce sprawl and minimize car usage.

The sequel to this story is how one of Princeton's New Urbanists, Chip Kaufman '71, with his wife, Wendy Morris, exported this ethos beyond America, to the sunbaked shores of Australia.

Morris and Kaufman have designed several town expansions and urban revitalization programs throughout Australia — and just as importantly, they have drafted "anti-sprawl" planning and building codes for some of the country's biggest population centers. This work includes the 64,000-acre Western Sydney Urban Land Release — two urban expansions that are forecasted to have about 380,000 people by the 2030s. (A new airport and metro line are underway to serve these areas.)

Most important, Kaufman and Morris inspired a generation of Australian citizens, planners, and politicians to take up the cause of "walkable neighborhoods,"



Kaufman '71, self-portrait

using the design workshops that are a hallmark of the New Urbanist design process.

At Princeton, Kaufman majored in architecture alongside fellow New Urbanists Andres Duany '71, Stefanos Polyzoides '69, and Elizabeth Plater-Zyberk '72. But his passion lay in drawing and painting. "Architecture was the closest creative major I could think of. I didn't lift a hammer or really understand architecture until well after school."

By 1974, Kaufman had given up architecture to pursue fine art, until a "serendipity" brought him back to the field. "I was shooting old buildings for the Texas Historical Commission when I discovered a historically intact town on the Guadalupe River while kayaking." Struck by its beauty, Kaufman ended up directing the adaptive reuse of the abandoned 30-building town, called Gruene — which had been slated for demolition before Kaufman successfully argued for its revitalization.

Gruene taught Kaufman the lessons of town construction from the floorboards up. "It was there that I began to actually understand about building — how far 20 feet is, what an empty space feels like." Inspired, Kaufman moved to Sacramento, California, and started his own architecture firm.

In 1989, Duany, Kaufman's classmate, visited nearby Berkeley to lecture on the architectural theories he was developing with his wife, Plater-Zyberk — ideas that would soon be known as New Urbanism.

"Afterward I went straight to Andres, grabbed him by the neck and said, 'Please, Andres, I want to volunteer. Let me learn as much as possible with you.'" Kaufman spent the following years learning the ropes of New Urbanist design.

In 1991, Wendy Morris, a leading Australian urban designer, wrote to Duany and Plater-Zyberk requesting that an expert come Down Under to lead design workshops. Kaufman volunteered — and three years later, he moved to Australia to live and work with Morris.

One of the couple's big projects in the late 1990s involved helping to draft the "growth code" for the state of Western Australia, which was "on the verge of perpetuating textbook sprawl," says Kaufman. He and Morris led a five-day design workshop for Western Australia, and by the end, the planning office head was convinced.

In recent years, Kaufman has stepped away from architecture to return to his first loves: painting and whitewater kayaking.

"Their work is still being built to this day, because in Australia things take so long to be implemented," said Brian O'Looney, a New Urbanist architect and scholar who has collaborated with Morris and Kaufman on several projects. In the meantime, O'Looney said, Morris and Kaufman's designs for Australian cities easily hold up to any of their stateside New Urbanist counterparts.

By David Walter '11

Rendering and self-portrait courtesy Chip Kaufman '71 (chipkaufmanartist.com)

CLASS NOTES

Online Class Notes are password protected. To access, alumni must use their TigerNet ID and password. Click here to log in: http://paw.princeton.edu/class-notes

MEMORIALS

PAW posts a list of recent alumni deaths at paw.princeton.edu. Go to Reader Services on PAW's home page and click on the link "Recent Alumni Deaths." The list is updated with each new issue.

THE CLASS OF 1941

John C. Beatty Jr. '41

Jack died April 26, 2016, at his home in Portland, Ore., at the age of 97.

He prepared at Lincoln High School in Portland. Upon graduation Jack received one of 19 scholarships Princeton offered that year to boys from Western and Southern states. At Princeton he majored in the School of Public and International Affairs, lettered on the varsity fencing team, edited poetry for the literary magazine, and graduated with honors. He was a member of Dial Lodge.

During World War II, Jack served with distinction in Europe as an Army officer in the 310th Field Artillery Battalion. He served in campaigns from Normandy to V-E Day. Jack received a battlefield promotion to captain, was awarded the Bronze Star, and his battalion received a Presidential Citation.

Jack practiced law in Portland. In 1970 he was appointed to the bench for the county circuit court, where he served 14 years. Upon retirement, he was active in local politics and in a variety of civic affairs. In his spare time, he wrote novels, poetry, and an autobiography, *The Politics of Public Ventures,* published in 2010.

His first wife, Clarissa Hagar Beatty, predeceased him, as did his second wife, Virginia Rupp. Son John C. Beatty III '69 died in 2020. Daughter Clarissa Jean Beatty and grandson Trask John Beatty-Pernetti survive him.

Marinus Contant Jr. '41

Connie died peacefully Oct. 1, 2016, at his home in Corona del Mar, Calif., with his loving wife, Christina, by his side. He was 97.

Connie prepared at Hackensack (N.J.) High School. In the fall of 1937 he transferred from Amherst to Princeton. At Princeton he majored in politics, was an editor of the *Bric-A-Brac,* and was a member of Elm Club.

Following Princeton, he earned a law degree from Yale. In the late 1940s he practiced law in New York and, after a move to Southern California, in Los Angeles. He then changed careers, went into the electronics and aerospace business, and moved to Newport Beach. He sold this business in 1970 and retired to pursue his interest in investing, which he did for the remainder of his life.

Connie was an avid tennis player. He enjoyed the social and athletic activities at clubs he belonged to in Newport Beach and in Honolulu.

At the time of his death, he was survived by his wife, Christina; two sons, Robert and Thomas; three grandchildren; four great-grandchildren; two stepchildren; and four step-grandchildren.

Elbridge R. Graef '41 *42

El died July 10, 2016, in Greenville, Del. He was 96.

He prepared at Horace Mann School in New York City. At Princeton El majored in chemical engineering. He played interclub basketball and baseball and was a member of Charter Club. In 1942 he earned a master's degree in chemical engineering from Princeton.

During World War II he served a tour of duty in the Pacific as an ensign aboard an attack transport. He went on inactive status in 1946 as a lieutenant, junior grade.

El spent his career as a chemical engineer and in management with DuPont in Delaware and Texas. After his career at DuPont he pursued his passion for investing.

In 1957 he married Sally Ann Williams, the love of his life. They enjoyed many happy summers sailing on Chesapeake Bay and winters in Vero Beach, Fla. He was devoted to his wife and family.

El was survived by Sally; sons Charles, Peter, Fred, and David; sister Edith McGeer; nephews Tad McGeer *79 and Rick McGeer; and niece Victoria McGeer, a senior research scholar at Princeton.

THE CLASS OF 1945

John David Lindsay Jr. '45

David was born in Findlay, Ohio, into the family of Presbyterian minister John David Lindsay Sr., a 1916 graduate of Princeton Theological Seminary. David's uncle William Bixler Barnitz 1917 was a strong influence.

David had two years of premed studies at Princeton before the Army sent him to medical school at Temple University. He interned at Abington Hospital, where he met Jane Conard. They were married for 63 years until she died in 2012. They raised four children; Jack (JDL III) died at the age of 55.

Service obligations led to assignments at several Army Air Force bases on the East Coast and in Texas before settling in Fairmont, W.Va., where David practiced internal medicine for 35 years with his friend and former chief resident at Abington, Jesse Jenkins. Starting at age 65, he worked part time in the ER at Fairmont General Hospital, and then at a public clinic until the age of 85. He was an elder and scoutmaster at First Presbyterian Church of Fairmont.

David died Feb. 19, 2019, a few years after his brother, Elmer Rambo Lindsay '50. He is survived by his children, Becky Lindsay '75 and her husband Scott Pearce, Robert and his wife Lynn, and Andrew and his wife Nancy; grandchildren John (JDL IV), Sarah Beth, Jessica, and Mack; sister Mary L. Welch; sister-in-law Mary W. Lindsay; cousin Barbara Lillich; and daughter-in-law Sharon Lindsay.

Spencer C. Wolling '45

Spence came to Princeton from St. Louis Country Day School. His Princeton education was interrupted by service as an Army ordnance technician in the South Pacific during World War II. After the war he returned to Princeton, was president of Campus Club, majored in mechanical engineering, and graduated *magna cum laude* in 1947. He graduated from Harvard Business School in 1949.

In 1950 he married Millie Scheer, whose letters and chocolate cake had kept his spirits up during the war, and they were happily married for 64 years.

As an engineer Spence worked for Mississippi River Fuel Corp. to expand natural gas service in St. Louis. While working and helping raise three young children, he became a CPA and a partner in Huber, Ring and Wolling. He went on to become vice president of finance for L.E. Sauer Machine Co., where he worked until retirement.

Spence was an avid golfer, shooting a hole-in-one three times. He is immortalized at Westborough Country Club for the many years in which he shot a golf score lower than his age. He also served as deacon, trustee, and elder at the First Presbyterian Church in Kirkwood.

Spence died Nov. 1, 2020. He was predeceased by his wife, Mildred, and his son, Mark. He is survived by daughters Barbara and Susan '80.

THE CLASS OF 1948

Robert B. Welch '48

Dr. Bob was a renowned physician-leader in ophthalmology. For a quarter-century he headed the Wilmer Retinal Service at Johns Hopkins

University Medical School, where he had been a towering (at 6 feet 8 inches) medical student with a number of other '47, '48, and '49 Princetonians.

