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PREVIEW

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STUDIES UPDATE

# PRINCETON ALUMNI WEEKLY

## THE ENGINEER

Mother Nature, meet  
Frances Arnold '79



OCTOBER 22, 2014  
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# PRINCETON ALUMNI WEEKLY

An editorially independent magazine by alumni for alumni since 1900



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Football team of 1869, page 15

### The Cherokee Chief

William Potter Ross 1842 worked to keep his people united after their ordeal on the Trail of Tears.

By *W. Barksdale Maynard '88*

### 20 Evolution Gets an Assist

Creating new proteins in her California lab, Frances Arnold '79 shows you *can* improve on Mother Nature.

By *Mark F. Bernstein '83*

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## PAW.PRINCETON.EDU



**Football Pioneers**  
Read biographies of the alumni who represented Princeton in college football's first season.



**Behind the Scenes**  
View images from Theatre Intime's production of *Red*, a play about Mark Rothko.



**Witness to History**  
Despite his role in the nation's founding Oliver Ellsworth 1766 is mostly forgotten.



**Prime-Time Players**  
Listen to Cordaro Rodriguez '08 and Sons of Serendip, *America's Got Talent* finalists.



**All That Jazz**  
Dick Snedeker '51 recalls a favorite campus band in the new episode of PAW Tracks.

Top: Eli Nathan k'90; from left: Eli Nathan k'90; Aleka Gürel '15; Wikipedia; courtesy Sons of Serendip; Class of 1951; Reminiscences of Times Past

# Our Culture of Continuous Improvement

The senior thesis is iconic — a rite of passage that links today's students to generations of Princetonians. Yet, like all great Princeton traditions, the thesis not only endures, it lives, grows, and changes. We recently took steps to enhance the thesis experience, spurred by practices of peer review that undergird the quality of American higher education.

In 2013-14, Princeton successfully completed our decennial reaccreditation effort through the Middle States Commission on Higher Education, an independent organization recognized by the federal government to assess institutions ranging from community colleges to research universities. Leading institutions sometimes regard accreditation as nothing more than a periodic burden — rather akin to undergoing an IRS audit. But, if approached constructively, reaccreditation offers an opportunity for peer review that reinforces a great university's culture of continuous improvement.

Our multiyear Middle States compliance process required intensive work from many across campus to address questions about whether we are meeting our educational goals and how we assess student learning. The work was spearheaded by a steering committee of faculty and administrators led by Deputy Dean of the College Clayton Marsh and Professor Michael Jennings from the Department of German, with superb support from Associate Dean of the College Elizabeth Colagiuri.



Senior thesis workshops are sources of “structure, solidarity, caffeine, pizza, and chocolate.”

A major element of the process was a thorough self-study of Princeton's internationalization initiatives, which culminated in the steering committee issuing a report last February with numerous recommendations. These include piloting a new semester-long study-abroad program featuring clusters of courses taught by Princeton faculty from different departments, as well as expanding global internship opportunities. This report (available at [www.princeton.edu/strategicplan/reports](http://www.princeton.edu/strategicplan/reports)) will inform our campus-wide strategic planning process and help guide our thinking about the essential role of internationalization in Princeton's educational mission.

The reaccreditation process also moved us to think deeply about the capstone of undergraduate education at the University. When asked how we assess student learning, we pointed (as we have done for generations) to the senior thesis — independent research demonstrating the skills that students develop through working intimately with faculty in our distinctive model of liberal arts education. As debates

rage throughout higher education about how to assess student achievement and progress, Princeton's senior thesis is a model vehicle for both catalyzing and assessing students' intellectual and personal growth.

The Middle States accreditors wanted to learn more about the thesis, particularly about how the writing and evaluation process is structured, how we convey standards and evaluative criteria to students, and how we ensure that feedback from students is taken into account by our 34 academic departments. In addressing those questions, we took the opportunity to ask ourselves how we could do better.

Dean Marsh and Director of Undergraduate Research Pascale Poussart collaborated with department chairs and representatives, as well as the Princeton Writing Program staff, to develop a new set of written guidelines for senior theses. Many departments had written resources to help students through the thesis process, but few had a comprehensive guide.

These excellent new guides, which rolled out last fall on the dean's website and on departmental websites, have been extremely well received by students. While the guides convey individual departments' perspectives and personalities, they share many elements, such as information on key dates and deadlines, campus resources, submission guidelines, grading standards, and the objectives, importance, and challenges of independent work.

“The essence of scholarly research is the creation of new knowledge through careful, systematic study,” the Department of Chemistry's guide says. “Thus your thesis work is expected to make a recognizable and novel contribution to the body of knowledge in your field. Note that this definition transcends all fields, and defines the common element in Princeton theses on topics as diverse as religion and chemistry.”

The Department of Slavic Languages and Literatures' guide advises students, “Writing a thesis — or a doctoral dissertation, or a book — is like life as a whole. There are ups and downs, but the more of yourself that you put into it, the more meaningful and satisfying the experience will be.”

Each guide has customized information, including an overview of the field and departmental resources. The Department of Comparative Literature's guide, for example, stresses the vital features of senior thesis workshops: “These workshops are coordinated with departmental deadlines, and have specific goals such as bibliographic management, writing the prospectus, and revising drafts. They generally provide structure, solidarity, caffeine, pizza, and chocolate.”

Faculty members reviewed the guides prior to publication, helping to stimulate important conversations within each department about the thesis process. The creation of the guides also has led some departments to rethink their junior seminars that introduce students to research methods in their fields, which may lead to some beneficial curricular changes.

These guides are in my view — to borrow a phrase often used to describe the thesis itself — “quintessentially Princeton.” They are a wonderful example, along with our internationalization initiatives, of Princeton building upon our defining traditions to strengthen our commitment to teaching and research and give our students the best possible educational experience.

# Inbox

## DOWNSIDERS OF GRADING POLICY

My wife and I both read “About-Face on Grading?” (On the Campus, Sept. 17) with concern about the faculty committee’s finding that there was no evidence the grading policy has harmed graduates in seeking a job or applying to graduate school. My wife is an attorney at a Fortune 500 company who previously had worked at a large U.S. law firm, and I am an associate professor of surgery at UCLA. In our experiences, it’s been absolutely clear that grade deflation hurts applicants. Whether it’s law firms hiring attorneys or faculty ranking medical students for residency positions, grades matter. Sure, we and everyone else think those reviewing résumés or transcripts should look at each institution’s grade distribution and weigh accordingly. But, in practice, this doesn’t happen. Applicants with higher GPAs tend to rank higher. A 3.7 GPA simply looks better than a 3.3 GPA when reading through hundreds of prospects’ files. This has been confirmed in a recent article by researchers from UC Berkeley and Harvard Business School.

Like it or not, a school that deflates grades using “grading targets,” another name for curves, hurts its students’ chances. And anyone who ever has taken a class with a curve knows that a curve also fosters negative competition for the top marks. While everyone would like to see a uniform grading standard among different institutions, it simply isn’t going to happen. Do Princeton students

the favor: Dump the curve, and let the professors give out the marks they think the students deserve.

**Jay Granzow ’93**  
*Los Angeles, Calif.*

## One of the best parts of Princeton was learning from peers — which, in my opinion, is stifled with the grade-deflation policy.

I urge the University to end the grade-deflation policy. In 2011, when my daughter was considering Princeton as her No. 1 choice, we attended an information session in Greenwich, Conn., where she had the opportunity to meet with alumni and admission representatives. I asked if the grade-deflation policy would be continued, since it appeared from our multiple visits to the school that it was creating an overly competitive culture among the student body. While the admission representatives commended the policy, the alumni who had students at Princeton overwhelmingly responded negatively and solidified our perspective.

As a result, she did not even apply to Princeton because she wanted a school that fostered a collaborative and supportive approach to academics, rather than one that was cutthroat. One of the best parts of Princeton was learning from peers — which, in my opinion, is stifled

## FROM PAW'S PAGES: 11/28/47

Sir:

AS I was unable to attend the Yale game, which, as it passed before my eyes, seemed incredible. With the utmost clarity, I witnessed the entire Yale game through television in an apartment in New York City, and heard simultaneously a play-by-play description, the cheering, the band music between the halves, and saw at the end the mad scramble and the leveling of the goal posts. It was an unique experience and represents a triumph of modern science. The thrill which accompanied it was only second to that which must have been felt by all Princetonians who sat in the stadium that memorable afternoon.

ALEXANDER T. MARTIN '09

with the grade-deflation policy. Please end it.

**Christine Adams Osborn ’87**  
*Darien, Conn.*

After reading the recent “Report from the Ad Hoc Committee to Review Policies Regarding Assessment and Grading,” I was most saddened to read that a “common theme was that the grading policy harms the spirit of collaboration,” illustrated by this passage:

“I have experience[d] multiple negative effects from the grading policy. Because of grade deflation it has been extremely hard to find any kind of collaborative environment in any department and class I have taken at Princeton. Often even good friends of mine would refuse to explain simple concepts that I might have not understood in class for fear that I would do better than them. I have also heard from others about students actively sabotaging other students’ grades by giving them the wrong notes or telling them wrong information. Classes here often feel like shark tanks. If I had known about this, I very probably would have not attended Princeton despite it being a wonderful university otherwise.”

Such a shame! One of the nicest memories of my Class of 1975 days was seeing how quickly my classmates and I sloughed off our high school attitudes

## CATCHING UP @ PAW ONLINE

Ten years after its founding, the Princeton chapter of Engineers Without Borders is going strong, with community partnerships in three countries. To read about one of the group’s recent projects, the creation of a gravity-fed potable water system in La Pitajaya, Peru, visit [paw.princeton.edu](http://paw.princeton.edu).



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## Inbox

of competing over each one-hundredth-of-a-grade-point as we dived into a world of sharing the knowledge and concepts we came to learn, simply for the beauty of learning and applying new ideas and passions. And all this in an environment with only about 30 percent of grades being A's.

**Stewart A. Levin '75**

*Menlo Park, Calif.*

## UNDERSTANDING CONSCIOUSNESS

I had to chuckle when I read the five letters in the June 4 issue taking issue with Michael Graziano '89 \*96's theory of consciousness (feature, April 23). The usual suspects of the anti-reductionist brigade come out in force whenever there is a serious threat to the "ghost in the machine" ... and all of the extended ramifications of such a belief.

The idea that consciousness is simply a form of observation of cognitive activity originating inside the brain, involving the same integrative mechanisms we use to interpret externally originating sensations through the lens of momentary schemas and long-term worldview to construct perceptions, is compelling to an increasing number of people in the world, and for very good reason.

While the realm of "mystery" in neuroscience is not yet obliterated completely, and may not be in our lifetimes, the progress made in the last few decades pushing in at those boundaries encourages the notion that it may well

happen in a finite period of time.

In any case, it seems to me the burden of proof should fall more heavily on those who propose an unnecessary and ad hoc addition to the baseline explanation, and thus ultimately would fall prey to Occam's razor.

Understanding consciousness empirically never can erode the exquisite beauty of an amazing sunset, or the transcendence of an inspired artistic performance, or the towering scale of a majestic mountain, or anything else that causes us to pay attention to this amazing universe we inhabit. Rather, it would be yet another realization of the profundity of human existence.

Fear not understanding, but instead rush headlong into it with joy and celebration.

**Dan Krimm '78**

*Menlo Park, Calif.*

## RESPECT FOR WOMEN'S WRITING

"Literature's Glass Ceiling," the story of Jennifer Weiner '91's campaign to have novels written by women taken seriously as literature (cover story, Sept. 17), contains a rather startling assertion that is not supported by a single shred of meaningful evidence. Weiner states that "women authors, much more than men, are put in the explicit position of having to decide, 'Do I want respect and reviews, or do I want readers?'" She goes on to state: "There are novels, and then there are 'women's novels.' There is no male equivalent for chick lit."

## YOUR COMMENTS ONLINE

### Taking to Twitter on Jennifer Weiner '91



Several PAW readers used Twitter to respond to the Sept. 17 cover story on Jennifer Weiner '91.

"Terrific article in the @Princeton Alumni Weekly about @jenniferweiner," wrote novelist Jodi Picoult '87 (@jodipicoult). "You make a great cover girl!"

"Awesome article in Princeton alumni mag!" tweeted Melanie Bernstein '93 (@melanieAB2). "How come no mention of your time at Nassau Weekly? :)"

"I love that @jenniferweiner is putting her neck on the line for women writers," added Caroline James '05 (@carolineamory).

Writer Curtis Sittenfeld (@csittenfeld)

tweeted: "Lucky for me, you don't have to have gotten into Princeton to read this cover story about @jenniferweiner!"



FROM THE EDITOR

## Shoes and Respect

It is true that, with few exceptions, male authors generally do not set out to appeal to a single gender of readers, whereas many women authors, including quite explicitly Weiner herself, do precisely that. As your article states, “Weiner’s novels feature modern women coping with the struggles of contemporary family life ... who overcome these hurdles to find their happy ending.” Mirroring her own life experiences, many of her featured characters are “plus-size women.” Let’s be honest; do you know any men who would find this formula appealing? And is it fair to suggest that because we do not, we are part of a vast, male-led conspiracy to deprive women authors of the respect they so richly deserve?

If you’ll excuse me now, I must complete preparation of a review for my men’s book club, where we will discuss *Bel Canto*, a marvelous novel by one of Ms. Weiner’s contemporaries, Ann Patchett, and a winner of the PEN/Faulkner Award for Excellence in Fiction. By the way, three of the four most recent winners of this award were novels written by women, suggesting that there are women authors who have earned respect, reviews, and readers.

**Houghton Huthcheson ’68**  
**Bellaire, Texas**

One can only hope that your cover photo of a barefoot woman on a chaise with the headline: “Respect, Please! Jennifer Weiner ’91 is fighting for women’s novels” was intended to be disrespectful, degrading, anti-feminist, or maybe ironic. The inside picture of another barefoot woman author begs the question: Could we not also have them pregnant? If your self-awareness is so slight that this slipped by “by accident,” as my grandchildren might phrase it, get thee to some consciousness-raising! Really, would you have shown a barefoot “serious” male author on the cover?

Respect, please, PAW editors.  
**Brian Williams ’72**  
**Jupiter, Fla.**

Mary Ann Evans, in her day, felt very much the same as Jennifer Weiner about the low esteem in which critics and

Your devoted PAW editors often try to predict how readers will respond to particular articles and images, particularly those involving race, gender, or politics. Sometimes we’re completely wrong: We agonize over the use of a phrase that ends up prompting not even a peep, or readers find disrespect in something we thought innocuous.

Such was the case with the photograph of novelist Jennifer Weiner ’91 on the cover of our Sept. 17 issue. Was the image disrespectful and sexist because it showed Weiner — an advocate for women’s novels — sitting casually, sans shoes?

That wasn’t our intention. But is barefoot bad? Do shoes suggest seriousness? Going barefoot once carried “a whiff of impropriety: You had to have a good excuse ... to let your toes hang out,” wrote Lauren Collins ’02 in *The New Yorker* in 2006. She reported on a string of business leaders and writers who had kicked off their shoes for photographers, including *60 Minutes* icon Mike Wallace, pictured in *The New York Times* with “pterodactyl-like” feet. Wallace said the photo fascinated people because it conflicted with the image they had of him being “tough, uptight, abrasive, [and] confrontational.”

Others prefer that feet remain shod. Penn State professor Janet Lyon, writing in *Footnotes: On Shoes*, has argued that shoes — “the fabulous shoe, at least” — should be seen as a “thrilling response to the ambivalence of modernity, to its relentless shuffle between liberation and disciplinization.” (I have never viewed my shoes that way, but maybe that’s because I don’t wear heels.)

As I write this, the day’s *Times* shows a photograph of the writer Philip Roth sitting in a reading chair, holding a book. Tan pants. Gray sweater. One foot is pictured, but where his shoe normally would be, there is only a white athletic sock. He looks comfy and confident. Weiner did, too. — *Marilyn H. Marks ’86*

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## Inbox

reviewers held the multitude of women novelists then writing. In hopes of being taken seriously, she changed her name to George Eliot. Perhaps Ms. Weiner, just as an experiment to test her theories, should publish her next novel under a masculine *nom de plume*.

**William Park '51**  
*Santa Cruz, Calif.*

### SERVICE AS A MISSION

I was immensely pleased to see President

Eisgruber '83's writing (President's Page, April 23) include phrases such as "service of the common good," "the service of humanity," "careers and lives connected to a larger purpose," and "How can Princeton enable more undergraduate students to contribute to the world?"

I was both pleased and a bit startled — startled because I've been dismayed in recent years to sense that Princeton seemed happy to churn out vast numbers of corporate lawyers, hedge-fund

managers, and bond salesmen. Landing a job with Goldman Sachs, making rich people richer, and making yourself rich in the process seemed with dizzying frequency to be the endpoint of a Princeton education.

President Eisgruber and Justice Sonia Sotomayor '76 have revived my hopes for Princeton. It's a place, incidentally, that has been attended by my grandfather, father, uncle, cousins, and two sons.

**Steve McNamara '55**  
*Mill Valley, Calif.*

### ROLE MODELS FOR ALCOHOL USE

Your article on the proposed (now abandoned) plan for a campus pub (On the Campus, Sept. 17) noted that one of the goals was to "model the responsible use of alcohol." But how did Princeton plan to do that, when modeling the responsible use of alcohol involves having people in their late teenage years learn to integrate alcohol in their lives in a moderate, responsible way; having a glass of wine with dinner; or sharing a beer or two — but not six — with friends or a professor?

Modeling responsible behavior needs to be done when a person still is forming his or her habits; it can't be accomplished after a 21-year-old adult already has formed bad habits because he or she "learned to drink" in isolation from all the social forces — such as respected role models — who could have set a good example.

