


THE UNIVERSITY OF CHICAGO MAGAZINE



FALL 2019, VOLUME 112, NUMBER 1

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EDITOR'S NOTES

CHASING GHOSTS

BY SUSIE ALLEN, AB'09
GUEST EDITOR

keep a sticky note on my desk with a quote from the poet Ada Limón: “We write with all the good ghosts in our corners.” I can’t think of a better motto for writing, especially writing for an alumni magazine, where we work to keep a place and an experience in the memories of our readers.

I’ve had ghosts on the brain (though only metaphorically, I hope) while putting together this issue of the *Magazine*—maybe because of how often I look at that sticky note, and maybe because our deadline falls just before Halloween and the Day of the Dead, holidays that celebrate life, death, and remembrance.

Fittingly, in this issue we look back on the lives of three UChicagoans who are not widely remembered yet left complicated and important legacies. We also pay tribute to the late John Paul Stevens, LAB’37, AB’41—thankfully, he is unlikely ever to be forgotten.

Bette Howland, 12GC’53, AB’55, was at the height of her literary career, with fans including her friend Saul Bellow, EX’39, and strong reviews for her first three titles, when she was awarded a MacArthur Fellowship in 1984. But after receiving that landmark honor, Howland, who died in 2017, never finished another book. Her work fell out of print, and her literary contributions were at risk of being lost altogether—until a chance encounter in a bookstore brought Howland’s writing back into view.

Harold Goettler, AS 1914, SB 1914, was just 28 when he was killed in action during World War I. His heroism in trying to aid the so-called Lost Battalion earned him the Congressional Medal of Honor, the military’s highest award for valor. In “Flight Test,” **David Chrisinger**, AM’10, recreates Goettler’s harrowing final hours.

Maurice Hilleman, PhD’44, is arguably the best known of this group—but still less of a household name than you might expect, given his prolific career as a vaccinologist. Hilleman produced 40 vaccines, including those for measles, mumps, rubella, hepatitis A and B, meningitis, pneumonia, and influenza. Yet some of his methods were, to put it mildly, unorthodox, as **Maureen Searcy** describes. Did the ends justify his means?

I’ve been grateful for the company of Howland, Goettler, and Hilleman these past few months. Their stories, Howland’s in particular, have prompted me to think more deeply about who gets remembered and why. They are ghosts I am glad to have had in my corner. Whether they are good or not is, of course, for you to decide.

Be my guest I was excited but daunted when **Laura Demanski**, AM’94, asked if I’d like to try guest editing this issue of the *Magazine*. Months later, my desk has never been messier, but my appreciation for Laura and the rest of our stalwart, hilarious team has never been greater. For what it’s worth, the second part of that Ada Limón quote is “I, for one, have never made anything alone.” ♦



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On the Cover

Shelf serendipity is a gift to the curious reader. The story of writer Bette Howland's (12GC'53, AB'55) rediscovery begins when a one-dollar used book finds its way into the hands of a literary editor browsing a crowded New York City bookstore. See "Howland's Gift," page 34. Illustration by Christopher Buzelli.

Above

At this year's homecoming game the Maroons sailed to victory, defeating Knox College 37–6. The game anchored a weekend of festivities including the induction of five alumni into the UChicago Athletics Hall of Fame and the Homecoming Block Party outside Stagg Field.

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LETTERS

Excavating memories

In the last issue ("The OI at 100," Summer/19) we asked readers to share their memories of the Oriental Institute as it turns 100. Here are a few of your responses.—Ed.

While I have many fond memories of the Oriental Institute from my orientation week in 2003 and the remainder of my time at UChicago, my most recent memory sticks with me.

April 27, 2019: My then fiancé, now husband, Chad Rubalcaba, AB'00, JD'07, and I were between setting up the reception venue and exchanging vows in Bond Chapel. I was so anxious managing family dynamics and the impending snow (yes, in April) that we decided to take a break. Having explored the Co-op and taken in the quads, we found ourselves in Breasted Hall. We shared our stories of the OI, how it represented our love of exploration and the significance of the written word (they were reworking part of the early writing exhibit) and our awe of the Assyrian bulls. It was what we needed to clear our minds and prepare to be wed.