He was raised in Annapolis, Md., where he later maintained a medical practice. His college career was interrupted by service as a Navy medical corpsman. He returned to graduate in 1949 with honors in biology. Bob was an ardent loyal alumnus and class reunion regular, spending football afternoons at Palmer Stadium with the OOPS (Organization of Opthomologists at Palmer Stadium) group.

Bob and Betty were married in 1953. Their home was in Annapolis until his retirement, and then at the Towson, Md., retirement community where Bob died Jan. 5, 2021. He was 93. Betty died in 2016. He is survived by a sister and two cousins.

THE CLASS OF 1951

Marcus Perrin Knowlton '51 *58 Born in the Boston area, Marc graduated from Hotchkiss. At Princeton he majored in aeronautical engineering and was active in the Flying Club, World Federalists Club, and the Institute of Aeronautical Science. He was a member of Tiger Inn, and his roommates included classmates Farrell Bushing and Ralph Condit.

Upon graduation he remained at Princeton to earn a master's degree and work for the Department of Aeronautics and Mechanical Engineering as a lecturer and research associate at its Forrestal facility that specialized in the study of hovercraft vehicles.

In 1958 Marc married Meredith "Merry" McLaughlin, a Bryn Mawr graduate who was the daughter of Roland McLaughlin, dean of the School of Architecture. Marc and Merry bought an old farmhouse on a 100-acre property along the D&R canal and they were very much a "faculty couple," their home serving as a social center for students and friends. They traveled widely and were active on the local tennis circuit as well as in several community organizations. They also built a vacation cottage amid a colony of Princetonians on the Caribbean island of Culebra and, on Marc's retirement, they moved to a family home in Newagen, Maine. Marc died there March 20, 2020.

THE CLASS OF 1953

John Ernest William Baay '53
John died March 13, 2021, in Amarillo, Texas, where he had lived for 50 years.

He was born in Mexico City to Dutch parents and learned English only when he was sent to the Choate School in Wallingford, Conn., at the age of 13. At Princeton he joined Quadrangle Club and majored in basic engineering.

He graduated from Johns Hopkins Medical School in 1957 and completed a fellowship in vascular surgery at Duke University. He completed his cardiothoracic surgical training in Houston with Drs. DeBakey and Cooley and then moved to Erie, Pa., where he began his surgical practice.

In 1971 John moved his family to Amarillo, Texas, where he became a U.S. citizen and faithfully served the people of the Panhandle until he retired in 2002.

John is survived by Nan, his wife of almost 60 years; four children; 13 grandchildren; and three great-grandchildren.

William Deshler Cox Jr., '53 William died Feb. 10, 2021, in Chicago, where he was born and where he spent most of his life.

He attended the Latin School of Chicago and graduated from The Hill School in Pennsylvania. At Princeton he joined Tiger Inn and majored in English, but left during his junior year to serve in the Air Force as a navigator on fighter jet interceptors.

William then completed a business degree at Northwestern and began a career in the family business, the Fibre Drum Co., which had evolved from the Pioneer Cooperage Co. founded by his grandfather.

Predeceased by his first wife, Janet, and his son William, he is survived by his wife Jane, son David, daughter Christina, grandson William, and three stepchildren.

John Godfrey Middleton '53 Jack died Jan. 13, 2021, of complications related to COVID-19 in Monmouth County, N.J.

Jack was born in Rochester, N.Y., and came to Princeton after attending Phillips Exeter Academy. He became a member of Cottage Club and majored in English. His thesis was "Naturalism in American Drama."

After graduation Jack served as an artillery officer in Germany, where he met the general's daughter and married her in the American Cathedral in Paris. Returning to the United States, Jack went to work for IBM but left after six years to create the Middleton Card Co., manufacturing punch cards that were an early version of computer software. In 1971 he joined Discount Corp., a primary dealer in U.S. Government obligations, and retired as vice president in 1991.

He was a member of the Seabright Lawn Tennis and Cricket Club, the All Saints' Memorial Church National Landmark Trust, and the All Saints' Vestry.

Jack was predeceased by his wife of 62 years, Nancy. He is survived by one son, two daughters, and three grandchildren.

David Bruce Rubidge '53 Bruce was born in Pittsfield, Mass., and grew up in Chatham, N.J. He attended Chatham High School and the Peddie School before coming to Princeton, where he joined Tower Club and majored in history. He wrote his thesis on "The Historical Development of Welfare Capitalism in the United States."

After graduation Bruce joined the Navy and spent two years of "rather dull duty" in amphibious forces operating out of Norfolk. He then went to work for IBM selling data-processing equipment and then as an industry-analysis manager in the advanced systems development division. Bruce eventually left IBM to pursue an interest in investing with Kidder Peabody. A few days after our 20th reunion, Bruce moved to Pittsburgh to become president of the Laurel Foundation, a private charitable foundation.

Bruce then began his own investment advisory business, Rubidge Associates. He moved to Chapel Hill in 1985 and entered the Forest at Duke in 2006. He died there of a stroke May 18, 2020. Bruce was predeceased by his son Bradley '80, and is survived by his wife, Nell, their son Bill, and their daughter, Cindy.

THE CLASS OF 1954

Thomas F. Merrill '54
Tom died Jan. 15, 2021.

At Blair Academy he was active in football and swimming, glee club, choir, publications, and volunteer programs, and was senior-class president.

At Princeton he majored in English in the American Civilization Program, writing his senior thesis on "Religious Aspects of Eugene O'Neill." He served on the 1954 Freshman Student Council and sang in the Freshman Glee Club, the Nassoons, and the Octet. He joined Tower Club. Classmates remember him as totally focused on his major in English literature, quiet yet charismatic, and a talented musician and pianist with a fine voice.

After service in the Air Force, he earned a master's degree in English at the University of Nebraska, where he met his wife, Mary Jane, and then received a Ph.D. at the University of Wisconsin.

Tom spent most of his career as an English professor at the University of Delaware. He enjoyed traveling the U.S. and Europe with his family. He was also an accomplished artist, writer, and a lifelong swimmer.

Survivors include his wife, Mary Jane; three children, Kimberly, Elizabeth, and Patrick; three grandchildren; one great-grandson; and daughter-in-law Jenny Merrill. Tom was predeceased by his two sisters and his son Charles.

Richard E. Leslie '54
Dick died Dec. 13, 2020.

He graduated with highest honors from Garden City (N.Y.) High School, where he played lacrosse and soccer.

At Princeton he majored in electrical engineering, an interest dating from his childhood. He joined Cloister Inn, played cornet in the band and orchestra, and was active in the Student Baptist Association. He and roommate Fred Brewer worked at the Princeton Music Center, installing hi-fi systems and repairing radios. He also worked part time at Sincerbeaux Engineering.

In June 1953 Dick married Nancy Dumont. Upon graduating *cum laude* he pursued a master's degree in electrical engineering while working at Sperry Gyroscope, and eventually enjoyed a career in the aerospace industry with Airborne Instruments, TRW, and the Aerospace Corp., developing and deploying satellites and GPS systems.

An avid sportsman, Dick was an accomplished rifleman from his youth and participated in the 1960 Nationals in Ohio. Dick hiked, sailed, bicycle-raced, and ran marathons. He was accepted to run the Western 100 Endurance Run when his youngest daughter, Nancy, was stricken with terminal cancer in 1995.

He and his wife moved to Los Osos, Calif., to be closer to their other three daughters and to help to care for daughter Nancy's twins. He was a committed churchman and a true Princetonian, always studying, learning, experimenting, or building something.

Dick is survived by Nancy, three daughters, five grandchildren, and two great-grandchildren.

Henry L. Sweatt '54
Harry died Oct. 21, 2020, in Wayzata, Minn., of complications of COPD. He graduated as salutatorian at Westminster School, Simsbury, Conn.

A history major at Princeton, his senior thesis was on Aaron Burr. He joined Terrace Club, was active in Whig-Clio, and was a four-year varsity swimmer. After earning an MBA at Harvard Business School in 1956, he served in the Finance Corps of the Army in Germany for two years.

In 1955 Harry married Virginia Ecklund (Vassar '57). During his career with Minneapolis-Honeywell, co-founded by his grandfather William R. Sweatt, he worked in New York and Cincinnati and built joint ventures and strategic partnerships around the world. In 1978 the family returned to Minneapolis to reestablish their deep roots in Minnesota.

Harry was a lover of classical music, active in his church, and a generous contributor to numerous philanthropic organizations.

After retiring in 1988 he and Ginny bought Red Pine Island on Rainy Lake near International Falls, Minn., which they enjoyed for 33 summers with their children and grandchildren.

Harry is survived by his wife of 65 years, Ginny; children Margie Kunhardt '80 and Bill Sweatt; and eight grandchildren. His oldest daughter, Catherine Mueller, was attacked and killed by a bear on their island Sept. 1, 2019, while rescuing their two beloved springer spaniels.

THE CLASS OF 1955

David C. Hawley '55
Dave died peacefully Dec. 20, 2020, at home.

Born in Evanston, Ill., Dave graduated from the Choate School before attending Princeton, where he majored in history. He joined Quadrangle Club, was the business manager of Triangle Club, and was active in the Senior Glee Club, the Undergraduate Council Staff Executive Committee, and the Orange Key Advisee Project. His senior-year roommates were Pete Bott and Tom Smith.

Dave served as an officer in the Navy from 1955 to 1958. He then attended Northwestern University, where he earned an MBA in 1959.

Dave joined the Inland Steel Co., rising to serve as director of public affairs until his retirement in 1995. He was as an adviser to the U.S. secretary of commerce and U.S. trade representative on international trade policy for 30 of those years.

Dave was a board member of the Laidlaw Corp., a volunteer in the Executive Service Corps, treasurer of the Boy Scouts of America Troop 20, and a member of the University Club in Chicago.