**Dan Grossman '85**  
*Atlanta, Ga.*

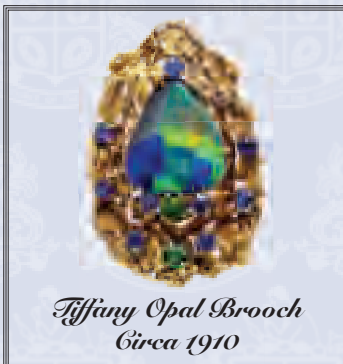
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# On the Campus

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Princeton's exploration of the brain is centered in the Princeton Neuroscience Institute, foreground, and Peretsman Scully Hall, which houses the Department of Psychology. Photograph by Ricardo Barros

# Bridging the Gap

## Report examines students' experiences as socioeconomic diversity increases

**W**hile students from all income groups are reporting high levels of satisfaction with their Princeton undergraduate experience, a new report found that lower-income students who enter from high schools with less-advanced college-preparatory courses may encounter more academic challenges and a tougher transition to college than their peers.

The findings confirm that lower-income students ultimately thrive on campus and achieve academic results comparable to other students who enter the University with similar academic credentials. However, the report also found that financial constraints can make lower-income students more likely to forgo some activities and feel less fully accepted on campus.

The report was prepared by a working group of faculty and staff. Last month, the University released a description of the group's findings and

### AMONG THE REPORT'S RECOMMENDATIONS

**Begin a scholars program for high-achieving, low-income students**

**Create a sophomore initiative to prepare all students for independent work**

**Consider an alternate grading system for freshman year**

**Include socioeconomic diversity in freshman-orientation diversity programs and freshman housing assignments**

**Ensure that panels during Families Weekend and Princeton Preview address concerns most pressing to less-prosperous parents**

recommendations, but not the report itself. Focus groups were held with 60 students from all income groups, including a high number of lower-income students, said Dean of the College Valerie Smith.

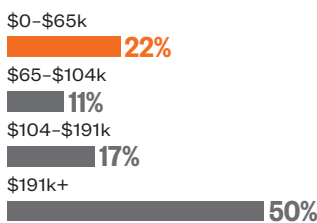
"Lower-income students who attended high schools that don't often send students to highly selective colleges and universities told us that the academic and social transitions can be challenging, especially in the first year," Smith said. "Also, they often have to figure out how to navigate the institution on their own, without the help of their families."

The working group made a number of recommendations, saying that many would benefit all students. The proposals were designed to create a more inclusive and supportive climate, increase the accessibility and variety of STEM (science, technology, engineering, and math) courses, and bridge the gap between Princeton and students' home communities.

The University has begun to introduce new programs to help students from all walks of life thrive on campus. Last month, the Hidden Minority Council, a group of first-generation students, organized an event called the

### REACHING OUT TO LOW-INCOME FAMILIES

The Class of 2018 includes a record **290 STUDENTS FROM LOW-INCOME BACKGROUNDS** (defined as the lower three quintiles of U.S. household income: less than \$65,000). That's **22 percent** of the class, up from 19.7 percent of freshmen defined as low-income a year ago and 10.6 percent a decade ago. The Class of '18 family income:



The percentage of **PELL-GRANT RECIPIENTS**, another measure of

socioeconomic diversity, also is increasing: from 7.2 percent of the freshman class 10 years ago to 14.5 percent last year and 18 percent this year.

"This is a real victory for Princeton," Dean of Admission Janet Rapelye said of the Pell numbers, "and we will redouble our efforts this year."

The share of the class from the **TOP 5 PERCENT OF INCOMES** — families earning more than \$191,000 — also increased slightly since last year, from 49 percent to 50 percent. "There was a slight squeeze in the middle," said Robin Moscato, director of undergraduate financial

aid, referring to families earning between \$104,000 and \$191,000.

Rapelye noted that 68 of this year's freshmen came to Princeton with assistance from **QUESTBRIDGE**, a nonprofit working to increase the number of low-income students at elite universities, up from 54 last year.

The University is putting special emphasis on **RECRUITING LOW- AND MIDDLE-INCOME STUDENTS** on fall visits to California's central valley and southern region and to the Rio Grande Valley in Texas, and financial-aid staff members

will accompany admission representatives for the first time on those trips to meet with students, parents, community organizations, and guidance counselors.

Princeton **RANKED NO. 34** in *The New York Times'* College Access Index, a new effort to measure top colleges' economic-diversity efforts based on Pell grants and the net price to low- and middle-income families. Moscato said that data used to calculate the index, including a "very restrictive definition" of students receiving financial aid, contributed to the University's position in the ranking. ♦ *By W.R.O.*



**“Lower-income students who attended high schools that don’t often send students to highly selective colleges and universities told us that the academic and social transitions can be challenging.”**

— Valerie Smith, dean of the college

“First-Gen Dinner” as a way for first-generation freshmen to meet with professors and administrators who were also the first in their families to attend college. About 80 students — or half the first-generation students in the freshman class — attended the dinner along with nine faculty members and administrators.

“When you’re a first-gen and you’re the one paving the way, you don’t even know the right questions to ask,” said Vice President for Campus Life Cynthia Cherrey. “It helps students to learn that there are others here who understand what it means to be the first in their families to go to college.”

In the meantime, Princeton is moving forward with more programs based on the working group’s recommendations. Smith said the University is working to develop enhanced STEM courses in the Freshman Scholars Institute, a summer program that gives students an early opportunity to experience Princeton’s curriculum.

President Eisgruber ’83 said the report underscores the University’s commitment to level the playing field for students of all economic backgrounds, but there is still work to be done.

“Some of the recommendations would require additional consideration before we could decide whether to proceed with them, and in some cases we would need to raise the necessary funds,” Eisgruber said. ♦ By A.W.

Q&A: SMITHA HANEEF

## Thousands of Diners, Millions of Meals

Smitha Haneef, the new executive director of Campus Dining, manages all of Princeton’s residential and retail dining operations, which serve 3 million meals a year. Haneef has worked at five-star hotels in India, run her own restaurant, and developed food programs for companies such as Cisco and Disney. She spoke with PAW soon after the start of classes.

### How do you cater to what Princeton students want?

The millennial preference is ... keep me nourished on-the-go. It’s a very demanding lifestyle with longer days, and through the day, they want to have an exciting meal, which means giving them daily nourishment but exposing them to different trends.

### How can Dining Services increase food sustainability?

By thinking about how we can educate our front-line team members about emerging methods. The second piece is informing the community about our current practices and asking them to be actively engaged.

We are evaluating strategic partnerships. We have invited Chef Barton Seaver, who is currently working at the Harvard School of Public Health, developing sustainable-seafood programs and food systems. There’s an

assessment he has done; we are taking that assessment and trying to see how we can partner with him.

### How about other plans?

The second initiative is health and wellness. We want to focus on power foods and performance-based foods. What are the ingredients that would stimulate brain cells? What if I placed walnuts, avocados, and salmon next to each other and paired them right before study time and exams?

The third piece is innovation. College Road West — this building is used as an administrative office, but we are transforming this place and calling it an “innovation center.” We’re outfitting it with a test kitchen. Take, for example, hemp seeds. The hemp seed is a superfood. How can we take it and interpret it in a culinary environment?

### How will Dining Services’ new food truck be used?

For this year, we will be using the food truck for catering events. We have developed two cuisine concepts: One is all-American — grass-fed hamburgers with french fries and milkshakes. The second is global tacos with different meats, veggies, sauces, and toppings beyond the traditional Mexican-style. ♦

*Interview conducted and condensed by Ellis Liang ’15*

**“The millennial preference is ... keep me nourished on-the-go.”**

— Smitha Haneef,  
executive director,  
Campus Dining





Assistant professor  
Beth Lew-Williams  
will teach a spring  
course on Asian  
American history.

# Signs of Progress

## With strong support from alumni, Asian American studies takes shape

Last summer, when Princeton's oldest living Asian American graduate, Yeiichi "Kelly" Kuwayama '40, passed away, his widow suggested that memorial donations go to the University's Asian American studies endowment fund.

To Evan Kratzer '16, co-president of Princeton's Asian American Students Association (AASA), the suggestion movingly demonstrated Princeton's progress toward a long-fought goal: the establishment of an Asian American studies program.

After a decades-long struggle that included a 36-hour student sit-in at Nassau Hall in 1995, advocates of Asian American studies say they are cautiously optimistic. A junior professor of Asian American history has joined the faculty this fall, and English and African American studies professor Anne Cheng '85, whose introductory Asian American studies course drew 99 undergraduates last spring, is chairing a multi-department search for a senior scholar in Asian American studies.

"The University is very serious

about its commitment to expanding the presence of Asian American studies on campus," said Dean of the College Valerie Smith.

Next March, Princeton will gather academics from across the country to discuss how best to configure the field's institutional presence, said history professor Hendrik Hartog, director of the American studies program. With strong backing from the Asian American Alumni Association of Princeton (A4P), the University has raised more than \$265,000 to endow teaching, research, and programming in Asian American studies.

In a symbolic show of commitment, President Eisgruber '83 contributed to the fund. In his first 15 months in office,

**"We want to produce students who will become global citizens ... they have to understand the complexity of racial dynamics within the United States."**

— Professor Anne Cheng '85

Eisgruber has been "outspoken, positive, supporting us, and that really helps a lot," said A4P co-chair Douglas Chin '83.

"We're very optimistic about a lot of the progress that the University has made thus far, and we think that a good sense of momentum is building," Kratzer said. "On the other hand, of course, we still want to see more."

In a March 2013 report, AASA urged the University to establish a certificate program in Asian American studies, but whether Princeton will take that approach remains undecided, faculty say. One possibility is placing the field inside the American studies certificate program, either as a subfield of its own or as one part of a broader subfield in race, ethnicity, or migration studies.

"We want to produce students who will become global citizens," said Cheng, who takes over next year as director of American studies. "And to do that, they have to understand the complexity of racial dynamics within the United States."

Advocates of Asian American studies point to the hiring of Beth Lew-Williams, assistant professor of history, as the most tangible sign of progress, although they say more faculty hiring must follow if Princeton is to create a sustainable program mirroring those in place at dozens of other universities.

Lew-Williams, who specializes in the 19th century, studies America's exclusion of the Chinese — including her own great-grandfather, who came to the United States at a time when Chinese workers officially were forbidden to immigrate.

More than one in five Princeton undergraduates identifies as Asian American, and in Lew-Williams' experience, students often enroll in Asian American history classes seeking a context for their own family stories.

"My job is to take that personal interest and to intellectualize it — make it go beyond their own search for identity to be able to think critically about how race and migration have formed America," she said. The introduction to Asian American history that Lew-Williams will teach next spring begins with the Boston Tea Party — because, she said, "that tea is of Asian descent." ♦ By Deborah Yaffe

Sameer A. Khan

# Doctoral Diversity

## Graduate School's Ph.D. preview event sends a message to prospective students

**S**ixty prospective Ph.D. students from across the country visited the University Sept. 19 as part of the Graduate School's efforts to attract a more diverse student body.

"We have to make Princeton feel more accessible to people who may otherwise opt out or choose not to apply," said Diana Hill Mitchell, assistant dean for academic affairs and diversity at the Graduate School. "It's critical that we do that outreach to students who otherwise don't see Princeton as an accessible place, whether it's due to perceptions of how their groups have fared historically or due to lower income."

The event was open to anyone interested in attending Princeton, but was geared toward minority students

**"We have to make Princeton feel more accessible to people who may otherwise opt out or choose not to apply."**

— Diana Hill Mitchell, assistant dean, the Graduate School

and women interested in science and engineering. Mitchell said about 20 students received financial assistance from the University to attend.

"This is very helpful for an African American like myself to actually see that Princeton does believe in diversity," said Ola Williams, a Cornell alumnus interested in the politics program. "To see them talk about it and have an open dialogue with us — I think it's fantastic.

I'm applying to a couple of other schools, and they're not doing this."

According to Mitchell, preview events that emphasize diversity are unusual for Ph.D. candidates. She said inviting prospective students to meet with deans, professors, and current students was essential to help make campus feel more familiar to students before they begin the application process.

According to University statistics, underrepresented U.S. minorities made up 5.2 percent of applicants to the Graduate School last year and 7.4 percent of those who enrolled this fall. In the natural sciences and engineering, 26.6 percent of applicants and 32.5 percent of those newly enrolled were women.

The Graduate School plans to monitor how many of the 60 attendees apply to Princeton, how many are admitted, and how many enroll next fall.

Several prospective students had to be turned away after the event filled up, and Mitchell said she hoped that another preview day could be scheduled for later this semester. ♦ By A.W.

"Being given the freedom and independence to manage my own time, that's My Hun."

— Ryan O'Gorman '17



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## Band on the Run

When the Princeton University Band flew home from the football team's opening game in San Diego Sept. 20, the men and women in plaid found a friendly face in the cockpit: United Airlines pilot Michael Niemann '90, a former band member. He's pictured above next to drum major Mary Gilstad '15. The flight assignment was a happy coincidence for Niemann, who met his wife, Carolyn Havens Niemann '89, when the two were in the band's trash-percussion section in 1986. ♦

## IN SHORT

After two years as dean of the School of Architecture, **ALEJANDRO ZAERA-POLO** has stepped down "to devote greater attention to his research and other professional activities," the University said in a statement. Former dean Stanley T. Allen '88 will serve as acting dean and will chair the search committee. The University said that Zaera-Polo, a practicing architect, remains on the faculty.

Six rapes were reported in the University's **ANNUAL CRIME REPORT** for 2013, including five on campus and one in a non-campus building. The University said one case, reported by the victim to Public Safety, was referred to the county prosecutor's office; in the other cases, the victims did not wish to pursue the incidents criminally. The report also cites four incidents of domestic violence and one of stalking.

The University said that an

Courtesy Carolyn Havens Niemann '89



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additional 17 reports of sex offenses had been received by confidential counselors, noting that such cases cannot be investigated by either campus police or University officials unless the victim gives permission to disclose details. Reports to confidential counselors are not required by federal law to be included in campus crime statistics. In prior years, the University counted information shared with confidential counselors in its crime totals, listing 20 forcible sex offenses for 2012 and 2011.

The latest crime report also listed 41 burglaries and four cases of motor-vehicle theft.

**RAMONA ROMERO**, general counsel of the U.S. Department of Agriculture since 2011, will become the University's general counsel Dec. 1. Romero was president of the Hispanic National Bar Association in 2008 and 2009, testifying on behalf of Sonia Sotomayor '76 during her nomination as a Supreme Court justice.

Actress **MERYL STREEP** came to Princeton Sept. 19 for an unusual event — a marriage of music and literature around the theme of death. The one-time performance at Richardson Auditorium interspersed Streeep reading excerpts from Philip Roth's 2006 novel *Everyman* with the Takács String Quartet performing Franz Schubert's "Death and the Maiden" and works by Arvo Pärt. Roth was among the audience of 900.



**IN MEMORIAM**  
**WILLIAM H. SURBER JR. \*48**, who twice served as electrical engineering department chair and was best known

for his work on automatic control systems and computers, died Aug. 27 in East Windsor, N.J. He was 94. Surber was a physics instructor at Princeton from 1941 to 1943, when he joined the Navy. He later returned to Princeton, earning a master's degree and Ph.D. in electrical engineering in 1948 and joining the faculty that year. Surber was the first recipient of the electrical engineering department's Walter Curtis Johnson Prize for Teaching Excellence. He retired in 1987. ♦

# Anxieties Over Housing

## As Lakeside project faces further delays, graduate students present concerns



**GSG president Sean Edington, left, at a meeting about Lakeside concerns.**

**H**undreds of graduate students will face another delay in moving into the University's 15-building Lakeside housing complex, leading some to worry about academic and financial obligations.

On Sept. 19, Princeton sent an email to graduate students to inform them that because of "unforeseen circumstances in the construction process," move-in could not take place until December 2014 or January 2015. John Ziegler, director of real estate development, said harsh winter conditions that slowed construction, and the resolution of "general code issues," contributed to the delays. Move-in originally was expected to take place in the summer of 2014.

Princeton has offered several housing

options to students, with many being placed in the Butler and Stanworth apartments. Those students have been promised two months of rent forgiveness and moving assistance. But some grad students say that they'd like more compensation to reflect the latest delay. "Because I had to put my things in storage, I am paying an extra \$289 a month," said Pam Mueller, a fifth-year psychology Ph.D. student who is living in temporary housing in Stanworth.

Graduate Student Government president Sean Edington said other concerns include flexibility in move-in dates to avoid conflicts with academic obligations, ensuring that maintenance issues at Butler and Stanworth are addressed, and obtaining monthly updates on the Lakeside project.

Students aired their frustrations at a special GSG meeting Sept. 24. Edington estimated that more than 100 grad students had reached out to the GSG with concerns in the 10 days following the University's announcement.

Assistant Vice President for University Services Andrew Kane said that the University is working with the GSG to make moving to Lakeside "as smooth and supported as possible" and has agreed to send out a monthly update, beginning this month, but that he doesn't foresee additional compensation for students in temporary housing. ♦ *By A.W.*



### In Downtown Princeton!

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FOOTBALL

# Must-See Matchup

## Early favorites Princeton and Harvard vie for an edge in the Ivy title race

In a rivalry that has been filled with unpredictable reversals, one thing is certain: This year's Princeton-Harvard game will not be decided by a Roman Wilson '14 touchdown catch. Wilson, the hero of wins against the Crimson in 2012 and 2013, graduated in June. Nearly any other outcome seems possible for the two teams, which have combined for more than 2,000 yards of offense in their last two meetings.

"It's been just amazing to watch

**President Shirley Tilghman chided fans who had left the 2012 game at halftime: "You will never live it down."**

because of the fact that these teams are playing at such a high level," said Dan Loney, WPRB radio's play-by-play announcer, who has navigated the twists, turns, and touchdowns — 22, to be exact — of the last two Princeton-Harvard games. Loney compared the matchup to a Football Championship Subdivision playoff game, with crisp, dynamic offenses and few mistakes on either side.

The 2012 game featured Princeton's improbable, incomparable comeback, a 29-point fourth-quarter eruption that erased Harvard's 24-point advantage. Wilson made the decisive grab with 13 seconds left, snapping a five-game losing streak against the Crimson. At the Big Three bonfire a month later, President Shirley Tilghman chided fans who'd left

at halftime: "You will never live it down."

In the 2013 rematch at Harvard, the lead changed hands six times before the Tigers prevailed, 51-48, in their third overtime possession. Quarterback Quinn Epperly '15 set a school record with six touchdown passes in the game. The loss proved to be the only blemish in a 9-1 season for the Crimson. The Tigers went on to finish 8-2 and share the Ivy League title with Harvard.

This fall, voters selected Princeton as the favorite in the Ivy preseason media poll, with Harvard one point behind in second place. The Oct. 25 meeting at Princeton Stadium could provide new fireworks, if the season's early games are any indication. Crimson running backs Andrew Casten and Paul Stanton Jr. posted 100-yard games against Holy Cross and Brown, respectively. Harvard won both contests. For the Tigers, Epperly has picked up where he left off last year, leading his team with seven touchdowns — five rushing and two passing — in Princeton's first two games, a loss at San Diego and a win over Davidson. ♦ *By B.T.*



**Anthony Gaffney '16's long kick return helped to spark Princeton's memorable comeback against Harvard in 2012.**

Beverly Schaefer



## EXTRA POINT

## When It All Began: Research Sparks Quest To Find Princeton's Unknown Player

David Nathan '90



On Saturday, Nov. 6, 1869, 25 Princeton students arrived in New Brunswick to participate in what generally

is recognized as the first intercollegiate football game. With the ground rules set by the home team, Rutgers narrowly defeated Princeton in the legendary contest, while Princeton shut out Rutgers in a rematch at Old Nassau the following week. A third game was canceled when officials at both schools complained that “football” was proving too distracting to their students.

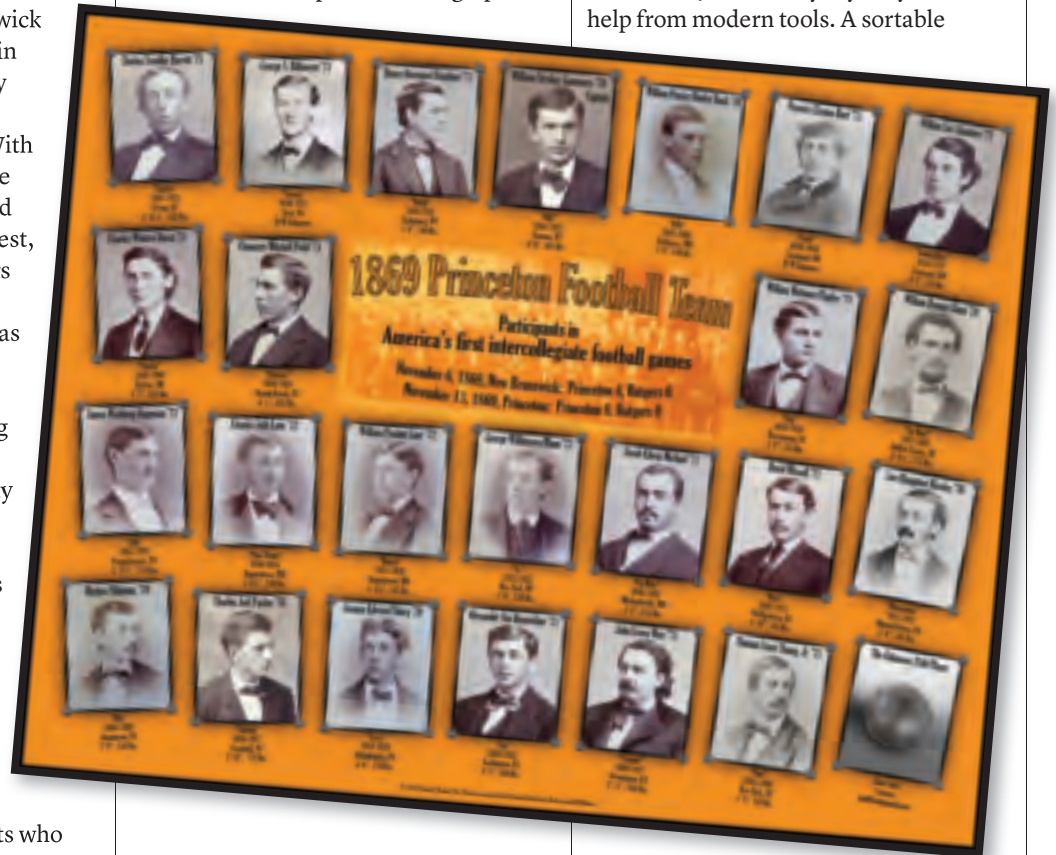
Despite the instant popularity of this new sport, few seemed to appreciate the historical significance of college football's first season: No official records were kept, though some players and spectators wrote detailed narratives of the action.

The 1869 rules put 25 men on the field for each team. History preserved the names of 27 Rutgers students who played in the 1869 season, but despite Old Nassau's passion for history and sports, a complete roster of the Princeton team never was compiled. In the early 1900s, there were at least five attempts to reconstruct a list of all the players, yielding only 19 to 23 names.

Hoping to fill this historical void, I cross-referenced the extant lists of Princeton players and identified 24 students. I soon discovered that Steven Greene, a Rutgers alumnus and early-football researcher, had independently confirmed my findings.

The Princeton team included some interesting men: “Tar Heel” Glenn 1870 fought for the Confederacy, James Hageman 1872 threw some of baseball's first curveballs, Alexander Van Rensselaer 1871 reached the finals in the first U.S. Open tennis tournament, and team

captain Will Gummere 1870 became chief justice of the New Jersey Supreme Court. Never-before published biographies



and photographs of all known 1869 Princeton football players are posted online at [paw.princeton.edu/1869football](http://paw.princeton.edu/1869football).

There remains at least one teammate who has yet to be identified — Princeton's “unknown player.” An extensive search through books, articles, school publications, and student records has come up dry.

Who could the missing man be? Looking at demographic trends among the 24 known teammates, one can narrow the list. For starters, he probably didn't look much like a modern football player. The median height of his 1869 teammates was 5 feet, 8 inches, and the median weight a mere 162 pounds.

All identified teammates belonged to the Classes of 1870–72 (predominantly juniors), they typically were superior students, and most teammates

participated in other intercollegiate sports. In fact, nearly all of the top baseball players were on the 1869 football team. So the trail of clues points toward an accomplished athlete and academically solid upperclassman of unremarkable stature.

Amateur sleuths may be able to solve this 19th-century mystery with help from modern tools. A sortable

**Above, David Nathan '90 located photos of 24 known players from the 1869 games.**

spreadsheet of data about all 327 students from the Classes of 1870–72 is also online at [paw.princeton.edu/1869football](http://paw.princeton.edu/1869football), along with my list of the most promising candidates. Or perhaps the identity of the unknown player is simply tucked away in some Princetonian's attic, written in a family memoir or alumnus' letter home. Join the search — and share your theories — at PAW Online. ♦

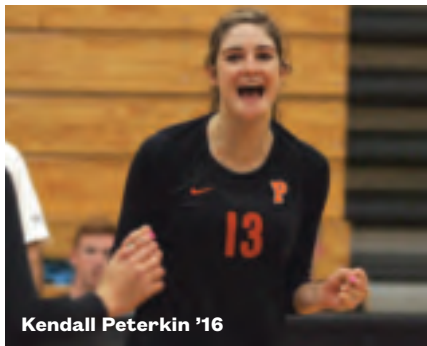
*David L. Nathan '90, a psychiatrist, educator, and writer, lives in Princeton, a short walk from the site of the second game of the 1869 football season.*

**READ MORE** about Princeton's first football players and Nathan's research at [paw.princeton.edu/1869football](http://paw.princeton.edu/1869football)

**SPORTS SHORTS**

The **WOMEN'S VOLLEYBALL** team has emphasized "serving aggressively to take other teams out of their element," according to middle blocker Nicole Kincade '15, and the strategy paid off in a 3-0 Ivy League-opening win over Penn Sept. 26.

Kendall Peterkin '16 served a match-high five aces, and Sarah Daschbach '16 led the team with 28 service points, including a 10-0 run in the first set and a 9-0 run in the second. Princeton improved to 6-5 for the season.



Kendall Peterkin '16

**MEN'S WATER POLO** continued its early-season dominance with wins over George Washington and Bucknell Sept. 28. The Tigers improved to 10-1 overall and 5-1 in conference games.

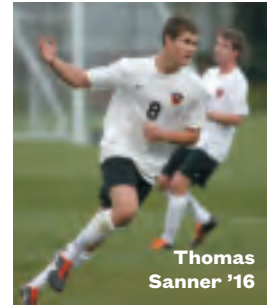
The **FIELD HOCKEY** team's struggles continued Sept. 28 when the Tigers lost at No. 12 Albany, 2-0. Princeton was 3-5 in its first eight matches, including a 2-0 start in the Ivy season.

In **WOMEN'S TENNIS**, Lindsay Graff '15 won the top singles flight at the Cissie Leary Invitational Sept. 14, defeating Penn's Sol Eskenazi in straight sets.

Former **WOMEN'S GOLF** standout Kelly Shon '14 shot a 2-under-par 70 in the final round to tie for 27th place in the Symetra Tour Championship, the final event of the season on the LPGA's minor-league circuit.

With six minutes remaining, Tyler Lussi '17 scored the lone goal in the **WOMEN'S SOCCER** game at Yale Sept. 27. Goalkeepers Darcy

Hargadon '15 and Hannah Winner '17 split time in the 1-0 win, Princeton's second shutout of the year.



Thomas Sanner '16

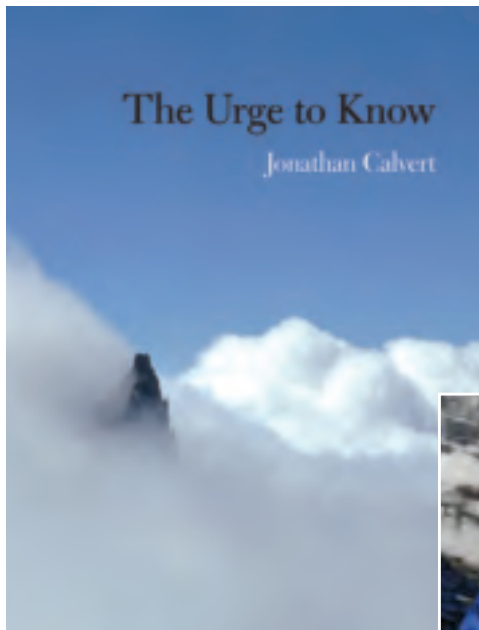
**MEN'S SOCCER** improved to 3-2-2 with back-to-back wins over Drexel and Binghamton Sept. 24 and 27. Thomas Sanner '16

scored a goal in each game.

**MEN'S HOCKEY** will open the season against Yale Oct. 31 in the Liberty Hockey Invitational at the Prudential Center in Newark, home of the NHL's New Jersey Devils. The game will be the 250th meeting between the two teams — and the first for new Tigers head coach Ron Fogarty. **WOMEN'S HOCKEY** begins its season with a pair of games at Penn State Oct. 26-27. *By Victoria Majchrzak '15 and B.T.*

 **READ MORE:** Princeton sports every Monday at [paw.princeton.edu](http://paw.princeton.edu)

Photos: Beverly Schaefer



**Perfect for the adventurous!**  
**THE URGE TO KNOW**

By Jonathan Calvert, Princeton '53

From Calvert's first sight of the Matterhorn, in 1953, he developed a lifelong passion for natural beauty and adventure. For well over 50 years Calvert climbed, trekked, sailed, kayaked, and dog sledged in wild places across the globe.

*The Urge to Know* is a record of his adventures told through memoir, journals and photographs. Calvert has climbed the world's most challenging mountains in Alaska,

Argentina, France, Switzerland, Austria, Kenya, Tanzania, Turkey, Russia, and Nepal. He has trekked in many of the same countries and Tibet, Mongolia, Bhutan, Sikkim, and Pakistan. He has kayaked in Greenland, Spitzbergen and the Antarctic. He made "the Shackleton Crossing" of South Georgia Island.

Jonathan C. Calvert, was born in Boston, and moved to San Antonio, TX, at an early age. He graduated from Princeton in 1953, majoring in history and received the American History Prize. Calvert worked

in the investments business in NYC and Chicago and many years in San Antonio.



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*Do not be afraid to fail. Because if you are, you will be afraid to risk. And if you are afraid to risk, then you will miss out on some of life's greatest experiences. --- Jonathan Calvert*

# Life of the Mind

## STEREOTYPES

# Mind the Gender Gap

## How the power of language may affect gender representation in academia

**W**hy are there relatively few women professors in physics, chemistry, and math? Work by Sarah-Jane Leslie '07, a professor of philosophy, shows that a key culprit may be a mindset that regards innate ability as essential to succeed in those fields — and a belief that women are less likely to have it.

“Cultural stereotypes often link men with a kind of raw, unteachable brilliance. Women’s success, in contrast, is often attributed to hard work,” explains Leslie. Popular culture has given us characters like Sherlock Holmes and the brilliant student Will in *Good Will Hunting*, but, Leslie says, there are far fewer examples of women “who have that special spark that can’t be matched.”

Leslie’s work is at the crossroads of philosophy, psychology, cognitive science, and linguistics. She began studying generalizations in language through a traditional philosophical lens, but quickly became more interested in how the human mind processes generic language, requiring a more interdisciplinary approach. She also strives to make philosophy accessible to a broader audience with a project called Philosophical Conversations, for which she conducts online video interviews with leading thinkers in the field.

In a 2012 study, Leslie and her collaborators at New York University introduced preschoolers to a fictional, socially diverse group called “Zarpies.” Children were read either generic statements such as “Zarpies love to sing” or specific statements such as “this Zarpie loves to sing.” The results were striking, Leslie says: Children who heard

the second statement saw each Zarpie as distinct. But those who heard the generic “Zarpies love to sing” were more likely to see all Zarpies as sharing societal traits. When a new trait later was introduced for one Zarpie — such as “this Zarpie can’t swim” — the children in this group were inclined to apply that trait to all

**“Cultural stereotypes often link men with a kind of raw, unteachable brilliance. Women’s success, in contrast, is often attributed to hard work.”**

Zarpies. They came to believe that Zarpies shared innate characteristics.

Next, Leslie wanted to examine how generalizations we make when discussing academic ability translate into preconceptions about success. Her research with colleagues at the University of Illinois, Otterbein University, and Princeton surveyed professors and graduate students across the country about whether they believed success in their field came from innate intellect or hard work. Preliminary results found a correlation between fields with few women — such as physics, math, and philosophy — and academics in those fields who believed that success required natural brilliance.

Understanding the effect and impact of generic language is critical, Leslie says. “If academic disciplines want to increase their female representation, they should pay special attention to the messages they send concerning what’s required for success.” ♦ *By Jessica Lander '10*



**Sarah-Jane Leslie '07 examines how generalizations we make when discussing academic ability translate into preconceptions about success.**

ENGINEERING

# A Car Without a Driver

## The self-driving automobile could hit roads by 2020, says Kornhauser \*71

Last April, Google announced that its self-driving electric cars have traveled about 700,000 miles on the open road, including thousands of miles on the streets near its headquarters in Mountain View, Calif., which are more difficult to navigate than highways. The cars detect pedestrians, read road signs, and even understand when a cyclist gestures to make a turn, according to Google.

Princeton has its own self-driving car project, led by Alain Kornhauser \*71, a

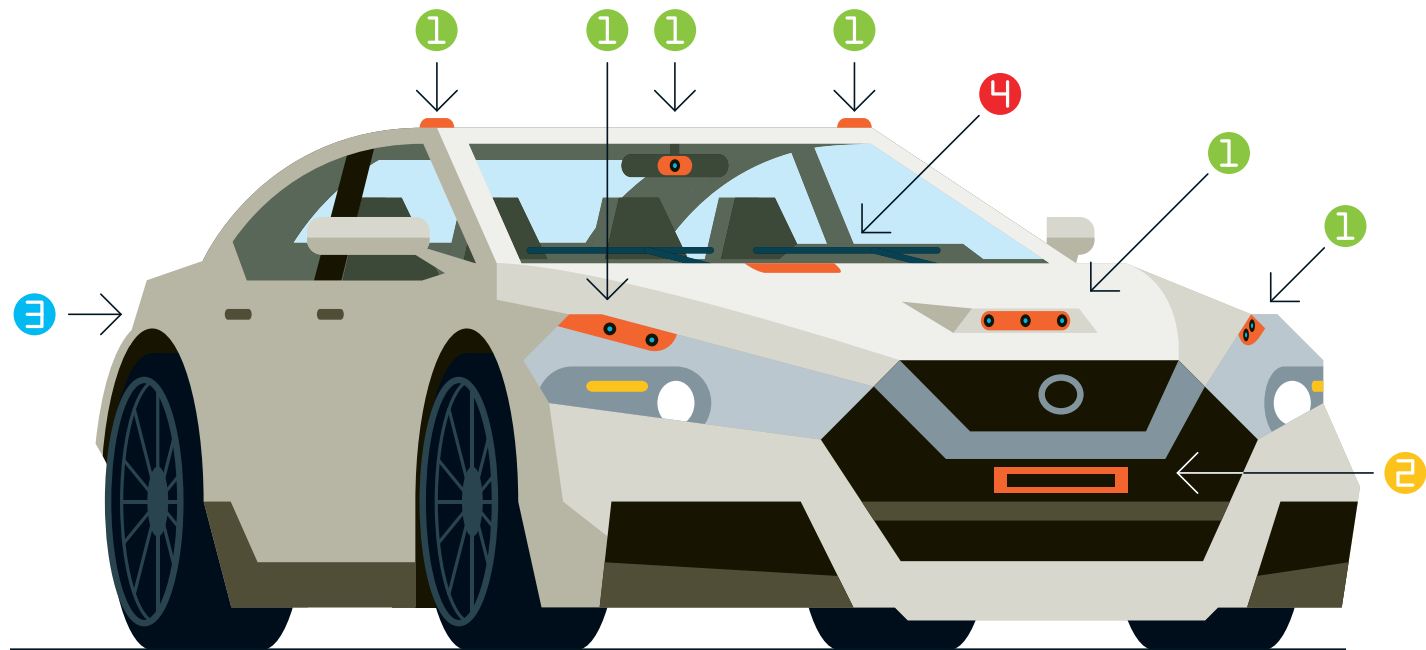


professor of operations research and financial engineering. His lab is developing a computer-vision system that uses six cameras to gather images of stationary and moving objects. Collision avoidance remains the most significant challenge for automated vehicles and requires more development, he says.