The family enjoyed their century-old home that featured a former barn that had once housed the area's horse-drawn fire engine. They liked to travel and treasured time at the family Michigan lake house Crystal Cove, where Dave's grandparents had established a vacation cottage in 1933.

Dave is survived by his wife of 64 years, Dorothy; their three children; and six grandchildren.

James C. McGough '55
Jim died Feb. 5, 2021, of COVID-19 following an extended illness. Dee, his wife of 53 years, said of his passing, "He was a great man and a great husband; we had a wonderful life. He was a faithful friend to many."

Jim was born March 22, 1933, in Pittsburgh and graduated from Wilkinsburg High School outside Pittsburgh, the city where he spent much of his life. At Princeton he joined Dial Lodge, majored in history, and was involved with WPRU, St. Paul's Society, and Whig-Clio. Senior year he roomed with Harry Estill and John Cruikshank. Princeton was a lifelong interest, and he was a fixture within the large Princeton contingent in the Pittsburgh area. He loved to attend Reunions, notably his 60th in 2015 that he celebrated with Estill and Cruikshank.

After graduation, three years in the Air Force and an MBA from the University of Pittsburgh, Jim joined Mellon Bank. There he spent his business life, capped by five years at Mellon Bank Florida in Boca Raton, retiring as president in 1988.

Jim and Dee loved to travel, especially in the UK and on summer expeditions to Stone Harbor, N.J. He was dedicated to community work, especially for the Episcopal Church and for juvenile justice.

Jim is survived by Dee; son Stewart; daughter Margaret; and six grandchildren.

Otto Lucien Anton Spaeth Jr. '55 Tony, a noted authority on corporate identity, died of Parkinson's disease at home in Rye, N.Y., Jan. 13, 2021. He dealt gracefully with Parkinson's for 15 years, able to walk to the end. With him was Ann, his wife of more than 60 years.

Tony was born in St. Louis Feb. 6, 1934, and before Princeton attended Portsmouth Priory and Millbrook School. At Princeton he joined Key and Seal and majored in architecture. After Princeton he earned an MBA at Harvard in 1963. Tony was involved with Princeton Project 55 in its early days, and Ann was among the first women to serve on its board.

Tony was a leader in the emerging use of design as a corporate leadership tool. He was a mentor to many in the field, spoke at international conferences, and contributed to several publications.

He was an avid golfer and loved to travel with Ann. Among their favorite trips were Class of '55 ventures; they considered their class trip to Italy as perhaps their best trip ever. They were regulars at the biweekly meetings of the One World Book Club, exploring geopolitical issues.

Tony is survived by Ann; his four daughters, Catherine, Jennifer, Bridget, and Crispin; two grandsons; three great-grandchildren; and his sister, Mimi Koon.

THE CLASS OF 1957

Peter Clapman '57

Before Peter, many big businesses were different. There were few effective ways to challenge corporate management by a takeover bid when their performance frayed. Management did as it chose, sometimes even illegally. The consequences could be decreasing share prices or, ultimately, failure. Peter conceived another way — enabling institutional shareholders to challenge malfeasance by disallowing management the then-typical defense against a hostile takeover known as a poison pill that devalued shares held by challengers.

Peter's venue was TIAA, originally a money manager for teacher pensions founded by Andrew Carnegie with assets now of $1 trillion. Peter was at TIAA for 34 years, creating for himself a position he called chief investment counsel. He reported to the chief investment officer; 20 lawyers reported to Peter. Peter worked on this project behind the scenes with people more powerful than he, including the chairman of the New York Stock Exchange and CaLPERS, the California state investment trust. He later expanded his thinking on corporate responsibility to European institutional investors. His intelligence, clarity, calmness, and integrity contributed to his effectiveness.

At Princeton, Peter belonged to Prospect Club. He then graduated from Harvard Law School. He was a Jets fan and followed Princeton women's lacrosse and men's basketball.

Peter died Feb. 9, 2021, of COVID-19. He is survived by his wife of 55 years, Barbara; two daughters, Alice '98 and Leah '93; and four grandchildren.

THE CLASS OF 1958

Robert M. Alfred '58

Bob died Feb. 1, 2021, in Beachwood, Ohio. He was 84.

He came to Princeton from Shaker Heights High School, where he was active in wrestling and track and an officer of the Social Council and president of Hi-Y. At Princeton he was a Keyceptor and a member of Orange Key, the Undergraduate Council staff, and the Cleveland Club. He majored in history and was a member of Quadrangle Club. He roomed with Gene Flamm.

After graduation Bob served six months in the Air Force Reserve, then moved to Boston and entered the training program in retail merchandising at Filene's. In 1961 he became a buyer at his father's store in Youngstown, Ohio, eventually becoming general merchandise manager. After many years in retail, he became a business consultant, helping senior corporate officers to reach their full potential, mostly in the Pittsburgh area.

Bob was predeceased by his wife, Susanne, in 2020. He is survived by daughters Kate and her husband Adam, and Amy and her husband Larry; brother Stephen '56; and grandchildren Rachel, Jacob, Victoria, Sarah, and Zachary. The class extends its deepest sympathy to them all.

L. Desaix Anderson '58

Desaix died Feb. 11, 2021, in New York City. He was one day shy of 85.

He came to Princeton from West Tallahatchie High School in Webb, Miss., where he was active in debating, dramatics, and the school newspaper.

At Princeton Desaix was a Keyceptor, member of Whig-Clio and the Pre-Law Society, and in NROTC. He majored in history and was a member of Quadrangle Club. He roomed with Jack Perkins and George Daly.

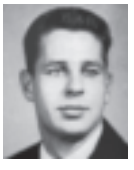
After graduation he served in the Navy, did graduate work at Berkeley, and entered the Foreign Service in 1962. There Desaix specialized in East Asian affairs, and was especially known for his instrumental role in restoring formal diplomatic relations between the United States and Vietnam after opening the first U.S. Embassy in Hanoi after the Vietnam War.

Retiring from the Foreign Service in 1997, he served as a special envoy on Cambodia and taught at the Woodrow Wilson School of Public and International Affairs. From 2007 through 2009, he conducted summer seminars for Princeton undergraduates in Hanoi.

Late in his career Desaix took up painting and quickly became known for his artistic talent; his works have been exhibited at New York galleries in Soho, Tribeca, and Chelsea.

Desaix also established the Laurence Desaix Anderson and James Buford Anderson Professor of East Asian Political Economies chair on Contemporary East Asian Political Economies in Princeton's East Asian studies department in coordination with the Princeton Institute for International and Regional Studies.

Desaix is survived by siblings Elizabeth Aldridge, Buford Anderson '62, and Florence DeCell w'72; 13 nieces and nephews; and many more great-nieces and -nephews. The class extends its deepest sympathy to them all.



Paul Barger Kern Jr. '58

Paul died Feb. 10, 2021 in Cary, N.C. He was 84.

He came to Princeton from the Landon School, where he played football, basketball, baseball, track, and golf.

At Princeton he played freshman football and basketball, varsity golf (captain), and was varsity basketball manager. He majored in psychology and was a member of Cannon Club. He roomed with Dave Dickey, Jack Sapoch, Julian McCaull, and Jacques de Spoelberch.

After graduation he joined the Navy Officer Candidate School, trained in photo intelligence, and was assigned to a CIA unit as naval liaison. Paul was deeply involved in the Cuban missile crisis. In 1962 he went into the family lumber business, and in 1963 he and Sally married. He sold the business in 1989 and started a second successful career in real-estate investment.

A major source of pride was the Landon School. Paul served on its board of trustees and his son and a grandson graduated from the school. He was instrumental in establishing the school's current ethics program by leading the fundraising effort to endow the Paul Landon Banfield Endowed Chair in Ethics. The program has become a national model for independent schools.

Paul is survived by his wife, Sally; son Rocky; daughter Kelly; and five grandchildren. The class extends its deepest sympathy to them all.

Edwin McCall Leiby '58

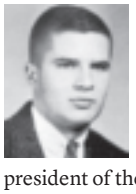
Ned died Sept. 18, 2020, in Willow Grove, Pa. He was 84.

He came to Princeton from Ellendale (N.D.) High School, where he participated in baseball, student government, and glee club.

Ned left Princeton and graduated from the University of North Dakota; he subsequently earned an MBA from Harvard Business School. There he met Bobbie Conger, and they were married in 1962 in Abington, Pa.

Ned was self-employed as a manufacturer's representative for most of his career. Known for his inspiring tenor, he was often called upon to sing the national anthem to open Abington Memorial Hospital's June Fete Village Fair. He was active in local theater and was a dedicated member of The Orpheus Club of Philadelphia.

His wife predeceased him. Ned is survived by son Edwin M. III and his wife, Mary Marbach; daughter Carolyn Leiby; and his three grandchildren, Ashlee, Erika, and Ian. The class extends its deepest sympathy to them all.



Leroy Riddick Jr. '58

Roy died Jan. 29, 2021, in Mobile, Ala. He was 84.

He came to Princeton from Messick High School in Memphis, where he was president of the senior class.

At Princeton Roy was secretary of the class, chair of the Keyceptor program, a Chapel deacon, and headwaiter of Commons. He majored in history and was a member of Cap and Gown. He roomed with Pete Bowman, Bill

Rudd, Hewes Agnew, Bill Carruthers, Larry Jelsma, Richard Jelsma '59, and Bob Bessire.

After graduation, he earned a master's degree in history from Columbia University and a medical degree from the New Jersey College of Medicine. In 1979 Roy moved to Mobile to take a position as forensic pathologist. In 1987, as senior medical examiner, he helped establish the first certified office of the medical examiner in Mobile. Roy was also a professor at the University of South Alabama Medical School.

In addition to his legacy as a medical director, he leaves behind countless former students and colleagues who cherished his kindness, wisdom, and keen sense of humor. Roy loved dogs, reading, baloney, Heinekens, and watching football with his family. He detested broccoli.

Roy is survived by his wife, Carol; his sister, Dorothy; his stepdaughter, Lynn Waggoner; stepsons Henry Waggoner and his wife Thashia, and Daniel Waggoner and his wife Karen; and grandchildren Carley, Patrick, Nicholas, Olivia, and Elizabeth. The class extends its deepest sympathy to them all.

THE CLASS OF 1959

Mark D. Birnbaum '59

Complications of pneumonia took Mark at Scripps Hospital in Encinitas, Calif., Jan. 5, 2021.

He came to Princeton from Scotch Plains (N.J.) High School, where he edited the school paper and graduated as class valedictorian. At Princeton he majored in electrical engineering, was active in WPRB, Whig-Clio, and the Outing Club, and took his meals at Prospect. Marriage to Sarah Davis followed six days after graduation, then a master's degree in electrical engineering at Northeastern and study at MIT, San Diego State, and University of California. Work with General Dynamics on the Atlas, Centaur, and Mercury space programs followed, then work with MIT where he designed part of the Apollo guidance system critical to successful moon flight.

A transplanted "left-coaster," Mark's career centered on technology as a senior computer-systems consultant for Control Data in San Diego designing secure communications systems for the Navy; microelectronics liaison with National Semiconductor; advanced computer technology for National Advanced Systems; then back with National Semiconductor as deputy director of government technology business, and a move to the Bay area. He wrote two books, one on computers and one on electronic design automation, both translated into several languages, including Chinese and Korean.

Mark is survived by his wife of 61 years, Sarah; daughters Michele and Tara; son Andrew; sister Helen; and three grandchildren. We have sent condolences.

Arthur L. Brown II '59

Sandy died Feb. 12, 2021, in Austin, Texas, surrounded by loved ones.

Gregarious, hail-fellow-well-met, he was a three-letter athlete and student government president at Mountain Lakes (N.J.) High School. At Princeton Sandy prepared for medicine while majoring in English, writing his thesis on E.M. Forster. He roomed with Bennett, Capen, Cotter, Oakes, and Volckhausen. Active in Orange Key and in interclub sports at Cap and Gown, Sandy managed to spend most of his free time in Michigan wooing Judy Coburn, his childhood "girl next door," whom he married in July 1959.

After medical school at Columbia's College of Physicians and Surgeons and interning at Minneapolis General, Sandy talked the Army into sending him to France for two years of military service, leading to a lifetime as an oenophile and Francophile. A further internship at Detroit's Henry Ford Hospital followed before Sandy settled in Kalamazoo, Mich., for 30 years as a general surgeon, first in a solo practice and then with two partners at Kalamazoo Surgery. He was an assistant professor at Michigan State's College of Human Medicine, a fellow of the American College of Surgeons, and author of several surgical treatises.

A Princeton Tiger first, Sandy loved Michigan football, a meticulous approach to the grill, tennis, vacations in Ixtapa, and his Lake Michigan retirement retreat. Sandy lost Judy in 2005. The class extends its condolences to his family, especially daughter Jenny '85; son Chip; and brothers Chris and Garry.

David L.B. Fringer Jr. '59

David passed away peacefully in his sleep Jan. 3, 2021.

Born in Baltimore, Md., he prepared at McDonogh School. At Princeton he majored in biology, earned a letter for wrestling, and belonged to Tiger Inn. After Princeton he studied medicine at the University of Maryland, followed by residencies in internal medicine and cardiology at Roosevelt Hospital in New York City. He spent a year in Vietnam as a Navy flight surgeon before marrying Katherine White just two weeks after they met. Then followed two years as a Peace Corps doctor in Brazil, 20 years as a Foreign Service doctor, and practice in clinics in Boston and Palm Springs until retirement at age 81.

David lived life to its fullest. No one experienced more joy and delight from ribald jokes than he did. Tears of happiness streamed down his face as he told them, and he winced with pleasure as those around him gasped and cried out "David!" in shock. He had a brilliant mind for words, puzzles, and language; appreciated beauty in art and literature; and loved to play games (especially for money) like chess, backgammon, poker, and cribbage. He dreamed of retiring on the beach in Brazil, spending the days puffing on a Marlboro while sharing a stiff drink and a laugh with wife and friends.

David is survived by his wife; four children, including Oiver '95; seven grandchildren; and a brother. We have sent condolences.

James F. Ridgeway '59

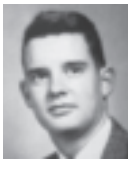
Jim was still immersed in his extraordinary life as a hard-hitting, muckraking, crusading journalist when he died of complications from shingles in Washington, D.C., Feb. 13, 2021. His book *Blood in the Face: The Ku Klux Klan, Aryan Nations, Nazi Skinheads and the Rise of a New White Culture,* published 30 years ago, was so relevant that he added new material for a fresh edition out after his death.

Jim, whose father was Class of 1923, prepared at the Hackley School, served as chairman of the *Prince,* and dined at Cloister. After graduation he worked for *The Wall Street Journal,* then *The New Republic.* Among his first exploits were articles about harassment of Ralph Nader '55 and fatal flaws in motor vehicles. Nader told *The Washington Post,* "I have never met a more honest ... reporter with such a thirst for justice."

As a DC-based columnist for *The Village Voice* for more than 30 years, Jim explored wrongdoing in high and low places. In a score of books and documentaries he exposed the evils of pollution and the environment, the sex industry, ties between universities and corporations, and much else. Leaving the *Voice* in 2006, he wrote for *Mother Jones,* among others. In recent years he focused on the suffering of prisoners in solitary, exchanging letters included in *Hell Is a Very Small Place: Voices from Solitary Confinement.*

To his wife, Patricia; his son, David; and brother, George '64, the class extends deepest condolences.

THE CLASS OF 1960



John H. Arens '60

John came to Princeton from the Cate School in Carpinteria, Calif. With us, he joined the sailing team (his first love) and Terrace Club. John left in 1959 and enlisted in the U.S. Coast Guard, serving in California. He later earned a bachelor's degree at Whittier College in 1962 and an MBA at Long Beach State University in 1969. He spent most of his career in partnership with his father, founding CCS Corp., which became a major factor in the coupon-redemption business. John became president in 1985.

He pursued cruising and racing sailing on the West Coast and Denmark (wife Karen's native home) while working and raising two sons. In 1992 John and Karen began a four-year sailing cruise of the Mediterranean. Exhilarated by that experience, in 1998 they undertook a multi-year tour of the Caribbean and the U.S. eastern coast, through the Intercoastal Waterway and to other ports.

Predeceased just months earlier by Karen, John died of a heart attack Jan. 13, 2021. Their two sons, families, and five grandchildren survive them.

Theron O. Worth Jr. '60

Raised in Texas, Toby graduated from St. John's School in Houston. He excelled in sports, especially as a junior tennis player, winning the tri-state under-15 championship. He was captain of the St. John's tennis team and voted all-league in football and basketball. With us, he played varsity tennis three years. He majored in economics, with a particular interest in finance, and joined Ivy.

After graduation Toby went straight to Wall Street, with National City Bank. In 1965 he earned an MBA in finance at New York University. After more than a decade with National City, he moved for a time to Irving Trust Co. before migrating to the brokerage side. He spent the balance of his career with Donaldson, Lufkin and Jenrette, then Bull & Bear (a mutual fund), and finally Smith Barney & Co.

After meeting Merwin Braxton on a blind date at Smith, they married in 1961 and raised their family of six children in Manhattan. As a parishioner of Brick Presbyterian Church there, Toby served as a deacon and elder during his 60-year membership.

Toby died of COVID-19 complications Jan. 19, 2021. He is survived by Merwin, their six children, and 13 grandchildren, to whom we send our sympathies.

THE CLASS OF 1961

Philip Leslie Johnson '61

Phil died peacefully in his sleep Jan. 7, 2021, at home in Rancho Palos Verdes, Calif.

Born and raised in Beloit, Wis., he came to us from Beloit Memorial High School. He entered Princeton under a full NROTC scholarship, never having laid eyes on the campus before arriving in September 1957. At Princeton he majored in sociology, ate at Dial, was a DJ for WPRB, and was a member of Orange Key and the Semper Fidelis Society, the latter reflecting his choosing the Marine Corps option of the NROTC. He was captain of the NROTC rifle team. Phil's senior-year roommates were Art Smith and George Brakeley, who described him as "a tough dude."

As a Marine helicopter and C-130 pilot, Phil served two tours in Vietnam and received multiple medals. After eight years of active duty in the Corps, he remained in the Reserve and retired as a full colonel, one of the Corps' most senior Black officers.

Following law school at USC and specializing in civil litigation with an emphasis on aviation defense, he practiced until 2018, having survived two tours of wartime duty, racism throughout his life, and four bouts with cancer.

Phil is survived by his wife of 41 years, Kathy; daughters Celeste and Niko; and a sister.

James Walter Klein '61

Jim died Feb. 15, 2021, of complications of Parkinson's disease after a short bout of COVID-19.

Born in Newark, N.J., he came to us from Wayne Township Senior High School. At Princeton he majored in electrical engineering, played football, was in the Judo Club, and took his meals at Dial Lodge. His senior-year roommates were Mike Harris, Dick Greminger, and Will Somers.