Under Kornhauser's guidance, Princeton undergraduates have been incorporating the technology into a fully autonomous car that has competed in the self-driving car-race challenges held by the U.S. Department of Defense, making it to the semifinal round in 2007. Kornhauser expects autonomous cars will be on the road by 2020 and commonplace by 2025: "This is going to transform cities and the way we live." ♦

By Anna Azvolinsky \*09

### THE CAR OF THE FUTURE? HERE ARE SOME IDEAS THAT KORNHAUSER IS WORKING ON



**1**  
Six cameras capture images every one-tenth of a second

**2**  
Radar helps with collision avoidance

**3**  
Sensors process the speed and position of all objects in view

**4**  
An inertial measurement unit tracks the car's speed, orientation, and gravitational forces

Illustration: L-Dopai; photo: Frank Wojciechowski

Q&amp;A: KEREN YARHI-MILO

# Intuition vs. Intelligence

The tools world leaders employ — and sometimes jettison — to assess foes

**W**hen world leaders fly thousands of miles to meet each other, they seek not only to discuss hot topics, but also to size each other up. Keren Yarhi-Milo, an assistant professor of politics and international affairs, contends that leaders rely heavily on such meetings to determine each others' intentions — and often ignore their own experts' evaluations.

In *Knowing the Adversary: Leaders, Intelligence, and Assessment of Intentions in International Relations*, Yarhi-Milo describes how leaders rely on “vivid” information — such as one-on-one meetings — while intelligence analysts focus on factors such as military capability. She examines the relationships between leaders during World War II and the Cold War, zeroing in on the presidencies of Jimmy Carter and Ronald Reagan. Yarhi-Milo's interest in the subject was sparked by her experience doing intelligence work during her service in the Israeli military before she came to the United States for college.

**What did you discover about how world leaders evaluate their adversaries?**

At the end of the day, leaders are human beings, and they are affected by their own intuition. So when they sit across the table from another person, they think of themselves as intelligence analysts, in a sense. They are looking, they are probing, they are sizing up the other guy. What I show in the book is sometimes that has more of an effect than intelligence reports.

Even in the context of allies, the personal relationship does have an impact on policy. Look at the relationship between President George W. Bush and Russian President Vladimir Putin, when Bush came out of a meeting and said he looked Putin in the eye and saw his soul. There are risks of using that method of

inferring intention — it's highly biased. But at the same time, leaders are aware that it's an opportunity.

**Describe the gap between the data that intelligence officials collect and the information that leaders value.**

The intelligence community has not done a very good job of explaining its way of thinking to policymakers. Decision-makers have strong intuitions and beliefs, and they treat the question of adversary intentions in a way that's more emotional, so it's hard for them

to be open to assessments from the intelligence community. There's this disconnect, and I think the first step to solving it is to acknowledge the biases.

**Can you give an example of a time when a leader disregarded information from intelligence analysts?**

During Reagan's second term, the U.S. intelligence community produced reports that indicated Russian leader Mikhail Gorbachev was not genuinely interested in cooperation with the United States, that his posture of accommodation was a ploy intended to give time for the Soviet Union to get more powerful. Reagan essentially ignored those assessments, and went on to establish strong personal ties with Gorbachev. ♦ *Interview conducted and condensed by Gabriel DeBenedetti '12*

**“At the end of the day, leaders are human beings, and they are affected by their own intuition. ... Sometimes that has more of an effect than intelligence reports.”**

— Keren Yarhi-Milo



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# THE CHEROKEE CHIEF FROM OLD NASSAU

*William Potter Ross 1842  
worked to unite his  
divided people and fought  
for their autonomy*

BY W. BARKSDALE MAYNARD '88

ONE SUNNY DAY LAST AUGUST, Principal Chief Bill John Baker gave the annual State of the Nation address on the Cherokee Courthouse lawn in Tahlequah, Okla. He began with a reference to what he called one of America's worst tragedies — the Trail of Tears, in which Southeastern American Indians were removed by U.S. troops at gunpoint.

“It was 175 years ago we arrived here in eastern Oklahoma and began our greatest chapter, building the largest, most advanced tribal government in the United States,” Baker said. “Our ancestors were pulled from their homes in the East, forced into stockades, and marched here to Indian Territory by a federal government that tried to brutally extinguish us. But in 1839, right here in Tahlequah, we reconstituted our government ... and re-created the commercial success we had in the Southeast.”

The Cherokee Nation survived and even prospered. A key figure in that story was Chief William Potter Ross 1842, one of the few Native Americans to attend Princeton in the 19th century and the first to graduate. Ross' portrait hangs in the Cherokee Nation Tribal Complex in Tahlequah today, where he is remembered for helping to heal schisms within the tribe and fighting tirelessly for the right of the Cherokee to govern themselves — a right not finally guaranteed until the 1970s.

“Ross argued for an arena of autonomy for Indian people within the United States,” says Frederick E. Hoxie, professor of history and American Indian studies at the University of Illinois. “He was a very sophisticated thinker and a man far ahead of his time.”

By 1820, the year Ross was born near Chattanooga, Tenn.,

the Cherokee of the Southeast had interacted with Anglo-Americans for generations, and intermarriage was common. Ross epitomized the “mixed-blood” Cherokee: Accustomed to trading with whites, they made up the leadership class. These Cherokee followed European fashions and rejected the old ways of tattooing the skin, shaving the head, wearing nose rings, and stretching one's ears with hoops.

Like many Cherokee, Ross was barely Indian at all by blood, no more than one-eighth; his father was a trader born in Scotland. What put Ross in a position of leadership was the fact that his mother's brother was John Ross, the formidable elected chief of the Cherokee Nation, who had a similar mixed background.

With his Scottish heritage, William Potter Ross was educated at Presbyterian schools and Lawrenceville Academy (he was salutatorian) before entering Princeton in 1838, one of many Southerners to attend in those antebellum days. Twelve members of the Ross family were enrolled at Lawrenceville around this time, and three went on to Princeton. William Potter Ross' brother, Robert D. Ross 1843, attended medical school at Penn and became a pioneering doctor among the Indians.

In the mind of John Ross, William's Princeton education was preparing him for eventual leadership of the tribe, and he paid the tuition when William's father could not. After 175 years, there are few clues as to what his undergraduate experience was like or whether he was regarded as an outsider. But the years Ross spent under the elms at Old Nassau were dark ones for the Cherokee. The tribe had been split on the question of



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whether to emigrate west, as the federal government wished it to do. John Ross opposed moving, but his rivals signed a treaty with the U.S. government that gave the Cherokee new lands in Indian Territory, today's Oklahoma. John Ross' followers were sent west on the Trail of Tears, where his wife was among the estimated 4,000 Cherokee to perish.

As a freshman at Princeton, William Potter Ross received reports of the hellish trek, fuming to his uncle that God ought to curse the United States "with some calamity for their cruelty." Upon graduation, he traveled to Indian Territory to join his beleaguered people, then deeply split by factions and ruthless infighting. Avoiding these disputes, Ross taught school for a year, then became clerk of the tribal senate and, in 1844, editor of the newspaper *The Cherokee Advocate*. (*The Advocate* succeeded the *Cherokee Phoenix*, published in Georgia prior to removal by Elias Boudinot, who had changed his name from Buck Watie to honor a New Jerseyman who advocated Indian rights: Princeton trustee Elias Boudinot.)

The Cherokee respected Ross' literary and oratorical gifts as honed at Princeton. By 1847 he was representing the Cherokee in front of the U.S. Congress in Washington, the first of a long series of visits there. Far from fomenting revenge against the federal government for its brutal treatment of his tribe, Ross settled near the U.S. Army base at Fort Gibson, Indian Territory, where he ran a profitable store. John Ross lived comfortably nearby. "William Potter Ross had witnessed what we would call ethnic cleansing or even genocide," says Kevin Gover '78, director of the National Museum of the American Indian in Washington, D.C., and a member of the Pawnee tribe of Oklahoma. "But as he got older, he must have realized that bitterness and aggressive rhetoric weren't going to improve the situation."

The Rosses bore little resemblance to the fiery Native American activists of the 1970s — they wore no "Indian" garb, attended Protestant churches, and lived to the fullest the life of the Southern planter. John Ross' pillared mansion lay at the end of a half-mile-long driveway lined with roses, and he owned 100 slaves. In all, the Cherokee had nearly 4,000 slaves, who also endured the Trail of Tears. Whether these slaves' descendants ought now to be considered citizens of the Cherokee nation has been hotly debated in recent years.

As slave owners, the Ross faction favored joining the Confederacy when the Civil War broke out. William Potter Ross served as secretary at the mass meeting of Cherokee citizens in August 1861 where his uncle urged alliance with Richmond, not Washington. The tribe split once again, with several thousand fighting for each side.

These factions tended to break along old party lines "going back to the removal era," says Ross Swimmer, a William Potter Ross namesake who was principal chief of the Cherokee in 1975–85 and head of the Bureau of Indian Affairs under President Ronald Reagan. Much bloodshed ensued from these tribal disagreements.

Fighting for the Confederacy, William Potter Ross became lieutenant colonel of the Cherokee Mounted Rifles, all of whose officers were of mixed blood, while the enlisted men were of full blood with striking native names like Moses Bullfrog and Six Killer Hummingbird. The Rifles fought in Arkansas at the Battle of Pea Ridge, some Indian soldiers fearsomely attired in buckskin, moccasins with bells, and turkey-feather headdresses, with their faces painted black. A few engaged in

scalping, which the Northern press seized upon as a "carnage of savagery."

William Potter Ross seems to have played no role at Pea Ridge and no doubt recognized what damage it did to Easterners' impression of Native Americans. He now foresaw the inevitable Union takeover of Indian Territory. Ross was briefly arrested by the bluecoats, then his store was burned by rival Indians who condemned his collaboration with the occupying Federals. Ross had been providing food and supplies to Cherokee refugees who faced starvation as the region descended into chaos and guerrilla warfare.

John Ross died shortly after the war ended, and his nephew William assumed top leadership of the shattered Cherokee Nation. Through fighting and disease, its population had plunged by one-third since 1860, to under 14,000. "Everything has been changed by the destroying hand of war," William Potter Ross wrote to his son. "We have not a horse, cow, or hog left."

Now the Princeton graduate would play the leading role in rebuilding and defending the tribe in the postwar years, as Anglo settlers began flooding westward along the lines of the new railroads. In the face of these outside dangers, "he fought to unite all the Cherokees," says Catherine Foreman Gray, history and preservation officer for the Cherokee Nation. "That's what he's best known for today."

Ross journeyed to Washington to help negotiate a new treaty with the U.S. government, an effort that Professor Hoxie calls "a remarkable achievement" toward continued autonomy for the Cherokee Nation, given Uncle Sam's anger about its having joined the Southern rebellion. Yet the Cherokee were forced to make concessions, including two railroad rights-of-way through their lands, which were whittled down in size.

Remembered by a contemporary as "a profound thinker, ready writer, and a fluent speaker," Ross visited Washington repeatedly during these years, testifying before congressional committees and even meeting with President Ulysses Grant in 1876. Ross ceaselessly advocated for ongoing Indian rule over Indian land, even as more and more white settlers demanded the right to occupy these fertile yet sparsely populated tracts. Economic imperatives helped drive the push for opening Indian Territory to whites, but more important, Hoxie believes, was a racist conviction that Native Americans ought not be granted exclusive control of lands within the United States: "American

**“William Potter Ross had witnessed what we would call ethnic cleansing or even genocide. ... But as he got older, he must have realized that bitterness and aggressive rhetoric weren't going to improve the situation.”**

— KEVIN GOVER '78, director of the National Museum of the American Indian in Washington, D.C.





**The 1970s were a “golden age” of American Indian life on campus, says retired curator Alfred Bush. From left, in 1973: Louis Ballard '76 (Osage-Quapaw-Delaware), Conroy Chino \*73 (Acoma Pueblo), Lorene Reano '75 (Santa Domingo Pueblo), Regis Pecos '77 (Conchiti Pueblo), Lily Shangreaux '74 (Lakota), Lee Martine '79 (Navajo), and Patrick Anderson '75 (Tlingit-Aleut).**

## Native Americans at Princeton

For more than two centuries after its founding, the University excluded most minorities. A handful of Native Americans proved an exception: Princeton was run by Presbyterians, some of whom had taken an interest in missionary work among the tribes.

President John Witherspoon accepted a few Lenape Indians in the 18th century, including Jacob Woolley 1762 and Bartholomew Calvin (Wilted Grass) 1776, but all dropped out. Witherspoon canceled the experiment.

The Cherokee young men of the Ross family were virtually the only Indians to attend in the 19th century, according to Alfred L. Bush, retired curator of Western Americana at Firestone Library. Howard Gansworth 1901 (Tuscarora) and Paul Baldeagle '23 (Sioux) attended in the early 20th

century. But in the late 1960s, as Native Americans enjoyed a cultural resurgence, the admission office recruited Indians at Southwest reservations and elsewhere, and a dozen were enrolled by 1972. Efforts were helped by the fact that a famous Native American anthropologist, Alfonso Ortiz, was on the faculty. Bush regards this as a bygone golden age of reservation Indians on campus, with their distinctive languages and religions. “They were an extraordinary group,” he recalls, politically vocal on campus and later pre-eminent in their careers, often in the service of Indian country.

Since 2010, when the U.S. Department of Education changed the way students are asked to report race and ethnicity, it has been more difficult to track the number of Native American students on campus. Only four enrolled students identify themselves as American Indian, compared with 25 to 34 in the three years before 2010. “We regretted this change,” says Dean of Admission Janet Rapelye, “since we lost the ability to identify students with Native American backgrounds.”

In the long if rather fitful history of American Indians at Princeton, a milestone came in 1997, when Regis Pecos '77, a Conchiti Pueblo, became a University trustee — believed to be the first Native American trustee in the Ivy League. In 2005, he co-founded a program that brings American Indian high school students and recent graduates to the Woodrow Wilson School, where for a week during the summer they explore issues facing Native American communities. It continues today. ♦ *By W.B.M.*

politicians said, “You can’t have a nation within a nation.”

Ross urged exactly that. In a stirring speech to fellow tribesmen in 1874, he demanded that Washington follow the example of Italy and guarantee the autonomy of Indians the way Rome, in the 1850s, had allowed San Marino to exist as its own, wholly surrounded principality. The Cherokee and Uncle Sam ought to cooperate and trust each other, Ross argued. Only the “protecting arm of the federal government” could ensure that Indian Territory not be overwhelmed by white settlers, he added, which would lead finally to “extermination” of the native peoples.

And yet all of Ross’ efforts, in the end, came to nothing. He watched in dismay as crime surged in Indian Territory, Texas cattlemen swept through, and white sharecroppers gained a toehold. In 1889, two years before Ross’ death, the first non-Indians were allowed to buy acreage, triggering the pell-mell Land Rush. In 1898, Congress finally abolished the powers of the tribal government altogether.

Recent decades have witnessed a resurgence of the Cherokee, who since 1975 have again governed themselves on 7,000 acres, the heart of their resettlement lands in northeastern Oklahoma from 175 years ago. Then-Principal Chief Swimmer led that movement toward self-rule. “That’s what Ross had in mind back then,” he recalls. “It followed the path he was leading us on.”

“I think we are stronger than ever,” historian Gray says with satisfaction, pointing to more than 300,000 Cherokee Nation citizens living worldwide, 120,000 of them on the tribal-jurisdiction lands. That’s an increase of 2,000 percent since Ross viewed the devastation of the Civil War with despair.

Of 566 tribes officially recognized by the U.S. government today, the Cherokee are the largest, with a \$1.3 billion economic impact in the state. “They survived all these traumas,” says Gover, “and today they are thriving. That is a remarkable story of human stubbornness and resilience,” in which a Princeton alumnus played an important role.

“The Hon. William Potter Ross died suddenly, July 20, of heart disease at his home in Fort Gibson, Indian Territory,” *The Daily Princetonian* reported in 1891. Ross had been, the student editor said with pride, “a brilliant orator and the leading statesman of the Cherokee nation.” On his marble tombstone at Fort Gibson appear the carved words: “Educated at Princeton College.” ♦

*W. Barksdale Maynard '88 is the author of six books on American history, including Princeton: America’s Campus and the new The Brandywine: An Intimate Portrait. He is a lecturer in the School of Architecture.*

# Other people breed puppies. Frances Arnold '79 breeds proteins by rewriting their DNA.

BY MARK F. BERNSTEIN '83

# Evolution Gets an Assist

It took nature tens of millions of years to develop the cytochrome P450 protein. It took Frances Arnold '79 only a few weeks to make it better. A pioneer of a form of bioengineering known as “directed evolution,” Arnold and her team of researchers at the California Institute of Technology generate new versions of P450 that do things nature never designed them to do, including mapping chemical signals in the brain and testing the toxicity of drugs.

Cytochrome P450 is an enzyme that helps the body metabolize everything from food to medicine, but with just a few genetic tweaks, Arnold can get it to perform entirely new functions. Where P450s naturally insert oxygen atoms in the drugs we ingest, for example, modified P450s can insert carbon and nitrogen instead. That excites biologists because it shows how quickly molecules can adapt to new opportunities, and it excites chemists because they can use these biological catalysts to make complex drug molecules or pesticides that are not deadly to bees and animals. Arnold herself has made compounds that could replace more toxic pesticides. “Many are derivatives of natural pesticides like what is found in chrysanthemum flowers,” she says.