After earning a graduate certification in power-systems engineering at Purdue, Jim embarked on a career that embraced a number of disciplines — nuclear power, software technology, mergers and acquisitions, and ultimately management. For many years he was a vice president with American Cyanamid and later joined McKesson/HBOC and Atlantic Health System. Along the way he earned an executive MBA at Columbia. He was an active volunteer in the greater Wayne community, serving on the boards of two hospitals and several human-services organizations. His guitar was a constant presence, whether in church or elsewhere.

Jim's first marriage to Mary Lee ended in divorce. He is survived by his second wife, Guitty; his children, Ann '86 and Greg; one grandson; and two siblings.

Howard C. Sylvester Jr. '61 Ward died June 11, 2017, in Los Angeles. His having severed all ties with Princeton years ago, we did not learn of his death until now.

Born in New York City, he came to us from Scotch Plains High School in New Jersey. At Princeton he majored in English literature, ate at Court, was a member of the University Press Club, and was property manager for Triangle. He also was a rock 'n' roll DJ at WPRB, which foretold his career as a pivotal figure in the career of the Monkees in their live performances and TV series.

Ward worked as a vice president of Columbia Pictures in the early 1960s. His relationship with actor Davy Jones, ultimately leader of the Monkees, led to a career-long involvement with the group as their manager, producer of the TV series, and adviser. That aside, we know nothing of his career and life.

So far as we know, Ward was never in touch with the University or the class. He had no known survivors.

THE CLASS OF 1962

Edward A. Dixon '62

Sandy died Jan. 13, 2021.

Sandy entered our class from the Haverford School, where he was captain of the golf team and president of the photography club. At Princeton Sandy majored in philosophy, but his most notable activity was producing a film, for which he got class credit. A short fictional gothic story, it was shown at McCarter and garnered articles in *The Daily Princetonian* and *The New York Times*. Post graduation, Sandy purchased a restaurant in Charlottesville, Va., but opted out of that and entered the Air Force officer training school. Ending a successful tour, he enrolled in law school at George Washington University, was editor of the law review, and graduated with honors.

He practiced law for 13 years in Philadelphia, worked as a consultant with Security Guarantee Corp. of Baltimore, and was recipient of a service award from the Pennsylvania Land Title Association.

In retirement he and his wife moved to Beaufort, S.C., and fell in love with the area, where he acquired a passion for sailing and croquet.

Sandy is survived by his wife, Peggy Cortright; children Thomas, Abigail, Marion, and Meghan; and nine grandchildren. The class extends its condolences to all.

THE CLASS OF 1964

John H. Raubitschek '64

John died Jan. 29, 2021, in Midlothian, Va. He had lived in an assisted-living facility since 2017, and the isolation induced by COVID-19 appears to have contributed to his rapid decline over the past year.

John was born and grew up in Princeton, son of Princeton classics professor A.E. Raubitschek and Isabelle Raubitschek, a Latin teacher at Miss Fine's School. Before entering Princeton, John attended Georgetown Prep in Rockville, Md. At Princeton he majored in chemistry and was a member of Key and Seal Club.

Soon after graduation, John joined the U.S. Patent and Trademark Office, while attending Georgetown Law School, where

he earned a law degree in 1969. Combining his knowledge of chemistry with his legal training, he served 45 years as a patent and intellectual-property attorney in several federal agencies. He considered his most important achievement to have been the primary drafter of implementing legislation of the Bayh-Dole Act of 1980 and the 2000 Technology Transfer Commercialization Act on patenting inventions by government employees. He regularly served Princeton on the DC Alumni Schools Committee and enjoyed interviewing prospective students.

John is survived by his son, Jeffrey; daughter, Tamara Pringle; and three grandchildren. During the Class of '64's 50th reunion in 2014, he was especially happy to visit the Institute for Advanced Study, which had brought his father to Princeton from his native Vienna in 1938, months after the Nazi Anschluss.

THE CLASS OF 1968

Lewis S. Coonley Jr. '68

Kirk died Nov. 27, 2020, in Colorado Springs, Colo., of hairy cell leukemia at age 74.

He was born in Troy, N.Y., and attended St. George's School in Middletown, R.I., where he learned sailing. At Princeton Kirk majored in geological engineering and was active in junior varsity hockey, the Glee Club, and the *Princeton Engineer.* He graduated *cum laude.* Kirk ate at Terrace and was a member of Alpha Phi Omega. He earned a master's degreee in sanitary engineering from UNC-Chapel Hill, where he met Linda Murphy and married her in 1970.

He served in the Army MSC from 1970 to 1976. He was a consulting engineer at Burns & McDonnell in Kansas City, Mo., then a civil and special projects engineer for the city of Overland Park, Kan., retiring in 2008, but working part time for Affinis Corp. until 2011. In retirement, he was a dedicated AARP tax aide volunteer.

Kirk's travels included all 50 states, Guam, Puerto Rico, Canada, the Rhine River, England, and Scotland. The family loved its vacation home in Colorado, where Kirk pursued his passion for mountain hiking.

Kirk is survived by his wife of 50 years, Linda; daughter Jana Blake; son Daniel; four grandchildren; and sister Leah Westmoreland. To them, the class extends its profound sympathies.

Brian E. Cooper '68

Brian died Jan. 17, 2021, in New Bern, N.C., at the age of 74.

He was born Sept. 2, 1946, in Bad Kissingen, Germany. He attended Sewanhaka High in Floral Park, N.Y., where he participated in band, soccer, and the Latin Club. At Princeton Brian

majored in history and was active in Chapel Choir and Glee Club, and was co-editor of the Whig-Clio bicentennial publication. Brian ate at Terrace and roomed with Dennis Jones and Donald Fineberg his senior year.

After Princeton he earned a master's degree in Middle Eastern studies at Michigan. Among the many places Brian worked were the U.S. Department of Agriculture, the Port Authority of New York and New Jersey, and in public relations for companies including St. Regis Paper Co., Treadway Inns, Harcourt Brace Jovanovich publishers, and Hill & Knowlton Strategies. He had a passion for the history and culture of the British Isles, and in 1988 published a book, *The Irish-American Almanac and Green Pages.*

Brian is survived by his sister, Sally Wyman, and her husband Charles; his niece, Katherine Wyman-Grothem; and nephew David Wyman. To them, the class extends its sympathies.

THE CLASS OF 1974

Douglas Krakauer '74

Doug died Nov. 6, 2020, after struggling with several illnesses.

Doug transferred to Princeton after spending one year at Colgate University. He was active in the Vietnam antiwar movement at Princeton and was a member of Tower Club. A lifelong struggle with bipolar disorder — a little-understood disease at the time — was also part of his undergraduate years.

After graduating in 1974, Doug was accepted at Rutgers Robert Wood Johnson Medical School in Piscataway, N.J., but continued to suffer bouts of illness. He eventually found work at Health Products Research while becoming a devoted hackathon participant and served on the board of a state agency in Hackensack, N.J., that helped homeless people with disabilities. Throughout his struggles, Princeton remained a beacon for Doug. He never missed Reunions and many class events.

The class extends its sympathies to his survivors: his mother, Beverly; and his brother, Thomas.

THE CLASS OF 1975

Robert Scott Merrifield '75

Bob died peacefully in his sleep Nov. 30, 2020, in Los Alamitos, Calif.

A graduate of the Nichols School in Buffalo, N.Y., Bob played on Princeton's freshman soccer team and was a sports photographer for *The Daily Princetonian.* He majored in psychology and was a member of Cap and Gown.

After graduation Bob pursued freelance photography for two years before earning a master's degree in media technology at the University of Texas, Austin. There he met Debbie Fielder; they married, moved to the Los Angeles area, and raised two children.

Bob became a broadcast studio engineer for several large media companies and conglomerates. In 1992 he bought a Los Alamitos-based independent security and access-control business, which he sold to key employees in 2017.

For 35 years Bob was an adjunct professor in media arts at Los Angeles Valley College. One of his students subsequently hired Bob to do freelance assignments for ABC News, a third occupation he enjoyed. In 2017 Bob took over writing the Class of 1942's PAW Class Notes after the death of his father, D. Bruce Merrifield '42.

Bob is survived by his two children, Matthew and Amanda; his mother, Paula; his brothers, Bruce '72 and Marshall '82; and his sister-in-law, Virginia Russell Merrifield '84.

THE CLASS OF 1976

Barbara Ilene Adler '76

Ilene died Dec. 24, 2020, in New York of pulmonary hypertension.

Ilene came to Princeton from Bridgewater-Raritan (N.J.) High School East. Freshman year she roomed with Kristin McKeehan and sophomore year with Jeanne Spinner and Brooks Rogers.

Following her sophomore year, Ilene transferred to the University of California, Berkeley, where she earned a bachelor's degree in social sciences. Two years later she enrolled in the summer program at the Fletcher School at Tufts, where her life took an unforeseen and harrowing trajectory. She described it in the Oct. 22, 1997, issue of the *Princeton Alumni Weekly:* "Mental illness has become my longtime companion." In her e-book *Read My Mind* she wrote, "By 25, I had a major psychiatric diagnosis and had seen the inside of locked wards in three different states."

For years Ilene's effort to find high-quality care from the mental-health profession was marked by repeated disappointment until a transformative meeting with a new therapist. Ken became an indispensable teacher, guide, and friend during the final 25 years of Ilene's life.

She earned a master's degree in English as a Second Language (ESL) from Hunter College. Some years later, Ilene began teaching English to Japanese students at the Tenri Cultural Institute in Greenwich Village. The last seven years of Ilene's life were focused on her Japanese students and interaction with their community, where she attained the title Sensei (teacher).

Ilene was predeceased by her parents, Alice and Howard Adler '47. She is survived by her sisters, Joan Laura Adler and Heidi Adler-Spinella; and her niece, Julia Spinella.

David C. Villa '76

David died Feb. 13, 2021, of cancer in Madison, Wis. He was executive director and chief investment officer at the State of Wisconsin Investment Board. The governor of Wisconsin, Tony Evers, wrote, "David provided visionary leadership and the strategic direction to forge a stronger and more certain future for thousands of Wisconsin retirees."

Born in Albuquerque, N.M., David coxswained for lightweight rowing, sang second tenor in the Nassoons, joined Cap and Gown, and majored in economics. Roommate Neil Hauck recalls David's "robust head of hair and diabolical mustache" that earned him the nickname "Pancho." David went on to earn a master's degree in Latin American studies at Stanford and an MBA at Northwestern.

In 1991 he was recruited by Brinson Partners, rising from performance director to operations manager to client-relationship manager to asset-allocation analyst. His colleague Mike Jacobs found his "mastery at all those disciplines" to be remarkable, showcasing David's "wide range of knowledge."

We share our loss with David's daughter, Elena; and his wife, Jane, who wrote, "He had the grit, ability, and laser focus on his goals that have allowed Princeton graduates to make this world a much better place."

THE CLASS OF 1977

Serene K. Nakano '77

Serene died Jan. 24, 2021.

At Princeton she majored in art and archaeology and wrote her senior thesis on "French Pottery and Porcelain." She earned a law degree at Fordham University.

Serene was an attorney who worked for the federal government for more than 30 years, serving in many capacities. Her last years were spent working as a general attorney at the U.S. Trustee Program in New York City. Her colleagues remember her for her friendliness and bright personality, as well as her love of eating the varied foods available in New York — from goat roti to stewed honeycomb tripe. All of them commented with respect on her abilities and professionalism.

Serene is survived by her husband, Russell Bixler.

THE CLASS OF 1978

John C. MacGuire '78

John died peacefully Feb. 7, 2021, after a life of intense interest in the physical world, science, and the improvement of America's defense capacity. He had a ready smile and hearty laugh, and treasured his Princeton memories and friendships.

Growing up in Casper, Wyo., John came to love adventure. He helped his father prevent their Douglas A-26 from crash landing by Hole-in-the-Wall when smoke started to pour out of the console. Pop the canopy, flaps down, and full power! They sold the helicopter used in the Mexican prison break memorialized in the movie *Breakout*. His brother picked up the Unabomber hitchhiking.

In high school John won an Ames Research Institute internship, and he placed second in aerospace in the International Science Fair (meeting the Emperor of Japan) and sixth nationally in the Westinghouse Science Talent Search. Nicknamed "Cowboy," he joined Dial Lodge. After graduation he worked for McDonnell Douglas and Lockheed Martin Marietta.

Having modified a plane for international aerobatics, John was ranked top 10 globally in extreme aerobatic flying in the 1990s when a competition injury left him a T4 paraplegic. Always determined, John returned to work within three months and to the skies a year later. He won the award for aerospace achievement by handicapped people twice, and gave an inspirational presentation at our 25th-reunion talent show about continuing to fly (https://youtu.be/wIDl-qlei9M). Always the optimist, John got a Tesla Model X fitted with a device to load his wheelchair behind the driver's seat last year.

Condolences to John's wife, Anne Jeffery; and siblings Patricia Nichols and Joe MacGuire.

THE CLASS OF 1979

Marianna TePaske Daly '79 Marianna died Jan. 25, 2021, after what she called her long "journey" with cancer. Gung-ho about Princeton, she majored in biology, played soccer, and was a proud member of Dial Lodge. Later, she served on the Alumni Schools Committee.

Marianna volunteered in Appalachia with the Jesuit Volunteer Corps and then returned to her native North Carolina to complete medical school and earn a master's in public health. She served the poor as a family physician in the Smoky Mountains, where she was known to make house calls. She also served as medical director of the county health department for almost 30 years, helmed programs addressing hepatitis C and substance abuse, and shaped the county's response to COVID-19. The county public health center is named in her honor.

After being diagnosed with cancer, she was thrilled to attend our 40th reunion with her roomies, Carol Meier, Susan Schindelar, and Anne Callahan Kracke. While Marianna's vocation was serving the rural poor, she said her "bestest job of all was being Mother" of her three children: Kegan (Stephanie), Colleen, and Erin Gray (Aaron).

The class sends its condolences to her entire family and all of her friends and colleagues.

THE CLASS OF 1990

Ronald Y. Chen '90

Ron was born Sept. 8, 1968. He died Jan. 5, 2021, of complications of a brain aneurysm. Ron had been a high school teacher in New Jersey, ESL teacher in Taiwan, and employee of Mill Road Acres in Latham, N.Y.

Ron graduated from Shaker High School in 1986. A multisport athlete excelling in track, soccer, football, and baseball, he was inducted into the SHS Athletic Hall of Fame. Ron continued his track career at Princeton, where he was voted team captain his senior year. In 2009 he earned a master's degree in general education from SUNY Buffalo.

From 1993 to 2008 Ron lived in Taiwan, teaching English, where he met his wife, Huang Hsing Hui. Together they operated the Princeton Language School in Taipei. They married in 1995 and had two sons, Jonathan and Jeremy. Ron moved back to the U.S. in 2008 so he could raise them in America.

Ron experienced an inoperable brain tumor in his 20s, but he persevered, enjoying running, bicycling, reading, and DIY projects. A devoted father, son, brother, uncle, and friend, he is survived by his parents, two sons, two older brothers, one nephew, one niece, and additional relatives in the U.S. and Taiwan.

THE CLASS OF 1999

Kevin George Gillett '99

Kevin died Feb. 15, 2021, of complications of a cardiac event.

Born in Rockledge, Fla., Kevin grew up fishing, playing basketball and golf, and fulfilling the role of big brother to his three younger sisters. He graduated from the Bolles School before earning a Princeton degree in computer science. Kevin was a member of Quadrangle Club and played varsity basketball for Coach Pete Carril on the team that beat UCLA in the 1996 NCAA tournament.

After college Kevin moved to California to work as an engineer, holding positions at Oracle, Amazon, Google, and Facebook, where he last served as engineering director. Technical-minded yet eloquent, passionate, and curious, he is remembered as a valued team member and mentor.

Kevin met his wife, Erin, on a blind date arranged by friends. A walk on the beach led to 21 wonderful years together, sharing passions that included basketball, the ocean, summers boating at Lake Tahoe and golfing at Pebble Beach (where they married in 2002) and their two children, Paedrin and Kingsley.

Kevin is survived by his wife and children, his parents, and three sisters. Memorial contributions may be made to: Princeton Men's

POST A REMEMBRANCE with a memorial at **paw.princeton.edu**

Basketball Program; Sacred Heart Schools, Atherton, Calif.; or at Oceana.org.

GRADUATE ALUMNI

James Bernhard Anderson *63

Jim died Jan. 14, 2021, in State College, Pa. He was 85.

Born Nov. 16, 1935, in Cleveland, Jim earned a bachelor's degree from the Pennsylvania State University in 1957, a master's degree from the University of Illinois in 1958, and a Ph.D. in chemical engineering from Princeton in 1963.

From 1958 to 1960 Jim was an engineer in petrochemical research and development with Shell Chemical Co. His academic career began on the chemical engineering faculty at Princeton and continued as a professor of engineering at Yale before moving to Penn State in 1974. From 1995 until he retired in 2014, he was the Evan Pugh Professor of Chemistry and Physics at Penn State.

Jim specialized in quantum chemistry by Monte Carlo methods and molecular dynamics of reactive collisions. He was a visiting professor at several universities in Great Britain, Italy, and Germany. A successful academic and inspiring mentor and teacher, his keen understanding of chemistry and physics combined with mathematical rigor allowed groundbreaking insights in his field of research.

Jim is survived by his wife, Nancy; his son, John; his daughters, Nancy and Christine; his twin brother, John; his sister, Louise; and seven grandchildren.

Philip Fullerton Howerton Jr. *63

Phil died Jan. 15, 2021, in Charlotte, N.C. He was 85.

Born Feb. 13, 1936, Phil earned a bachelor's degree in history from Davidson College, a master's in public policy from Princeton in 1963, and a law degree from the University of Virginia. He served as a captain in the Marines.

He practiced corporate law with Moore & Van Allen, opened a solo practice, joined a small firm partnership, and served as an assistant district attorney and assistant public defender. Phil found his cadence and skill as a litigator, often trying high-profile capital cases. For three decades he served on the District Court Bench in Mecklenburg County and as an emergency judge. He introduced North Carolina's first drug-treatment court and initiated the first DWI court in the country. Throughout his years on the bench he modeled practical and compassionate jurisprudence, and his selfless work with substance-abuse programs was widely recognized.

Phil mastered the art of woodworking, producing more than 130 pieces of original work and antique reproductions.

Phil's survivors include his wife of 31 years, Mary; children Philip and Ashley; and five grandchildren.

Stanley J. Michalak Jr. *67

Stanley died Jan. 2, 2021, in Lancaster, Pa., at age 82.

He was born in Reading, Pa. He completed his first year of college at Penn State and transferred to Albright College, earning a bachelor's degree in 1960.

Stanley served as a legislative assistant to Rep. George M. Rhodes (D-Pa.) before earning a Ph.D. in politics at Princeton in 1967. He taught international politics at Franklin and Marshall College (F&M) from 1967 to 2004. He held the Kunkel Professorship in Government, chaired the department from 1973 to 1976, and received the Lindbeck Award for Distinguished Teaching.