Genetically altered P450s also might be useful as contrast agents for better MRI scans, providing clues about how chemical signals in the brain are connected to specific feelings or behaviors. Functional MRIs today can provide only an indirect picture of what is going on inside the brain, Arnold says: They can see oxygen molecules binding to hemoglobin in the blood, but that is an imperfect proxy for the activities of neurotransmitters such as dopamine and serotonin.

Because P450 is similar to hemoglobin in that it, too, binds to oxygen, Arnold thought it might be possible to evolve a P450 that could bind to dopamine instead. Which mutations in P450 would enable it to do that was a mystery, so her team randomly mutated the P450 gene and inserted the mutations into *E. coli* bacteria (a type of bacteria that reproduces quickly and is easy to work with), which produced P450 proteins with those changes. She and her researchers then used algorithms to comb through the mutated P450 proteins for any that showed signs of binding to dopamine, extracted their DNA, and inserted them into a new generation of bacteria. Repeating the process for several generations, within a few weeks the scientists had bred the kind of protein they wanted. Think of a botanist breeding a more colorful orchid, only much faster.

Directed evolution — taking natural proteins and rewriting their DNA by accumulating mutations over multiple generations — allows scientists “to rewrite the code of life” to solve human problems, Arnold says. The technique is increasingly common in biochemistry, and Arnold, more than anyone, is the person who invented it. Researchers at MIT have taken her mutated P450 protein and found that it does indeed enable them to trace dopamine activity in MRI scans of rat brains. Though still not perfected, the technique shows promise for use in scans of human brains as well, which could enable neuroscientists to get a much clearer picture of what happens in the brain when we feel joy or pain.

Arnold’s techniques have enabled pharmaceutical companies to manufacture drugs without using toxic chemicals and energy companies to produce biofuels that replace fossil



fuels. Her processes have helped her found three companies and secure more than 40 patents, earning millions of dollars for Caltech. She is one of a handful of living scientists to be elected to all three of the nation's most prestigious scientific societies — the National Academy of Engineering, the Institute of Medicine, and the National Academy of Sciences — and has been awarded the National Medal of Technology and Innovation. In May, she was inducted into the National Inventors Hall of Fame, joining such luminaries as Alexander Graham Bell, Henry Ford, and Eli Whitney.

A layman might be forgiven for seeing a mad-scientist quality in Arnold's tweaking of nature. Others might say that directed evolution gives bioengineers the power to play God. Leave it to a fellow scientist, though, to sum up her work more accurately, if a little piquantly. Asked what it is that Arnold does, David MacMillan, Princeton's James S. McDonnell Distinguished University Professor of Chemistry, replies: "She hijacks biological enzymes and makes them do her bidding."

**C**altech's campus occupies 124 acres in sunny Pasadena. The buildings tend toward office-park utilitarian, and at first glance, the suite where Frances Arnold works has little to draw the eye. Only the photographs that show her meeting President Obama and Queen Elizabeth II hint that something very unusual is going on there.

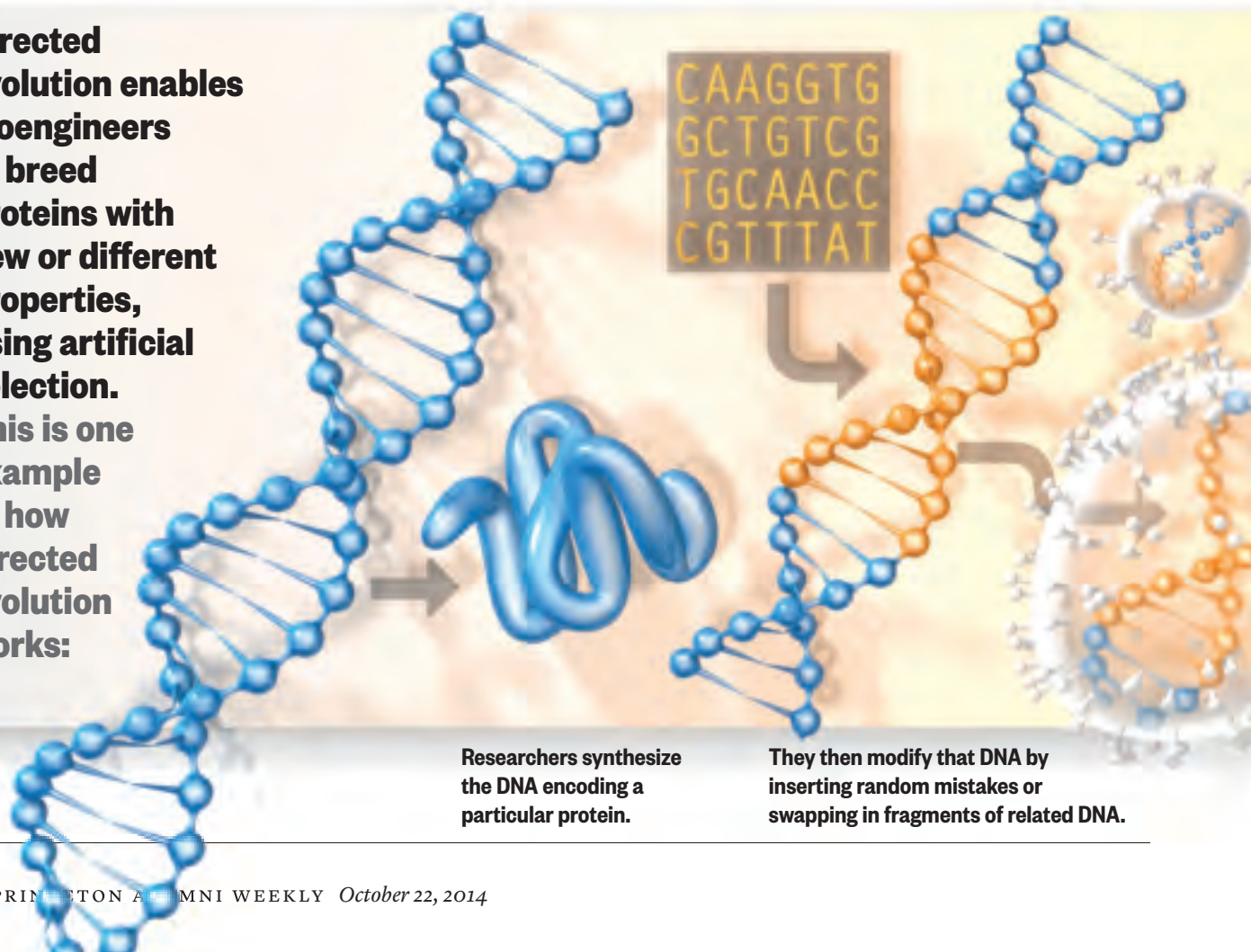
Arnold is a professor of chemical engineering, bioengineering, and biochemistry, but she acknowledges that her professional

evolution has seen its own share of random mutations. The granddaughter of a three-star general and daughter of William Howard Arnold \*55, a nuclear physicist and president of the first private uranium-enrichment facility in the United States, Frances Arnold grew up outside Pittsburgh. If science was in her blood, military conformity was not; she hitchhiked to Washington, D.C., at 15 to join an anti-Vietnam War protest. She moved out of her parents' house while still in high school, supporting herself by driving a cab and lying about her age so she could work as a waitress in a jazz bar.

A self-described "worse than mediocre" student, she nevertheless was accepted to Princeton and chose mechanical and aerospace engineering because, she says, the department had the fewest academic requirements for an engineering degree. Arnold used that extra time to study economics and foreign languages, joking with her characteristic throaty laugh that she also majored in "Italian postdocs." After her sophomore year, she took a year off, went to Italy, and got a job in a factory that made parts for nuclear reactors, but the point was not to further her academic career. It was an adventure, and that love of adventure never has waned: Her hobbies include scuba diving, skiing, dirt-bike riding, and hiking in the California mountains while staying in a cabin that lacked plumbing and electricity. For her sabbatical in 2004, she took her family on a yearlong, round-the-world tour with long stops in Australia, Egypt, Namibia, Madagascar, South Africa, and Wales.

Upon returning to Princeton from Italy for her junior year, she spent time studying at the Center for Energy and

**Directed evolution enables bioengineers to breed proteins with new or different properties, using artificial selection. This is one example of how directed evolution works:**



Researchers synthesize the DNA encoding a particular protein.

They then modify that DNA by inserting random mistakes or swapping in fragments of related DNA.

Environmental Studies with a young group of engineers and scientists who were trying to solve the riddle of sustainable energy. Robert Socolow, now professor emeritus but then the center's director, describes the group in its early days as "bold" and "driven" in its determination to work out complicated problems, qualities he says Arnold has exhibited throughout her career. Arnold remembers the researchers as being "activists who really cared about where our energy was going to come from and at what cost." She became interested in that, too.

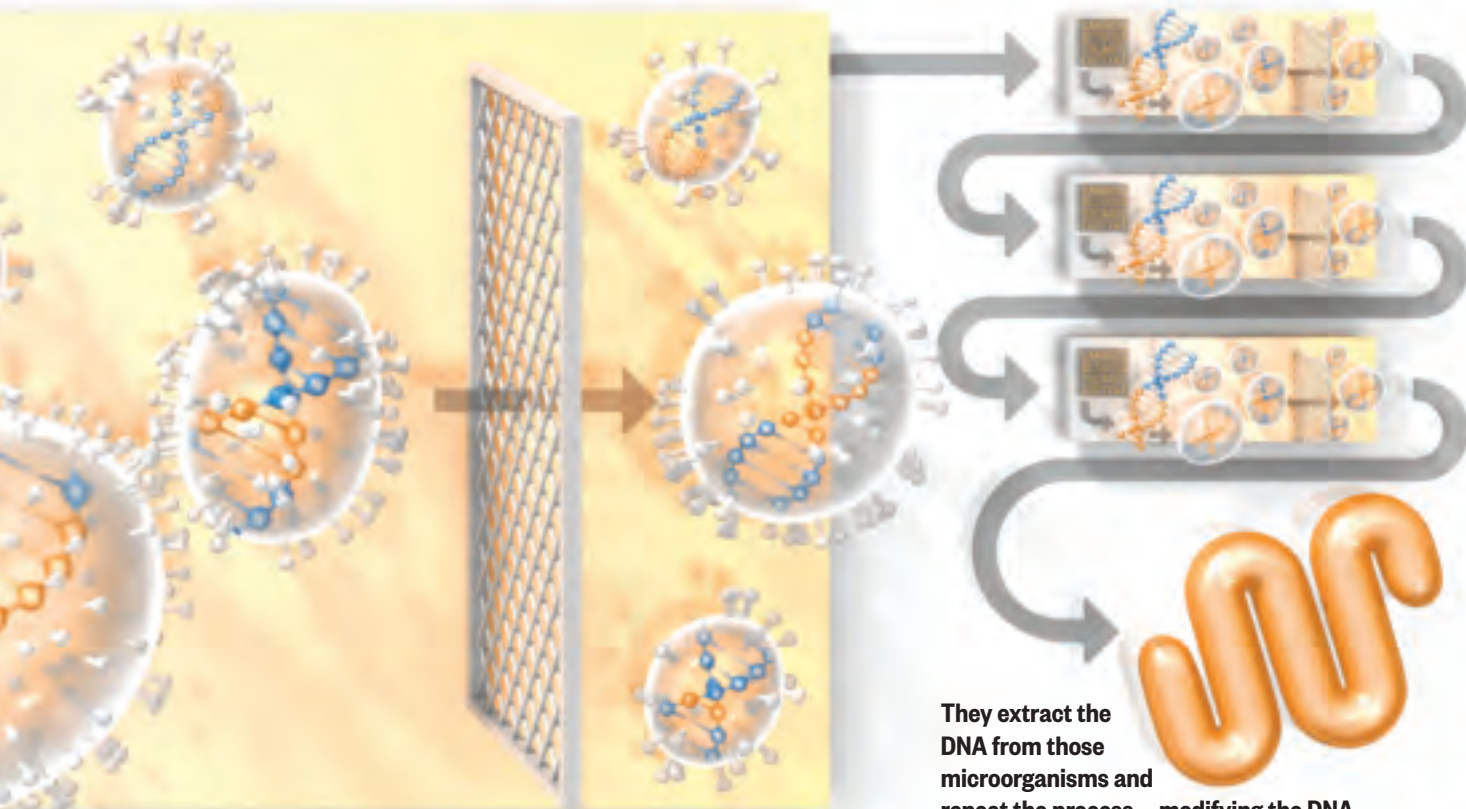
After graduation, she worked as an engineer in Brazil and South Korea and at the Solar Energy Research Institute in Colorado before going to graduate school at the University of California, Berkeley. She developed a love of biochemistry while pursuing her Ph.D. in chemical engineering, which she earned in 1985. She went to Caltech as a postdoc the following year and has been there ever since. Nevertheless, Arnold has said that she was not sure she wanted to become a scientist or engineer until she actually became one. She had always imagined being a diplomat or a CEO.

Genetic engineering already had begun by the time Arnold entered the field, as scientists experimented with ways to manipulate DNA and insert it into organisms so they could read it. Arnold first began trying to design new proteins "rationally," starting from scratch, but grew discouraged that no one in the field seemed to be able to make useful ones. Rather than trying to reinvent the genetic wheel, Arnold hit upon the idea of using evolution by artificial selection, in effect making the natural evolutionary process work for her.

## ASKED WHAT IT IS THAT ARNOLD DOES, DAVID MACMILLAN, PRINCETON'S JAMES S. MCDONNELL DISTINGUISHED UNIVERSITY PROFESSOR OF CHEMISTRY, REPLIES: "SHE HIJACKS BIOLOGICAL ENZYMES AND MAKES THEM DO HER BIDDING."

"Mother Nature has been the best bioengineer in history," she explained in an article for *Engineering and Science* two years ago. "Why not harness the evolutionary process to design proteins?"

There are now many ways of doing directed evolution, but the processes Arnold developed, and still uses, are deceptively simple. Starting with the DNA in a particular protein, Arnold makes mutations, usually by introducing a copying enzyme that inserts random mistakes in the genetic code. The scientists also can recombine DNA from different species in a kind of molecular sex. Although Arnold can do this in her own lab, it is often



This modified DNA is inserted into microorganisms, where it is transcribed and translated into the mutant proteins.

Researchers screen those microorganisms, looking for any that possess desirable genes.

They extract the DNA from those microorganisms and repeat the process – modifying the DNA, reinserting it, and screening – again and again until they have developed a microorganism that makes the protein with the properties they want.

Joe Lertola, Bryan Christie Design

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easier to have another DNA lab make them to her specifications and mail her a billion or so mutated genes in a test tube.

However she gets them, Arnold inserts these mutated genes into bacteria, which then read their altered DNA and produce what the DNA tells them to produce. Arnold sifts through the new generation of proteins to see which ones exhibit the properties (such as binding with dopamine) she wants them to have. When she finds proteins with the desired qualities, she extracts their DNA and repeats the process, breeding generation after generation of proteins until she gets the proteins that will do what she wants.

As the National Inventors Hall of Fame described Arnold's work on its website, directed evolution "mimics Darwinian evolution in the lab under an extremely accelerated timescale. With directed evolution, however, the human experimenter decides the selection of the 'fittest.' Thus directed evolution is like breeding, but at the molecular level."

The evolutionary process that turned ancient primates into humans or pterodactyls into eagles involved small genetic mutations over countless generations and tens of millions of years. A bacterial generation, fortunately, only lasts for about 20 minutes, so Arnold can evolve a new protein in the lab in anywhere from a few days to a few weeks. And if only one new protein in a million mutants pans out, she is happy to use that one and throw the 999,999 failures away.

Over the last 20 years, directed evolution has been widely adopted and applied across academia and industry to make everything from pharmaceuticals to laundry detergents. Arnold's research at Caltech is funded by the departments of Energy and Defense and the National Science Foundation, among others, but some of it is done to order for private industry. Although Arnold has started her own companies and serves as an adviser to several others, she says she prefers research and teaching to running a business.

She has often been one of a small group of women in a male-dominated field, something she says has not bothered her. Although she recalls being treated with a certain amount of condescension by male colleagues early in her career, she says she was lucky to have come along at a time when there was a demand for women engineers. Besides, she adds, "in academics, it's getting your voice out that's important. It's getting somebody to listen to you. I had no problem with that. People were always curious about what I had to say."

She has worked in the same three-room laboratory, just a floor above her office, for the last 28 years. It is full of test tubes, petri dishes, microscopes, and refrigerators. Trays of

God-only-knows-what strain of bacteria grow on the counter. On any day, her team of 22 graduate students and postdocs has several projects going on, with Arnold supervising and directing the work.

Much of her research has been directed toward what she calls "green chemistry," enabling industry to use biological processes instead of toxic chemicals. Directed evolution has enabled the pharmaceutical company Merck, in collaboration with Codexis, a company Arnold advises, to manufacture its diabetes drug Januvia with genetically engineered enzymes rather than the heavy metal rhodium, a process that is cheaper and produces less waste. New companies are looking to use biodegradable biological enzymes to replace chemical pesticides.

Inspired by her undergraduate work at Princeton, Arnold has devoted much of her career to finding alternative sources of energy. She has, for example, developed an enzyme that can thrive in airless environments, enabling Gevo Inc., a company she co-founded, to produce biofuels without air-circulating equipment. Gevo also uses fermented plant materials to produce fuels that one day might replace petroleum-based gasoline and jet fuel. Directed evolution also has contributed to a new field called "bioremediation," which uses mutated organisms to eat oil spills or toxic waste at Superfund sites (Arnold has not worked in this area herself).

Still another promising application is in a field called optogenetics: using light to control nerve cells. Shining light on certain microbial proteins found in the ocean, for example, can open channels in their cell membranes. Arnold's lab is taking these ocean-microbe proteins and breeding them into versions that can be activated inside the human brain, which could lead to the development of new treatments for Parkinson's disease, schizophrenia, autism, and other neurological disorders.

Early in her career, Arnold recalls, her methodology was viewed skeptically by "gentleman scientists" who thought that proteins should be designed rationally rather than built scattershot and looked askance at her focus on manipulating the outcomes before she fully understood the processes that drove them. But, she told herself, "I'm not a gentleman and I'm not a scientist" — Arnold defines herself first and foremost as an engineer — "so I didn't mind."

Saying she is not a scientist is debatable, as directed evolution draws upon chemistry, molecular biology, chemical engineering, and physics. Says Princeton chemistry professor Michael Hecht, a longtime friend, "She has combined the kind of thinking that an evolutionary biologist would do with real engineering thinking and real chemistry thinking. That's unusual. She does basic science but thinks like an engineer, focused on real-world applications."

In 2011, Arnold shared the \$500,000 Charles Stark Draper Prize, which is given by the National Academy of Engineering and has been called engineering's Nobel Prize. Later that year, President Obama awarded her the National Medal of Technology and Innovation for "pioneering research" on biofuels and green chemicals. She has spoken at conferences around the world, including the World Economic Forum in Davos, Switzerland.

On a quiet day in early June, two of Arnold's postdoctoral students were busy taking DNA from three different parent proteins to make something that would not have been possible

## **AS ARNOLD LIKES TO PUT IT, A BIG PART OF HER JOB IS TO "FORCE MOLECULES TO HAVE SEX," AND IN THE NEW WORLD OF BIOTECHNOLOGY, ANYTHING GOES.**



**Arnold with postdoc Christopher Prier '14 in her lab.**

in nature, where the breeding rules are pretty rigid: Organisms reproduce only with the same kind of organisms, and there are never more than two parents. As Arnold likes to put it, a big part of her job is to “force molecules to have sex,” and in the new world of biotechnology, anything goes. She can, for example, cross a cat’s DNA with a dog’s DNA (or an elephant’s or an apple’s, for that matter), take the resulting proteins, and use them for some other function.

“We’ll take one form of life and turn it into another form of life that is useful or beautiful to us,” she explains.

If it all seems like playing God in the laboratory, Arnold points out that genetic engineering is nothing new. Dopamine-binding cytochromes may not exist in nature, but neither do labradoodles, thoroughbred racehorses, Big Boy tomatoes, or nectarines. Directed evolution simply allows scientists to crossbreed at the genetic level. (Genetically modified foods, which have been the subject of some controversy, are created by a different method, and Arnold does not work on them.) As for the risk of inadvertently breeding some mutant bacterium that eats Pasadena, Arnold says that she never works with infectious agents and that none of her specimens could survive for long outside the lab. She wants to make sure bioengineering is communicated accurately, and even works as an adviser to the Science and Entertainment Exchange, a program established by the National Academy of Sciences to assist Hollywood screenwriters who write about science.

Someone could write a good screenplay about directed

evolution, but it is no longer a new story. More than four decades after genetic engineering began, the science of splicing genes is relatively familiar. Arnold sees two principal challenges ahead.

One is a simple question of capacity. Researchers may be able to run a million genetic experiments in a few days, but reviewing their results, interpreting them, and using them to devise the next million mutations takes time.

The bigger problem is conceptual. If directed evolution lets nature handle the evolution, humans still must do the directing, and that requires imagination. Which new sequence of DNA will make a viable biofuel? Which will make a better laundry detergent? Which will form a P450 protein that binds to dopamine?

“We only have the sequence nature gives us to start with,” Arnold explains. “Instead of studying what biology has already made, we have to imagine what biology *could* make. You can say, ‘Oh, I want a cure for cancer,’ but that doesn’t tell you what evolutionary pathway will take you from here to there. What are the intermediate steps?”

One could call this trying to improve on nature, but Arnold believes the relationship works both ways. “I see a future in which nature gives us a helping hand,” she said in a recent video for the BBC. “Instead of destroying the natural world, why can’t we use it to solve the kinds of problems that we are facing?” ♦

*Mark F. Bernstein '83 is PAW's senior writer.*

**WATCH:** Frances Arnold '79's TED Talk “How Can We Design New DNA?” at [paw.princeton.edu](http://paw.princeton.edu)



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# PRINCETONIANS



Cordaro Rodriguez '08 and his group, Sons of Serendip, made it to the finals of the reality-TV talent competition *America's Got Talent*.

CORDARO RODRIGUEZ '08

## MUSICAL KISMET

*Chance brings together the musicians of Sons of Serendip*

Serendipity has played a pivotal role in the life of Cordaro Rodriguez '08. When the self-taught piano, saxophone, and guitar player arrived at Princeton, he was delighted to find that roommate John Fontein '08 was an aspiring


music producer. The two soon were collaborating, and went on to land gigs co-writing music for singers such as pop star Kylie Minogue.

When Rodriguez decided to study law, chance came into play again. He

applied to Boston University's School of Law, he says, by accident — he thought he was applying to law school at Boston College. That led him to reconnect with childhood friend Kendall Ramsour, a cellist who also was studying at B.U. The two started making music as a duo.

Earlier this year, while Rodriguez was working part time as a lawyer, he and Ramsour teamed up with singer Micah Christian and harpist Mason Morton to audition for NBC's *America's Got Talent*, a reality-TV talent competition. Drawing on classical influences, R&B, and pop music, the four called themselves Sons of Serendip, a nod to the serendipitous way they had come together.

When they performed the alternative rock song "Somewhere Only We Know" on the show in June — after being selected from among tens of thousands of people who auditioned — it was only the second time the four had played together in front of an audience. The group appeared on the show throughout the summer, surviving several rounds of eliminations. Sons of Serendip made it to the final broadcast in September — when six acts competed for the \$1 million prize — before being eliminated. But Rodriguez, who plays piano with the group, plans to keep at it: "I had let music go, and it's come back to me." ♦  
By Carol Zall '88

 **VIDEO:** Watch Sons of Serendip perform "Hallelujah" at [paw.princeton.edu](http://paw.princeton.edu)

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**JOHN FLEMING '63**

The musings of a towering figure on the faculty



Fleming, who taught English at the University for four decades, writes about all kinds of subjects, from the meaning of

a word used in a *New York Times* story to making grape jelly with his granddaughters.

On plagiarism: **“Medieval plagiarism was**

**abundant, but it was of a completely different sort. The idea was to pass off your work as somebody else's, not vice versa.”**

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Mr. Anthony J. Riposta '74 P14 and Mrs. Susan M. Riposta S74 P14  
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Michael Roberts and Karen Hess P14  
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Mr. Francis X. Smyth '82 P12  
Howard and Virginia Solen P15  
Mr. Wick Sollers '77  
Ms. Karen Hammerback Sonneborn '95 and  
Mr. William Sonneborn S95  
Michael Sonnenfeldt and Katja Goldman P14  
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Mr. John G. Stover '06  
Luther M. Strayer, III, M.D. '57 P82  
Mr. Douglas B. Struckman '88 S89  
Mr. A. Lawrence Stuever '74  
Ms. Joyce L. Stupski W67  
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Ms. Kimberly Simons Tortolani '94 S92  
Mr. John R. Towers '63  
William C. Trimble, Jr., Esq. '58  
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Tiffany A. Troso-Sandoval, M.D. '91  
Paul and Jean Tupper P17  
Natalie Bocock Turnage, Esq. '83  
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University Orthopaedic Assoc., P.A.  
Mr. H. Kirk Unruh, Jr. '70 P95 h62 h78 h83  
Mr. Thomas I. Unterberg '52  
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Ms. Angie Vorhies '86 P15  
Mr. Frank J. Vuono '78  
Esther Wachtell and Thomas Wachtell g16  
Wendy Wachtell and Robert Graziano P16  
Frank and Marguerite Walter P09  
Mr. Gary D. Walters '67 P05 h09  
Mr. William H. Walton, III '74 S78  
Ms. Susanne Wamsler '83  
Mr. William B. Ward, Jr. '59  
Robert and Susan Weaver P16  
James and Kathryn Webb P13  
Mr. George R. Webster '36 g01 (D)  
Mr. David T. Wecker '89 '96 S88  
Mr. Edwin A. Weihenmayer, III '62  
Dr. and Mrs. Thomas J. Weiner P02 P04  
Mr. Peter C. Wendell '72 S77 P03 P11  
Susan and Brad Wendkos P06  
Mr. Gregory S. Werlinich '86  
Mr. Carter L. Westfall '96  
Mr. Matthew B. Whalen '88  
Ms. Lauren V. Whately '11  
Mr. Stephen T. Whelan '68 P99 E  
Mr. Jason M. White '03 S03 and Mrs. Adeline Peff White '03 S03  
Mr. Patrick M. White '91  
Ms. Christy C. Wiegand '97  
Mr. Mark Wilf '84  
Mr. David P. Wilson, Jr. '88  
Mr. Russell P. Wilson '82  
Mr. August L. Wolf '83  
Richmond A. Wolf, Ph.D. '92  
Mr. Peter Y.P. Wong '06  
Stephen Woodsum and Anne Lovett P12  
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Gary and Karen Yablon P17  
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Mr. Anthony A. Yoseloff '96  
Mr. Christopher R. Young '02 S02 and Mrs. Elizabeth Young '02 S02  
Mr. James W. Zug '62  
Suzanne Zywicki '84

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Mary Fernandez \*96 is CEO of MentorNet.

PROFILE: MARY FERNANDEZ \*96

## A NONPROFIT PAIRS STEM STUDENTS WITH MENTORS

**Struggling in STEM** When she arrived at Princeton, Mary Fernandez \*96 was one of a handful of female and minority computer-science graduate students, and was struggling to adapt to her new environment. Women, underrepresented minorities, and first-generation college students are less likely to pursue degrees in STEM fields (science, technology, engineering, and math) than other groups. And when they do, she says, they often have a harder time completing their degrees because of academic unpreparedness, self-doubt, financial concerns, and lack of support. When she was a student, Fernandez was paired with a mentor — Brian Kernighan \*69, today a Princeton professor — through a fellowship with her future employer, AT&T Labs. That experience was “so powerful” that she became a mentor when MentorNet, a not-for-profit online portal that matches STEM students with professionals, was founded in 1997. Sixteen years and 18 mentorships later, Fernandez took over as CEO.

**RÉSUMÉ:**  
CEO of MentorNet.  
Former computer scientist at AT&T Labs. Ph.D. in computer science.

**The benefits of mentoring** MentorNet targets women, minorities, and first-generation college students, aiming to help them earn STEM degrees, but starting this fall, the program was open to any STEM student with a valid .edu email address. Mentors offer advice on issues ranging from goal-setting to course selection to interviewing for internships.

**Business sense** In addition to promoting diversity, MentorNet hopes to address the heightened demand for STEM talent across industries. Since its inception, the program has matched mentors with about 32,000 students, more than 92 percent of whom have graduated with a STEM degree. Fernandez’s goal is to make 40,000 matches a year with the help of a partnership with LinkedIn: “When a student arrives at the door freshman year, interested in pursuing a STEM degree, they should come out four years later with that degree.” ♦  
By Agatha Gilmore '04

## Q&amp;A

# JONATHAN RAPPING \*92 ON DEFENDING THE POOR

Jonathan Rapping \*92 worked for more than a decade in public defenders' offices and saw that many court-appointed lawyers were ill-equipped to represent their clients well. In 2007, he and his wife, Ilham Askia, founded Gideon's Promise, a nonprofit organization in Atlanta that offers training and mentoring for public defenders in 15 states. The group intervenes at the trial stage rather than after conviction, when most defendants' challenges take place. The name Gideon's Promise comes from *Gideon v. Wainwright*, the 1963 Supreme Court case that required state courts to provide counsel to defendants who are unable to afford an attorney.

Stephen Bright, president of the Southern Center for Human Rights, told *The Atlanta Journal-Constitution* that Rapping "is making the Constitution of the United States a reality for the first time in courtrooms all over the Southeast. He is teaching public defenders to be client-oriented — to recognize the dignity of their clients, treat them with respect, and give them the same representation they would receive if they could afford the best lawyer in town."

Last month, Rapping was chosen as one of 21 recipients of a 2014 MacArthur Fellowship, which comes with a no-strings-attached stipend of \$625,000. Rapping isn't sure what he will do with his so-called "genius grant," but, he says, "it's a nice cushion" for Gideon's Promise. Rapping earned an MPA from the Woodrow Wilson School and a law degree from George Washington University. His work has been featured in the award-winning documentary film *Gideon's Army*. He spoke with PAW soon after winning the prize.

## Why did you start Gideon's Promise?

The justice system had come to accept embarrassingly low standards of justice for poor people. Lawyers were losing sight of what their obligations were to their

clients. The idea was to build a community of public defenders who would raise expectations and raise the standard of representation for poor people accused of crimes in systems that had abandoned our most fundamental values.

We started with 16 lawyers in two offices, and we've now trained more than 300 public defenders across 15 states. In seven years, we are well on our way to building not only a comprehensive organization, but a movement of defenders committed to changing expectations.

## What are your main goals?

In the short run, we are producing lawyers who are going to provide better representation to their clients immediately and introduce a higher standard of practice into systems

that have come to accept injustice. In the long run, our goal is to grow these lawyers into tomorrow's leaders, so they are running offices and collectively advocating in the statehouses for the resources and policy reforms necessary to make sure we are living up to our constitutional responsibility.

## What drives you to do this work?

Criminal justice and indigent defense are this generation's greatest civil-rights struggle. The greatest injustices facing poor people and people of color are happening in our criminal-justice system. Eighty percent of the people in our system are poor, relying on court-appointed lawyers. They are disproportionately people of color. Communities are torn apart when people are charged and don't have the defense they need. So hopefully we can inspire the country to focus on this really important civil-rights issue. Our basic ideals as Americans are at stake.

♦ Interview conducted and condensed by Gabriel Debenedetti '12

**"Criminal justice and indigent defense are this generation's greatest civil-rights struggle. ... Communities are torn apart when people are charged and don't have the defense they need."**

— Jonathan Rapping \*92



## Alumni Sample Academic Life

Alumni are invited to campus for a taste of the University's academic offerings at **"A PRINCETON SAMPLER"** Nov. 7-8. The weekend will include several lectures, sessions with students, and tours of campus. More than 90 alumni and guests were registered for the first session, held Sept. 26-27.

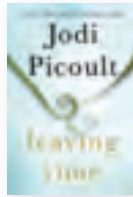
The event includes discussions about neuroscience led by professors Alan Gelperin and Sam Wang; a lecture on Ukraine, Russia, and the redefinition of the post-Cold War political order by professor Mark Beissinger; an update on the University from Vice President and Secretary Robert Durkee '69; student presentations on their entrepreneurial ventures; and a student panel on the arts.

The event is free but registration is required. For more information, visit <http://alumni.princeton.edu/learntravel/events/academicmini/>. ♦

### NEW RELEASES



**Gary Krist '79** tells the story of a dramatic moment in New Orleans' history, when reformers launched a crusade to confine the city's vices to a government-sanctioned red-light district. *Empire of Sin: A Story of Sex, Jazz, Murder, and the Battle for Modern New Orleans* captures the bitter 1890s battle for the city's future.



*Leaving Time*, the latest novel from **Jodi Picoult '87**, takes readers to Botswana, where a young scientist named Alice Metcalf is doing research on the way elephants express grief. After Alice's mysterious disappearance, her daughter pores over the pages of her journal and enlists a psychic in a desperate — and revealing — search for the truth.



In *The Brandywine: An Intimate Portrait*, **W. Barksdale Maynard '88** offers a sweeping narrative of the Brandywine River, which winds from southeastern Pennsylvania into Delaware, and the men and women who shaped the region's culture and history. They include the DuPonts, who made their fortune there, and Andrew Wyeth, whose paintings captured the people and natural landscape of the region.



A cadre of 19th-century amateur astronomers and inventors played a significant role in the birth of modern astronomy. In *Starlight Detectives: How Astronomers, Inventors, and Eccentrics Discovered the Modern Universe*, **Alan Hirshfeld '73** describes these ambitious dreamers and the persistence and imagination required for scientific progress. ♦

## The Future of Children

PRINCETON-BROOKINGS



# Helping Parents, Helping Children: Two-Generation Mechanisms

Ron Haskins, Irwin Garfinkel, Sara McLanahan, Editors

Publication Date: May 7, 2014

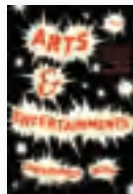
Because the home environment is so important for children's development, many people think the "two-generation" programs, which serve parents and children simultaneously with high-quality interventions, can be more effective (and perhaps more efficient) in closing the achievement gap between poor and more affluent children than programs that serve them individually. This issue looks at the mechanisms that underlie such efforts, with the hope that we can use our understanding of these mechanisms to design better two-generation programs.

Visit [www.futureofchildren.org](http://www.futureofchildren.org) to be added to our Listserv to receive notification of publications and events.

A COLLABORATION OF THE WOODROW WILSON SCHOOL OF PUBLIC AND INTERNATIONAL AFFAIRS AT PRINCETON UNIVERSITY AND THE BROOKINGS INSTITUTION

READING ROOM: CHRISTOPHER BEHA '02

# A FICTIONAL ROMP THROUGH CELEBRITY WORSHIP



Christopher Beha '02's new novel, *Arts and Entertainments*, is a hilarious send-up of our celebrity culture, but his inspiration came not from watching marathons of *The Real Housewives*, but from reading Edith Wharton.

A Wharton short story — about an impoverished poet who cannot make money from his poems and is offered the chance to sell a piece of gossip to a newspaper — sparked the idea for the novel. It follows a failed actor who, desperate to afford fertility treatments for his wife, sells a sex tape made with a now-famous former girlfriend. When his identity is revealed, he unwittingly is drawn into the world of reality TV, which quickly takes over his life.