In his publications Stanley explored themes of power politics, competing conceptions of foreign policy, and the role of the United Nations. A visiting scholar at the Foreign Policy Research Institute and the University of California, Berkeley, he directed the Center for Liberal Arts and Society, which launched a federally funded Learn and Serve Program at F&M. Sometimes he taught multiple generations of the same family. The Michalak Commons at F&M was dedicated to honor him as an exceptional professor and mentor.

Stanley's survivors include his wife, Beverly; children Sarah and David; stepdaughters Kim, Terri, and Cheryl; and seven grandchildren.

Steven M. Lowenstein *72

Steven died May 31, 2020, of pancreatic cancer at the age of 75.

Born in 1945 in Washington Heights, N.Y., he was a distinguished scholar of Jewish history and accomplished social worker. He earned a bachelor's degree from City College in 1966 and earned a Ph.D. from Princeton in 1972.

After teaching at Columbia University and Monmouth College, and working as a researcher at two institutes in New York, in 1978 he began a 30-year career at American Jewish University in Los Angeles, where he was Isadore Levine Professor of Jewish History and dean of the college. He wrote of a number of scholarly works, and his *The Jewish Cultural Tapestry: International Jewish Folk Traditions* won the National Jewish Book Award.

When Steven retired from academia, he pursued a master's degree in social work and became a social worker on Skid Row. A collector of human stories, which he reconstructed with extraordinary skill and sensitivity, he lived a life that was complete with family and friends, scholarship and accomplishments, love and tradition. He taught others, cared for others, and gave to others.

Predeceased by his wife, Marilyn, he is survived by children Ruth and Kenneth and nine grandchildren.

Jane Warren *74

Jane died Jan. 5, 2021, in Lexington, Mass. She was 75.

Born Jan. 30, 1945, in Philadelphia, Jane earned her bachelor's degree and master's degree in zoology from the University of Michigan. In 1974 she earned a Ph.D. in biology from Princeton.

In the Boston area her career started with lab work on fruit flies, bacteriophages, and slime molds and developed to take a broader perspective on public health. As director of science at the Health Effects Institute, she guided research on the effects of air pollution on health. Jane worked with researchers across the United States and around the world to advance scientific understanding in the field and aid policymakers in making evidence-based decisions.

After retirement Jane exercised her passion for conserving native plants and ecosystems. She created a haven in her yard for pollinators and birds by replacing invasive species with native plants. Extending her advocacy to the local community, she served on the Lexington Conservation Commission, wrote articles on native plants for the *Lexington Minuteman,* and organized nature walks for Citizens for Lexington Conservation.

Jane is survived by her husband of 53 years, Wayne; and daughters Linda '97 and Molly.

Yuan Sophie Liu *07

Yuan died Jan. 20, 2021, in San Diego after a brave battle with breast cancer. She was 41.

She was born in Tianjin, China, attended Peking University, came to the U.S. in 2000 when she was a junior, and earned a bachelor's degree in physics from the California Institute of Technology in 2002. Yuan came to Princeton to study computational neuroscience, and earned a Ph.D. in physics in 2007. After Princeton she joined the Salk Institute as a postdoctoral fellow. From 2011 to 2021 she worked as a data scientist at FICO and Experian.

At Princeton Yuan served as vice president of the Association of Chinese Students and Scholars and wrote the first "Princeton Life Guide for Chinese students," which will help students for generations.

Yuan traveled widely. She visited 47 countries and went scuba diving in many places. She loved reading, exploring the deepest thoughts about life, the world, and spiritual understanding. A productive writer, she wrote about travel, neuroscience, physics, and psychology. Her blogs attracted thousands of followers and inspired many more.

Yuan is survived by her husband, De Cai; children Apollo and Athena; and parents Honglu Liu and Weiguang Fan.

Graduate memorials are prepared by the APGA.

*Undergraduate memorials appear for Elbridge R. Graef '41 *42 and Marcus P. Knowlton '51 *58.*

Classifieds

For Rent

Europe

Italy/Todi: Luxurious 8BR, 7.5BA villa, amazing views, infinity pool, olives, lavender, grapes, vegetable garden, housekeeper included, cook available, A/C, Wi-Fi. Discount for Princetonians. Photos/prices/availability: www.luxuryvillatodi.com, p'11.

Provence: Delightful stone farmhouse facing Roman theater, 5 bedrooms, pool, market town. Frenchfarmhouse.com

Worldwide

Timeshare Rentals By Owner: Affordable, luxurious 1-6BR weekly timeshare rentals available at renowned resorts in the world's most popular destinations. www.sellmytimesharenow.com/timeshare-rentals/

United States Northeast

Stone Harbor, NJ: Beachfront, 4BR, upscale. 570-430-3639, Stoneharborbeachhouses.com, radams150@aol.com

Stone Harbor, NJ: www.Bayberrybeachhouse.com, Great for families/reunions/weddings/covid getaways. p'18.

Bridgehampton, NY: Charming 3BR, 2.5 bath home, pool, walk to town/train, bike to beach. Available August 1–Labor Day. 917-446-3605, bill@thedailyfinq.com

United States Southeast

Naples: Renovated 2BR, 2BA, sleeps 4. Walk to beach/town. bksuomi@gmail.com

United States West

Big Sky Montana: Charming 4 BR log home on 20 acres beautifully furnished, spectacular views, Big Sky sunsets, skiing, hiking, fishing and golfing within 5 minutes. Close to Yellowstone National Park and Bozeman. Enjoyment all 4 seasons. 610-937-0529. janegriffith655@gmail.com, s'67.

Park City/Deer Valley, Utah: 3 BR ski-out condominium in Upper Deer Valley. Newly remodeled, hot tub, beautiful views, available all seasons. Reasonable rates. 937-825-4137 or jmkolodzik@gmail.com, p'12 p'21.

Santa Barbara, CA: Charming and sunny 3-bedroom home, 1/2 block from ocean, pool, gardens, study, handcrafted details, fireplaces. Available late August to mid-December, every autumn. watkinsmarym@gmail.com, '72.

Tours/Expeditions

Expert-led cultural tours: archaeology/food/walking in Britain, Croatia, Greece, Ireland, Italy and Turkey. Gulet cruises and charters. www.petersommer.com

International Travel

CHILE, Northern Patagonia

Huge 2,500sf villas @ 5-star Eco resort. 44,000 private acres with 17 untouched miles of Pacific Oceanfront. 20 min. from Puerto Montt International airport. Private helicopter, fly fishing, hiking, kayaking, horse riding, ATV trails, spa, masseuse, boating, penguins, sea lions, pumas. All inclusive. $1,475 nightly/pp. Terms, see **www.hotelmarimari.com**.

Educational Services

SAT/ACT & ISEE/SSAT Tutor: Robert Kohen, Ph.D., Harvard and Columbia grad, provides individualized tutoring for the SAT/ACT and ISEE/SSAT. 212.658.0834; robertkohen@koheneducationalservices.com; www.koheneducationalservices.com

Publications

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Traveler, Scholar, Soldier, Spy

By Elyse Graham '07

In June 1918, an exploding shell ripped apart the right side of William Eddy 1917 *1921, who was fighting with the Marines in a muddy wood in northern France. Thirteen operations later, Eddy was in such bad shape that the physician for a homebound ship tried to turn him away, saying, "He'll never make it across the ocean." The 6-foot Eddy weighed 108 pounds when he arrived in Brooklyn; he spent the next year in a naval hospital. He wrote to his father, "It is a real question what we will do after I leave the hospital (probably next fall) as you know I will be a cripple all my life. There will be something I can do, I know."

After he left the hospital — with a limp he would keep for the rest of his life — Eddy returned to Princeton to become a scholar, earning a Ph.D. in literature with a dissertation on *Gulliver's Travels*. Perhaps a specialty in travel literature was inevitable: The son of American missionaries in Syria, Eddy grew up speaking Arabic and learned at a young age how to move between worlds. After stints at the American University in Cairo and Dartmouth College, he became the president of Hobart and William Smith Colleges, one of 11 Princetonians who led universities at the time. He hated administrative work, however, and soon rejoined the military to escape it.

Eddy found a métier less politically hostile and murkily plotted than administration: spycraft. Some of his activities are still classified; we know that he helped to manage Research and Analysis, a branch of the Office of Strategic Services (OSS), the predecessor to the CIA, that employed university researchers. In 1941, he led an OSS team that quietly planned an invasion of North Africa should the United States join the Allies. "We had not then entered the war," a journalist later said, "and until Dec. 7, 1941, Col. Eddy was doing things for which the Germans would have shot him, and properly could have done so under international law, if they had known of them." Eddy recalled that team members feared betrayal even by themselves: "Before the Allied landing on the coast of North Africa on Nov. 8, 1942, the handful of us who knew the date and place of the landings were terrified lest we might talk in our sleep."

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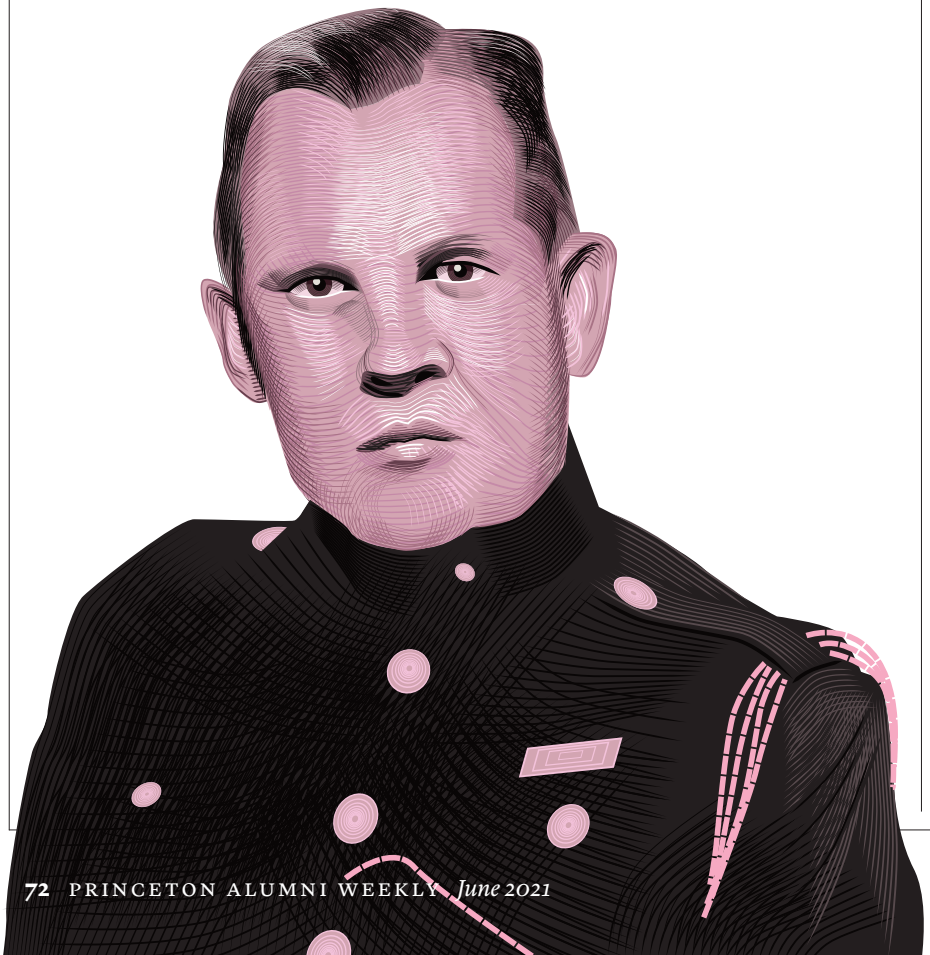
In 1945, Eddy was the lone interpreter at a historic meeting, on a Navy ship in the Suez Canal, between President Franklin Roosevelt and King Ibn Saud of Saudi Arabia. Eddy interpreted differences of custom, as well: telling the king that his retinue must limit itself to a dozen worthies and servants; telling the president to "expect the party to double in size before the king embarked, because I knew what competition there would be among the princes and others to accompany the king"; directing the ship's navigator to give the compass direction of Mecca at prayer hours; stopping sailors from walking on the deck between Mecca and the Muslims at prayer; and stopping civilians unfamiliar with Navy ships "from making coffee on charcoal burners over the dynamite." Two of the king's sons badgered Eddy into letting them sneak below decks at night to watch the scandalous Hollywood movies that the sailors screened.

The president, who was paralyzed, used a wheelchair while meeting the king; the king, who could not climb stairs due to an old injury, walked with assistance while meeting the president. Eddy, who once wondered what he could do given his own injury, noted in a memoir of the event that these two powerful men bonded over their handicaps. Roosevelt gave Ibn Saud one of his wheelchairs as a gift.

At the battle that almost killed Eddy, his sergeant, Dan Daly, shouted a line that is still famous today: "C'mon, you sons of bitches, do you want to live forever?" Though Eddy did not live forever, he managed to pack four or five lives into a single lifetime.



Daniel Hertzberg

Kindred Spirits Have a Way of Reuniting – Even After Years Apart

Andreas Prindl and Deborah Robbins grew up together, spending long childhood summers in northern Michigan where their parents had adjacent cabins on the lake. Then their paths diverged, but they and their families always remained in touch. Today, they share an active life filled with friendships, culture, and travel.

Andy graduated from Princeton University in 1960, where he majored in German, French, and Italian, a choice that proved to be very useful during his long and illustrious career in international banking. Most of his professional life was spent overseas, first in Japan and then for many years in London. His passion for travel and books led him to write and publish five books focused on the literary heritage of places he knew and loved.

Deborah, too, enjoyed a happy professional career, earning a master's degree in library science and working as a librarian. Later, her love of music led to a rewarding career as a school music teacher. She has always been interested in biking and, as with almost everything she does, she took that to the next level by cycling across the entire North American continent from Boston to Vancouver.

Princeton Reunions

In 2015, Andy's multinational life included a trip to Princeton University for a major Reunion. He knew that he would find Deborah in town; she had lived there for years as part of the communities associated with the Center for Communications Research and the Princeton Junior School. They learned that their connection to each other was still strong.

"We discovered that we had the same passions and interests – travel, books, languages, music – and having both lost our spouses, we decided to combine our lives."

Their new life together needed a new home.They wanted to live in a well-located community, with a diverse group of active and intellectually engaged residents, with easy access to cultural events and fine dining… and with stress-free home ownership offered by a well-managed condominium. In 2019 they found that community at **Princeton Windrows.**

One of the attractions of Princeton Windrows that resonated with them was the impressive library which includes shelves of books by resident authors. Andy's books are now displayed there. Living with others who also love books offers him opportunities to serve as a presenter at the weekly "Wednesday at Windrows" lecture series.

He has been known to transform himself into Henry James, delivering monologues in character. He and Deborah also enjoy the movies, art exhibitions, and concerts that are a regular part of life at Windrows.

Hitting the Right Notes

Deborah and Andy love music as much as they do books. They fill their beautiful apartment with the sounds of their daily harpsichord and recorder duets. They enjoy attending Princeton Symphony Orchestra concerts in the Windrows living room as well as live jazz evenings in the Pub.

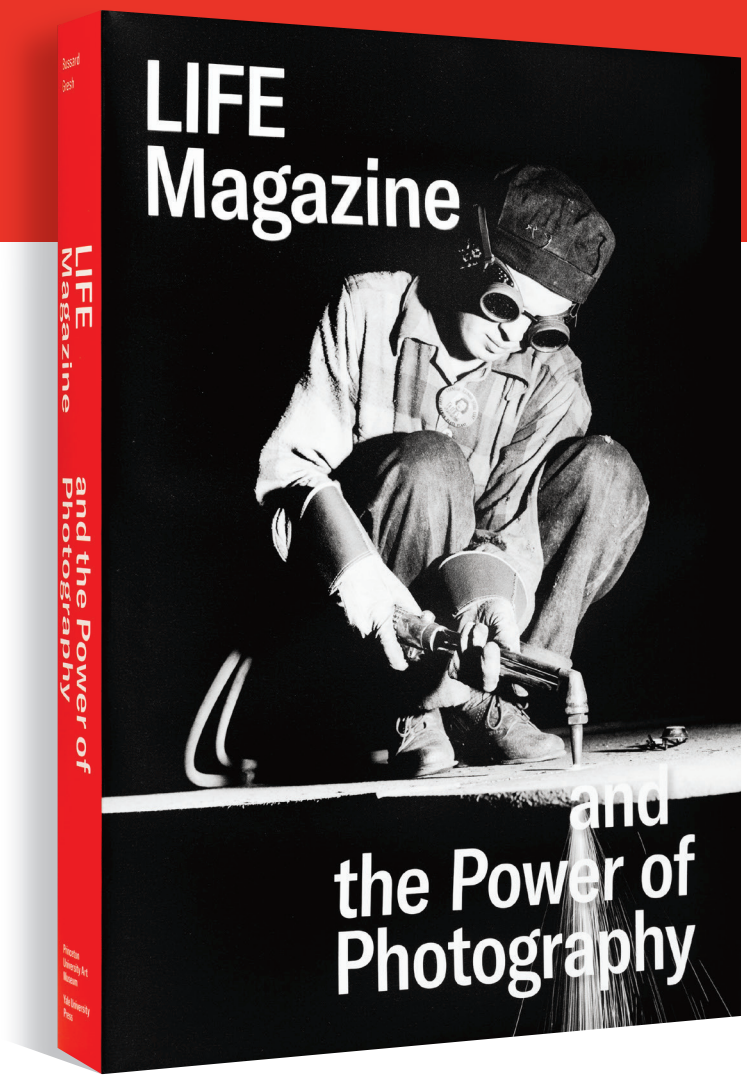
But neither Deborah nor Andy would be content with a sedentary life, however rich it might be in cultural events. Both of them enjoy all the physical activities that Princeton Windrows offers: swimming (Andy teaches a water exercise class), exercising in the gym, tai chi and yoga, tennis, pickleball, and walking and biking along Lake Carnegie.

"Princeton Windrows has everything we could have wanted, with the added benefit of new friends who also like travel, books, music, outdoor activities, and a fine dinner – plus a glass or two of good wine."

Living among fellow Princeton University alumni and retired professors and staff, as well as an internationally diverse group of interesting neighbors, has made their experience truly special. As we emerge from the pandemic, these two kindred spirits will surely be jet-setting around the globe again. When it is time to head home, the beauty, security, and community of Princeton Windrows will be right here waiting.

We are pleased to announce

that *Life Magazine and the Power of Photography*, published in conjunction with the exhibition of the same name, has won the prestigious Alfred H. Barr Jr. Award, presented by the College Art Association of America.



The first comprehensive consideration of *Life*'s groundbreaking and influential contribution to the history of photography

Edited by Katherine A. Bussard, Peter C. Bunnell Curator of Photography, Princeton University Art Museum; and Kristen Gresh, Estrellita and Yousuf Karsh Senior Curator of Photographs, Museum of Fine Arts, Boston

This is the second year in a row that a Princeton University Art Museum catalogue has won the Barr Award. Last year's prize went to *Nature's Nation: American Art and Environment*.

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