**What he's reading:** *The Neapolitan Novels*, by Elena Ferrante. "I just finished the third novel in this series, called *Those Who Leave and Those Who Stay*, but it's worth starting at the beginning, with *My Brilliant Friend*.

"Not much is known about Ferrante, an Italian writer, but her addictive novels about the troubled lifelong friendship of two women from Naples have the air of autobiography, if only because they feel so lived."

He previously wrote the novel *What Happened to Sophie Wilder*, about a woman who disappears; and *The Whole Five Feet*, a nonfiction book about reading all 51 volumes of the Harvard Classics Library.

To research reality TV, he turned to friends John Carr '97 and Josh Harnden '00, both TV producers who have worked on *The Hills*, and studied gossip magazines. Though he is not one to post selfies on Instagram, he did include in the novel a doppelganger for Twitter that he dubbed Teaser, since he sometimes finds himself unwittingly addicted to tweeting, he says: "I wanted to write about the stuff that I'm implicated in as well." ♦ By J.A.

The novel expertly skewers our obsession with the world of celebrities — a newspaper headline reads "Nation Mourns" when a reality-TV star dies — and the way in which social media has transformed how we think about our lives.

There has been "a real debasing of interior life," Beha says, with the pervasiveness of the idea "that everybody's life is meant to be broadcast, and that your life has meaning to the extent that it is known about by as many people as possible." The book's reality-TV maestro, a shadowy figure named Brian Moody, spends a year in seminary before realizing his true calling, enabling Beha to explore the way celebrity culture "substitutes in some way for what religion used to provide."

This is a first effort at comedy for Beha, a deputy editor at *Harper's* magazine.

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# CLASS NOTES

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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/issues/2014/10/22/sections/class-notes/](http://paw.princeton.edu/issues/2014/10/22/sections/class-notes/)

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# MEMORIALS

**PAW posts a list of recent alumni deaths at [paw.princeton.edu](http://paw.princeton.edu). Go to "Web Exclusives" on PAW's home page and click on the link "Recent Alumni Deaths." The list is updated with each new issue.**

## THE CLASS OF 1938



### Henry Gardiner '38

Henry Gardiner died May 27, 2014, at his home in Hightstown, N.J. Hank prepared for Princeton at the Hotchkiss School, where he was active in football and baseball and was a member of the student council.

At Princeton, he majored in art and archaeology, graduating with honors. He was on the freshman soccer and baseball teams and was art editor of the *Pictorial* his freshman year and a columnist for *The Daily Princetonian* his senior year. He was a member of Theatre Intime sophomore year and was in Triangle Club sophomore and junior years. Hank was a 21 Club member and belonged to Cap and Gown. He roomed with J.D. Ewing, B.T. Rulon-Miller, and W.T. Galey III.

Hank was in the Air Force from 1942 to 1945. After World War II, he attended the Institute of Design in Chicago and worked in visual design in Aspen, Colo., from 1949 to 1953, and then at the American Museum of Natural History in New York City in exhibition design from 1954 to 1978.

Hank is survived by two sons, Henry and John; and a niece, Margaret, to whom the class extends sincere sympathy.



### William W. Wilson '38

William W. Wilson died April 27, 2014, at his home in Wynnwood, Pa.

Bill prepared for Princeton at Penn Charter School, where he was active in football, basketball, and track. At Princeton he majored in biology, achieving departmental honors. He was a member of Cannon Club. Bill was a member of the football, track, and JV basketball teams. He also was a member of the varsity club and served as an assistant coach for freshman basketball in his junior and senior years.

Bill earned a medical degree at the University of Pennsylvania in 1942. He was a flight surgeon in the Navy, serving in the South Pacific, and received the Distinguished Flying Cross.

After returning to civilian life, Bill was a resident at the U.S. Naval Hospital in Philadelphia. He became certified by the American Board of Psychiatry and Neurology and taught neurology at the University of Pennsylvania from 1949 to 1958. He was on the staff at Bryn Mawr Hospital, Delaware County Hospital, Roxborough Memorial Hospital, New Jersey State Hospital, Northwest Institute of Psychiatry, and Trenton Hospital. He continued to practice medicine until his retirement in 1995.

Bill exhibited orchids at the Philadelphia Flower Show for many years and also acted as an orchid judge.

He is survived by his son, William Jr., and his daughter, Wendy E. Wilson. The class extends heartfelt sympathy to them.

## THE CLASS OF 1941



### Kenneth F. Brown '41

Kenneth Brown died Feb. 7, 2014.

Ken graduated from Princeton *magna cum laude* and as a member of Phi

Beta Kappa. The great-grandson of John Papa '11, a prominent public figure of 19th-century Hawaii, Ken's career followed his family's model of civic distinction, spanning architecture, business, and politics.

Ken served in the Hawaii state senate. He was chair of the board of the Queen's Health Systems Medical Center and president of Mauna Lani Resort, roles that enabled him to support his Hawaiian heritage. He was elected to the College of Fellows of the American Institute of Architects. He was director of the Nature Conservancy, chair of the Bishop Museum Board of Directors and the East-West Center Board of Governors, and president of the Hawaii Maritime Center. He received the Red Cross Humanitarian of the Year Award in 1986.

Ken is survived by his wife, Joan Elizabeth Schaefer Brown; their children, Laura Schaefer Brown, Frances Hyde '11 Brown White, and Bernice Victoria Brown Johnston; and grandchildren Ana '11 Brown-Cohen, Jonah Isaac Brown-Cohen, Lawrence Schaefer

Brown-Cohen, Kenneth John '11 White, Philip Brown White, Francis '11 Kniskern White, Josephine Kiyomi Johnston, Everett Kahalelaukoa Johnston, Samuel '11 Brown Johnston, and Reynolds Palani Johnston.



### Anthony D. Duke '41

Anthony Duke died April 30, 2014, in Gainesville, Fla. He was the founder of Boys and Girls Harbor, an educational and social-service agency that

has helped tens of thousands of New York's disadvantaged children. He was a member of the family that founded the American Tobacco Co., and his mother was a member of the Drexel family that presided over a Philadelphia banking empire and founded Drexel University.

In 1935, while at St. Paul's School, he worked as a counselor at a camp for underprivileged boys. At summer's end, he drove two campers home to Harlem and saw the miserable conditions they lived in. In 1937, he started his own camp, but it fell dormant in 1939 when he left Princeton to enlist in the Navy. He first worked as a naval attaché in Buenos Aires, but during World War II he was commander of a landing ship, serving at the Normandy invasion and in the Pacific, earning three battle stars and a Bronze Star.

In 1954, he established the camp organization's year-round counseling and tutoring program. Tony's first three marriages ended in divorce, and he was separated from his fourth wife, Maria de Lourdes Alcebo.

He is survived by his sons, Anthony D. Jr., Nicholas R., John O., Douglas D., Washington A., and James B.; four daughters, Cordelia Duke Jung, Josephine Duke Brown, December Duke McSherry, and Lulita Duke Reed; 22 grandchildren; and 10 great-grandchildren.

## THE CLASS OF 1946



### Harold B. Erdman '46

When Hal Erdman co-founded New Jersey Aluminum Co. in 1954, he moved into a young industry that soon needed his supplies worldwide. His firm

later became the world's largest supplier of coaxial sheathing for cable television, enabling picture and sound to reach wherever cable could go. With Hal as president, the company grew to 1,800 employees, with manufacturing plants in six cities in five states and \$200 million in annual sales.

Always a sports fan, during the summer, Hal concentrated on tennis and sailing on Martha's Vineyard, his summer home, and on ice hockey in the wintertime. He coached the Yale freshman hockey team to its first undefeated season, and in his hometown of Princeton, he founded and coached the Pee Wee Hockey League for 12 years, teaching the game to

hundreds of boys.

Hal was a trustee of Princeton Day School and trustee emeritus of the Lawrenceville School. He served '46 as class treasurer and reunion chairman.

His death Jan. 6, 2014, left his wife of 65 years, Judy Peck Erdman; their children, Guy, Fred, Jody, and Carl; nine grandchildren; and his brothers, Charlie, Peter, David, and Michael, as survivors. To them, '46 expresses thanks for Hal's generous life.

#### THE CLASS OF 1952



##### **Leslie Charles DeVoe '52**

Chuck came to Princeton from the Park School in Indianapolis, his lifelong home. Perhaps the best all-round athlete in the class, he played varsity tennis and was captain of the basketball team. He joined Cottage, majored in economics, and roomed with John Laupheimer. In June 1952, he married Jody. He served as a second lieutenant in the Army field artillery in Korea.

He entered the family business, the L.M. DeVoe Co., working with his brother, Stephen, and later also his son, Michael. He was a founder of the ABA Indiana Pacers, the World Hockey Association Indianapolis Racers, and the Indianapolis Racquet Club.

Chuck's record as a senior tennis player, beginning at age 47, was extraordinary. Having already won 11 Indiana men's state championships, he went on to the Senior Tennis circuit to play on 20 U.S. Cup teams, winning 67 national titles, 13 European titles, and three world titles.

He died Dec. 28, 2013. The class, in which he had so many friends as a student and later at Reunions, offers earnest sympathy to Jody; Chuck's brother, Stephen; and children Anne, Michael, and George.



##### **Robert C. Johnston '52**

Bob joined us after Deerfield, majored in the Woodrow Wilson School, and joined Prospect. He served on several of our publications, including *The Nassau Sovereign* and *The Nassau Lit*, as well as on Whig-Clio, the debate panel, the senate, and the Committee on Student Government. He roomed with Bob Finken.

After Navy service, he graduated from Harvard Law School with the Class of 1958. His first job was at Dewey Ballantine. In 1968, he opened his own firm in New York. Next, he began a career at Squibb Pharmaceutical Co. that endured until 1989, when he joined Smith, Stratton Wise, Heher and Brennan, in Princeton.

Bob had a lively interest in a number of community organizations: his church, public schools, the Democratic Party, and several environmental organizations, especially the

D&R Greenway Land Trust, of which he was co-founder and chairman.

Bob died June 1, 2014, leaving his wife, Grace Prevy Johnston; four children from his marriage to Nancy Bakken, who predeceased him, Kathryn, Barbara, Kenneth, and Carol; four children of Grace's, Adrienne, Richard, Marigrace, and Krista; and his brother, the Rev. David K. Johnston. The class offers sympathy to all the family.



##### **Thomas S. Knight Jr. '52**

Tom came to the class from Exeter, joined Ivy, and majored in economics. He played on the basketball team, and captained the rugby team. He was a member of the Right Wing Club, St. Paul's Society, and the YMCA, and was a Chapel deacon. He roomed with Chips Chester and Chauncey Loomis.

Tom served in Korea as a second lieutenant with the 555th Field Artillery. On his return he began a career in advertising as an account executive with Young & Rubicam, where he worked until 1980, and later with E.B. Wilson Co.

He served on the vestry of St. James Church in New York City. In Greenwich, Conn., where he lived, he was a board member of the Round Hill Club, the YMCA, and the United Way. His greatest philanthropic interest was Orbis International, which he co-founded with Princeton classmate Dave Paton, an endeavor that has provided ophthalmological training to 325,000 medical professionals in 92 countries and thereby saved the vision of millions. Tom died May 4, 2014.

To Tom's wife, Kathie; and his sons, T. Spencer III, George C. '89, James E., and Peter A., the class sends best wishes with a salute to Tom for a generous and productive life.



##### **J. Edgar Thomson Rutter '52**

Jet, son of Thomas R. Rutter 1913, was a lawyer and jurist in Southern California after serving two years in the Army and graduating from the University of Southern California Law School.

Jet came to Princeton from Chadwick School in Palos Verdes, Calif. He was recruited for the fencing team by coach Stan Sieja and was made captain his senior year. He majored in religion and graduated with honors. Jet joined Dial Lodge, and roomed with Chan Dawson and Dan Hansen.

Friends in the class recall Jet's ability to entertain with renditions of bawdy songs. His energy and good humor are evident in his remarks for *The Book of Our History*.

Appointed to the Orange County Superior Court in 1968 (the youngest judge in California at that time), he created a department of family law to speed the handling of cases. He was president

of the Newport Harbor (Calif.) Nautical Museum.

Jet died May 31, 2014, at home in Newport Beach. We send our sympathies to his wife, Kit; and children Thomas, John, Lenore, and Lynne.

#### THE CLASS OF 1953



##### **Curtis W. Caldwell '53**

Bill, or "Mother" as he was fondly called by close college chums because of his protective nature, died after a valiant struggle with Parkinson's disease March 8, 2014, in Santa Cruz, Calif.

The son of Chester C. '25, Bill was born in Mexico City and entered from St. Christopher's School. Before classes began in 1950, he and his roommates, including Joe Carragher, Gerry Sibley, and Willie Smith, were unpacking in their Holder Hall suite and threw unneeded furniture from their window into the courtyard as a prank. Other students did the same thing; then someone lighted the pile and joked that the Big Three football victory bonfire had begun several months early. Dean F.R.B. Godolphin '24 thought differently.

He left us after sophomore year to enlist in the Army and received three bronze stars during the Korean conflict.

Bill met his wife, Laura, at UC, Santa Cruz and dedicated his life to a career in language, teaching, cultural understanding, and human rights. He inspired disadvantaged youth to seek higher education, several of whom later attended Princeton.

Surviving besides Laura are his children, Sarah Kattungal, Lucy Donovan, and Andrew. They wrote that Bill was "the embodiment of compassion and grace, who devoted himself to family and the many friends with whom he shared a passion for intellectual dialogue and adventure."



##### **Max O. Truitt Jr. '53**

Max, the grandson of Kentucky Sen. Alben W. Barkley, vice president under President Harry S. Truman from 1949 to 1953 (the four years Max was

at Princeton), died May 14, 2014, of multiple illnesses at a Bethesda, Md., continuing-care facility. He was 83. His funeral was May 24 at the chapel of Washington's St. Albans School, where Max had prepared for Princeton, and was attended by his surviving college roommates and closest friends, Bill Close, Peter Paul, and Dave West. All four were members of Tower Club.

Max earned his bachelor's degree in English and then graduated from Yale Law School. He clerked for U.S. Supreme Court Justice Tom Clark and was a founding partner of WilmerHale, where he had a distinguished career as a litigation specialist. He will be remembered for his wit, energetic presence,

and assistance to young attorneys. An ardent bicyclist, he was also a lover of Bach and a strong advocate of the written and spoken word. He had a firm belief in strong topic sentences.

His survivors include sons Dawson, Robin, and James; daughter Sarah Kantowitz; brother Stephen; stepdaughters Jennifer and Lise Olney; several grandchildren; and one great-grandchild. Max was married three times. Sadly, his first and third wives died. Sympathy goes to his family.



**Stanley D. Whitford Jr. '53** Alumni Records has advised us that Stanley died March 19, 2014, in Lafayette, Colo. Unfortunately, he lost touch with the class many years ago.

Born in Oak Park, Ill., he graduated from Oak Park and River Forest High School. As a freshman at Princeton, he diligently prepared for coach Howard Canoune's swim team, which posted a splendid record of 10 wins. As a sophomore, he joined Tower Club and roomed during upperclass years with Al Kohn, Hal Miller, and Jim Neff. Jim remembered Stanley as "popular and mainstream," and was a groomsman when Stanley married Betty Borg. After graduating with a bachelor's degree in geology, Stanley served two years in the Army, received a master's degree at Northwestern, and earned an MBA at the University of Chicago.

Among the natural-gas industry firms he served as a geologist were Natural Gas Pipeline Co. of America and Peoples Gas Light and Coke Co. Stanley enjoyed making connections with all kinds of people. His activities included traveling, hunting, fly-fishing, gardening, swimming, and tennis.

Condolences go to his wife, Betty; sons Peter D. and David A.; daughters Patty Schwarzkopf, Christina Lewis, and Karin Stewart; and 13 grandchildren. We miss Stanley and regret that he did not keep in touch.

**THE CLASS OF 1954**



**Charles L. Terry III '54** Charles Terry died June 3, 2014, at Clipper Harbor Care in Portsmouth, N.H.

Born in Dover, Del., he attended the Loomis School. His Princeton major was English, and he was a member of Colonial Club. After graduation, he served in the Army and then obtained a Ph.D. in English literature at the University of Michigan.

Charles was an English professor at Dartmouth College for a brief period before he was hired by Phillips Exeter Academy. His career there spanned more than three decades. He was the head of the English department and a coach. Charles was especially proud of the book he published: *Knowledge Without Goodness Is Dangerous: Moral Education in Boarding Schools*.

Charles was an active member of Christ

Episcopal Church in Exeter and a member of St. John's Episcopal Church in Portsmouth at the time of his death. His many hobbies included tennis, fishing, and hiking with his family. In retirement, he also obtained a real-estate license.

He is survived by his wife, Elizabeth; daughter Elizabeth; son Charles; and one granddaughter. The class extends its sympathy to them in their loss and is honored by his service to our country.



**George W. Van De Weghe '54** The class was recently informed of the death of George Van De Weghe on Nov. 28, 2009.

George was born in Paterson, N.J., and attended Blair Academy. At Princeton he was a member of Cap and Gown Club. He left the University in his third year and became a Navy aviator, but later returned and graduated with the Class of 1959. He was married in his senior year and started in business in Houston, Texas. He held several management positions and started three companies.

George considered his greatest achievement to be his children. The class is honored by his service to our country and extends condolences to George's wife, Mary; their sons, George '83, Thomas, and Jerome; daughter Mary; and four grandchildren.

**THE CLASS OF 1955**



**John H. Fish '55** Born June 17, 1932, in Erie, Pa., to Dorothy and Henry Fish, John Fish was a pastor, college professor, activist, and organizer. After earning his bachelor's degree from Princeton (1955), he went on to receive a master of divinity degree from Union Theological Seminary (1958), and a master's degree and Ph.D. from the University of Chicago (1965 and 1971, respectively).

John used his education and experience to form strong beliefs: The most profound learning comes from creative dislocation; the key to teaching is helping young people ask the right questions; we learn more by listening than by talking; and the search for community is all about building relationships.

Recruited in 1989 by his classmates, John was essential in the founding and development of Princeton Project 55 (now Princeton AlumniCorps). His vision was for college students and graduates to work in grassroots organizations, learn about the challenges of urban communities, and develop a lifelong commitment to justice. In 25 years he inspired more than 1,500 alumni to serve as Princeton Project 55 fellows.

Preceded in death by his wife, Sally Wilson Fish, he is survived by children Wendy Naylor,

John, and Dan; granddaughters Bethany, Sierra, and Dana; step-grandson Shannon; and step-great-granddaughters Irie and Marley. John, who had suffered for years with pulmonary fibrosis, died June 10, 2014, leaving us a shining example of a life of service.



**Patrick M. Growney '55** Patrick Growney was born March 20, 1933, and died Dec. 8, 2013.

He came to Princeton from Bergenfield (N.J.) High School, and played freshman and varsity basketball, performed in band and orchestra, and joined Cannon Club. He majored in biology, wrote his thesis on new developments in glycogen demonstration, and graduated *cum laude*.

A loving husband and father, and a musician, Pat was a physician renowned for his work in hematology. With expertise and compassion, he treated patients suffering from blood and lymphatic diseases. He and five colleagues pioneered the integration of physicians into larger organizations to provide coordinated care. Regarded as a quintessential gentleman, Pat was a brilliant clinician and a warm and understanding caregiver who provided guidance and support to patients suffering from chronic and often terminal illnesses.

Pat enjoyed golfing, gardening (his former home was a virtual arboretum), and watching his children and grandchildren play lacrosse. There were often two or three games going on simultaneously; Pat and his wife tried to watch them all.

Pat's survivors include his beloved wife and life companion, Dorothy; sister Lillian; children Patrice Growney Aitken, Scott Growney, Steven R. Growney, and Dorothy Masterson; and nine grandchildren. The class thanks them for their part in a wonderful life.

**THE CLASS OF 1957**

**John Ewadinger '57** John Ewadinger died peacefully May 27, 2014, after a long remission from mantle-cell lymphoma, a rare cancer that happens to have afflicted two other classmates.

He was looking forward to his annual summer visit to the south of France with his companion of the past 54 years, Romuald Tecco. After John retired in 1995 and Romuald three years later, the two could be seen strolling about New York City, always having lunch out, and often visiting Central Park and museums. "We led a quiet, charmed life," Romuald said.

John came to Princeton from Easton, Pa., where his ashes will be buried. He majored in English and was active in Triangle. He had been employed at several advertising agencies as a print-traffic manager. His preparation for his commercial advertising career was at Columbia Business School.

John seemed always to be smiling and always was impeccably dressed. He was well liked by the many who knew him. He was a regular attendee at Reunions and '57's monthly luncheons as well as other class, Charter Club, and University events. He loved Princeton and the Class of 1957 as much as anyone. He will be sorely missed.

The class extends its condolences to Romuald; John's elder brother, William; and his four nieces and nephews.

#### THE CLASS OF 1958

##### Thomas D. Barry '58

Tom died peacefully April 6, 2014, at his longtime home in Warren, Conn. He grew up in Wayzata, Minn., and entered Princeton from Portsmouth (R.I.) Priory.

Tom was an English-lit major who went on to write for *Look* magazine and to freelance. At Princeton he played club sports and followed in the footsteps of his brother, Walter '55, as a member of Ivy. He was in the NROTC and later served with the Marine Corps.

He married Judith Woracek shortly after graduation but divorced 10 years later. The two maintained a lasting relationship and had lunch in New York the week he died. Tom was somewhat of an iconoclast and adventurer, stowing away on the *Queen Mary* and writing about it for *Look*.

He was a railroad buff and produced a documentary called *The Last Train to Pittsfield*. He was a pianist all of his life. He supported himself modestly as a furniture mover and harp-moving specialist, bartender, and service-station and convenience-store operator. He loved the country life and the written and spoken word.

A friend wrote that Tom's greatest qualities were "intellect without pride, kindness without embarrassment, friendship without reservation, values without apology, and the best definition of humanity."

To Tom's brother, Walter; sister Elizabeth; his former wife, Judith Woracek Mullen; and his nephews and nieces, the class extends sincerest condolences.



##### Norris Love '58

Norris "Mike" Love died March 27, 2014, at his home in Winnetka, Ill., from complications of multiple myeloma.

Mike, a Chicago native, came to the class from Choate. He majored in psychology and was a member of Elm Club. Known on campus as the "Voice of the Tiger," Mike was a four-year stalwart of WPRB and was the station's sports director for one year.

After graduation, Mike earned an MBA at Stanford University in 1960. He entered the advertising world, working for two

established firms for an aggregate of 12 years and specializing in marketing and product research. He then was asked to become dean of the nonprofit Lake Forest Graduate School of Management and contributed significantly to achieving accreditation for the school. In 1984, Mike founded a marketing and management consulting firm, which he ran for 12 years before retiring.

Mike enjoyed fishing, hunting, traveling, and curling (where he skipped an eight-end — look that one up). He served on the board of the Chicago Zoological Society for 38 years and helped start the Lake Michigan Federation, which helped protect and preserve the ecology of the lake.

The class extends deepest sympathy to Marcie, Mike's wife of 55 years; daughters Kathryn, Anne, and Sara '89; and grandchildren.

#### THE CLASS OF 1960

##### James F. Lynn Jr. '60

Jim died of cancer March 12, 2014, in Tyler, Texas, where he had lived for 15 years.

Jim was born in Detroit and grew up in Washington, D.C. He came to Princeton from St. Albans School. At Princeton, he majored in politics and was a member of Tiger Inn, where he served as vice president his senior year. Jim was captain of the freshman soccer team and active in varsity soccer and baseball.

Upon graduation, he served as an officer in the Marine Corps and then worked for years in the corporate and financial worlds. He later started his own company, which conceptualized, built, and operated some 30 restaurants with a range of specialties from northern Italian to Southwestern, French, and Chinese. Jim was a master chef. A memorial service for Jim was held at Dakotas Steak & Chop House in Tyler.

After Princeton, Jim lived in Washington, D.C., and Aspen, Colo., before moving to Houston and then Tyler. Jim and his wife, Molly, kept a sailboat in Florida as their getaway.

He is survived by Molly and five children, Karen Lynn Alvshire, James F. Lynn III, Sydney Lynn Richeda, James Tyler Lynn, and James Taggart Lynn; his brother, Thomas W.; and eight grandchildren. The class expresses sympathy to the family.



##### Steven C. Young '60

Steve died in Seattle April 20, 2014, from respiratory failure.

Steve was born in Princeton and served as student administration chairman at Princeton High School, where he participated in football, track, and student council. As a Princeton undergraduate, he majored in English drama and sang in the Tigertones, played in the band and orchestra, and took his meals at Tower Club.

He went on to earn a master's degree and a doctorate from UC, Berkeley and also studied at the Shakespeare Institute in Stratford-upon-Avon. For three decades, his teaching of courses in British, American, and European drama at Pomona College was characterized by "a desire to stimulate the minds of young writers and actors and an insatiable mastery of the material," according to an article in the *Pomona College Magazine*. He also employed his carpentry skills to build a mobile stage, on which he performed Samuel Beckett's works in a tour of Western states.

After retiring in 2004, Steve performed in community-theater productions in Lopez Island, Wash., and pursued his interests in deep-sea fishing and Formula Vee auto racing.

To Steve's wife, Susan; children Marka, Josh, Gretchen, and Meredith; stepchildren Lindsay and John; and his sister, Mary, the class extends its sympathy.

#### THE CLASS OF 1962

##### Edward H. Clarke '62

Ed died Oct. 10, 2013, in Chambersburg, Pa., of complications arising from dementia.

Ed came to us from Thomas Jefferson High School in Richmond, Va. He majored in economics, was involved with Orange Key, and ate at Quadrangle. He roomed with Pearsall, Ludgin, McLaughlin, von Wallmenich, and Price.

Ed earned an MBA at the University of Chicago. Initially, he was denied a Ph.D. since the faculty (including MIT economist Paul Samuelson) thought the demand revelation solution offered in his dissertation was unsolvable. Chicago awarded the degree a decade later, agreeing that he had found a solution for revealing individual preferences. Ed was an aspirant for the Nobel Prize in economics.

Ed worked at the Illinois Budget Bureau and then as an assistant to Treasury Secretary George Shultz '42. He also served on President Nixon's Council of Economic Advisors. He was involved with the Office of Management and Budget for 35 years, including stints for the Agency for International Development (in Haiti and Morocco for five years). He continued to work on theories of demand and published *Demand Revelation and the Provision of Public Goods* in 1978 (see [clarke.pair.com](http://clarke.pair.com) for more).

The class extends condolences to Ed's widow, Phoebe; daughters Ashley and Lindsey; and two grandchildren.

#### THE CLASS OF 1966

##### Anthony J. McEwan '66

Tony McEwan died June 6, 2014, after a long illness.

Tony came to Princeton from Phillips Exeter Academy. At Princeton, he lettered



in lacrosse, was on the rugby squad, and played on Cannon Club's hockey team in interclub competitions. An aeronautical engineering major, he roomed with Carl Feldbaum, Bill

Johnson, Nelson Hender, Tom Unterman, and Sankey Williams.

Tony arrived at Princeton with career plans already precisely formulated. He wanted to be an aeronautical engineer and he wanted to retire Dec. 31, 1999. And that's exactly what he did. He joined Northrup and enjoyed an illustrious engineering career there until Dec. 31, 1999, when he retired from active employment.

After retirement, he continued to live in Malibu, Calif., with a view of the ocean on one side of his home and mountains on the other. He devoted himself to handling his investments and to the outdoors. One year he clocked 59 days on the ski slopes.

Tony never married. He is survived by his partner, Denise Ferris. In recent years he suffered several strokes, attributed to a congenital heart defect.

We lost a good man and a good friend when Tony died. The class extends its sympathy to Denise and to Tony's family.

#### THE CLASS OF 1981

##### H. Patricia Twitchell h'81

Tricia Twitchell died May 13, 2014, and was buried in Princeton Cemetery wearing her prized Class of 1981 Reunions jacket.

Tricia was among a long line of distinguished Princetonians dating back to Jonathan Edwards, third president of the University. Tricia was born in London to Marian and H. Kenaston Twitchell '24. She settled in Princeton in the 1970s, where she worked at Firestone Library for 28 years, commuting across Nassau Street to her Palmer Square apartment.

During Tricia's years at Firestone, she extended her hospitality to many student workers. To honor the friendships she established with several members of the Class of 1981, she was named an honorary classmate, a distinction of which she was most proud. After retiring from Firestone in 1999, Tricia moved to Stonebridge in Skillman, N.J., where she resided for the rest of her life.

Tricia was a member and deacon of the Nassau Presbyterian Church and also volunteered for many years with Recording for the Blind & Dyslexic. Classmates who knew Tricia appreciated her wisdom, warmth, and humor. We will miss her.

#### THE CLASS OF 1994

##### Frank Midgley Jr. '94

Frank Midgley died March 24, 2014, at home surrounded by family from non-small-cell lung cancer after 3 1/2 years of, in his own words,

"kicking cancer back to the Stone Age." He was 42 years old.

Frank grew up in Potomac, Md. At Princeton, he majored in computer-science engineering and was a loyal member and officer of Campus Club. He worked as a software developer in California and Wisconsin after graduation.

For the past six years, Frank worked beside his partner, Julie Simpson '95, as a software engineer and scientific-computing specialist at Howard Hughes Medical Institute's Janelia Farm Research Campus in Virginia. Frank was a brilliant, creative artist whose work ranged from developing software for neuroscientists like Julie to inventing MacOsaix, a program to create captivating digital-mosaic artwork. He also was a masterful Lego engineer, a passion he shared with his two sons.

Frank is remembered as a kind, gentle, talented human being with the utmost moral integrity. He had a love of word games and a sublime sense of humor that he maintained through the darkest hours of his long journey with cancer.

Frank found peace in nature, and he and his family dedicated a redwood tree to his memory in Humboldt National Forest before his death (Frank's tree is No. 79).

He is survived by his parents, Frank Midgley '61 and Jan Windmiller Midgley; his sister, Elizabeth MacKenzie; his partner, Julie Simpson '95; and their sons, Jake (7) and Dylan (5).

#### GRADUATE ALUMNI

##### Chester J. Butcher \*47

Chester Butcher, a retired Air Force brigadier general, died Nov. 15, 2013. He was 91.

Butcher graduated from West Point in January 1943 and was assigned to a fighter group in England. Shot down over France, he spent a year and a half in German hospitals and prisoner-of-war camps.

After returning to the United States, he graduated from Princeton with a master's degree in aeronautical engineering in 1947. Later, he earned an MBA from George Washington University. After being assigned to Headquarters Air Force in 1951, he served as a White House aide in the Truman and Eisenhower administrations. By 1959, he was an executive officer to an assistant secretary of the Air Force and later a military assistant to the undersecretary.

In 1969, after other assignments, he commanded a task force at one of Thailand's Royal Air Force bases in support of U.S. objectives in Southeast Asia. He had been promoted to brigadier general in 1968, and in 1970 he became the deputy commander of a NATO air force in Italy. He retired in 1974. The recipient of many military honors, Butcher was a command pilot.

He is survived by Harriett, his wife of 58 years; a son; and two granddaughters. A daughter predeceased him.

##### Robert L. Kelley Jr. \*72

Robert Kelley, retired holder of the G. Albert Shoemaker Chair in Bible and Archaeology at Pittsburgh Theological Seminary (PTS), died peacefully Oct. 30, 2013. He was 85.

Kelley graduated from the University of Pittsburgh in 1948 and from PTS in 1951. He earned a master's degree in 1959 from the Princeton Theological Seminary and a Ph.D. in religion from Princeton University in 1972.

In 1951, he was ordained a Presbyterian minister. From 1951 to 1955 he served as minister of education at a local church while teaching homiletics, Hebrew, and Greek part-time at Pittsburgh Xenia Seminary.

From 1955 to 1997, Kelley was a faculty member at PTS, primarily teaching New Testament studies. He was named to the Shoemaker Chair in 1990. In retirement, he assisted the PTS admissions office and taught in its summer youth-institute program, as well as continuing to teach and preach in many Pittsburgh-area churches.

In 2000, he received an honorary doctor of divinity degree from Tarkio College in Missouri.

Kelley was predeceased by Ruth, his wife of 61 years. He is survived by two children and one grandson.

##### Edward P. Thomson \*90

Edward Thomson, a former tenured professor of philosophy at John Carroll University in Cleveland, died peacefully Oct. 10, 2013. He was 55.

Born in Scotland, Thomson immigrated early in his life to Canada. He earned a bachelor's degree from St. John's College in Annapolis, Md., in 1980 and a master's degree in 1983 from Dalhousie University in Halifax, Nova Scotia. In 1990, he earned a Ph.D. in philosophy from Princeton.

Thomson was a proponent of the Socratic method of dialectic learning. He wrote many articles and reviews on the philosophy of science and several books, including two volumes of *Philosophy for Teens*. He enjoyed teaching students of all ages.

After leaving Cleveland, he moved to New York City and became a founding faculty member of the Columbia Secondary School for Math, Science, and Engineering on West 123rd Street in Manhattan. Founded in 2007, this is a public school with students from sixth through 12th grades. It is a partnership of the New York City Department of Education, the community, and Columbia University that serves "academically talented students interested in a rigorous and demanding program that prepares students for selective colleges."

Thomson is survived by Robin, his wife of 33 years.

*Graduate memorials are prepared by the APGA.*

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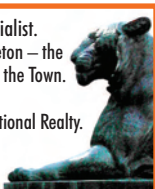
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Julian Street Library  
in Wilcox Hall in 1962.



## A Refuge from Bicker

W. Barksdale Maynard '88

When President Robert Goheen '40 \*48 spoke at the dedication of Wilcox Hall, he felt relief that it was finished at last: a dining and social facility for the Woodrow Wilson Society of undergrads who wanted no part of the boisterous club life on Prospect Avenue. The high-minded project had been controversial from the start.

Long-delayed by construction flaws, Wilcox Hall formed part of New Quad, today's Wilson College, a collection of modernistic dormitories. But the alumni classes funding New Quad had refused to give money for Wilcox Hall, lest it undercut the eating clubs. In the end, funding came from the estate of a deceased stockbroker, T. Ferdinand Wilcox 1900.

Older Tigers were alert to any attack on the clubs, which were under national scrutiny following the Dirty Bicker of 1958, when 23 students — more than half of whom were Jewish — were not accepted to any club. To the traditionalists, Wilcox Hall was the first, insidious step toward a “college system” that would put the more vulnerable eating clubs out of business and huddle nerdy students in a “social wastebasket.” (Graduate students had different concerns, protesting the building's architecture.)

To Goheen, attuned to the spirit of a more egalitarian postwar age, New Quad promised to eliminate “the stark choice between a club or nothing.”

One speaker on dedication

day, Oct. 21, was Tyll van Geel '62, head of the Woodrow Wilson Society. The son of immigrants, he was painfully aware of “the social-class split” on campus and the exclusivity of the old-money clubs. “We were all genuinely grateful for this facility,” he recalls today. Instead of Prospect's booze and dancing, Wilcox Hall hosted a Peace Corps recruiter, a lecture by six-time Socialist presidential candidate Norman Thomas 1905, and a young professor analyzing Shakespeare.

In the Wilcox lounge, undergrads sprawled reading Nabokov in modernist Scandinavian seats, orange couches, and womb chairs, with abstract paintings on the walls. The dark-paneled dens of the eating clubs seemed very far away. ♦



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Yombe artist, *Power figure (Nkondi Mangaaka)*, 19th century.  
Royal Museum for Central Africa, Tervuren, Belgium