**Carl G. Streed Jr., SB'07
BOSTON**

My family has a long history both in the Hyde Park neighborhood and with the University of Chicago. The Oriental Institute played an important role in the lives of my aunt and uncle, Cissy Haas and Albert Haas, LAB'33. Their lifelong interest in the history and archaeology of the Middle East culminated in 2005 with the opening of the Haas and Schwartz Megiddo

Gallery at the Oriental Institute. The OI printed a touching memorial to my aunt when she died in 2011.

My aunt and uncle were also close friends of J. R. Kantor, PhD 1914, PhD 1917, and his daughter Helene Kantor, PhD'45, an archaeologist and art historian in the Department of Near Eastern Languages and Civilizations and the Oriental Institute from the 1960s to the '80s.

In the summer of 1974, when my cousin Ron and I were visiting our aunt and uncle, Professor Kantor invited us



to accompany her into the basement of the OI and talked to us about some of the many artifacts being restored and cataloged there. I have an indelible memory of her nonchalantly passing us priceless ancient artifacts that we gingerly held with trembling hands as she told us about their history and significance in the archaeological world.

As a UChicago alum, over the years I visited the Oriental Institute many times and was always impressed by the depth of knowledge and information about each of the artifacts and the ongoing work being done there. I was proud to show my son, Charlie Fisher, SB'14, around the OI several times during his years at UChicago as well.

I look forward to hearing about the plans for the next century of work and discoveries.

**Caryl Lee (Rubin) Fisher, AB'82
NEW YORK CITY**

In my high school history class, students were required to select a book that could be used to contribute to class discussions. Somewhat arbitrarily, I chose a volume by James Henry Breasted. Later that year, I arrived on campus for orientation on a Sunday and proceeded to take a self-guided tour of the campus. Walking down University Avenue from my dorm, the subsequently razed Pierce Tower, I happened upon what seemed like the Emerald City—the Oriental Institute. I was particularly excited to discover that the museum was open on Sunday. I will never forget my overwhelming sense of awe when I saw the human-headed winged bull, the first artifact I encountered inside.

The Oriental Institute is now an obligatory stop whenever I am on campus with a friend.

**Lionel E. Deimel, AB'68
INDIANA, PENNSYLVANIA**

I will never forget my overwhelming sense of awe when I saw the human-headed winged bull, the first artifact I encountered inside.

I thoroughly enjoyed the *Magazine's* in-depth articles celebrating the 100th anniversary of the Oriental Institute. The OI is indeed a jewel in the UChicago crown, and its exceptionally wide range of Middle Eastern research and archaeological and philological undertakings is truly, as OI director Christopher Woods put it, “very UChicago”—something all alumni can rightfully be proud of.

For those who would like to know more about the OI's early years, I strongly recommend Jeffrey Abt's excellent biography of the institute's founder, *American Egyptologist: The Life of James Henry Breasted and the Creation of His Oriental Institute* (University of Chicago Press, 2011). It's available in a beautifully illustrated paperback.

John S. Willson, MBA'68
BEDFORD, MASSACHUSETTS

As a student in the Divinity School in the early 1970s, I addressed one area of my ignorance by electing a course on Islam. It was taught in the Oriental Institute, a building I had walked by many times but never entered. I went looking for the assigned classroom and was immediately struck by the magnificent sculptures and enchanted by the reading room. Someone directed me to the office of Fazlur Rahman, the Harold H. Swift Distinguished Service Professor of Islamic Thought, and I discovered with some anxiety that there was only a handful of students in the class (no back row!). Professor Rahman was both considerate of our naivete and immensely knowledgeable. He apologized that he would have to adjust a couple of classes when out of town. I later discovered that he was providing background on schools of sharia jurisprudence to Pakistani officials trying to develop modern law codes.

As the term went on, I arrived earlier and lingered longer in the OI's exhibits, reflecting on connections between ancient monuments and contemporary striving. I came to feel that the ultimate goal was to not only “furnish a basis for the history and development of civilization” but also to use that knowledge to influence future courses of development. Long after that term the OI

remained one of my favorite and most thought-provoking haunts on campus.

Thomas D. Rainey, EX'73
WARWICK, RHODE ISLAND

My father, William A. Irwin, was a professor at the Oriental Institute from 1930 to 1950. As a child, I spent many hours there, drawing pictures on the blackboard in his office, talking to the secretaries, and roaming around the museum. Like most faculty brats, I attended the Laboratory Schools. It was a short walk after school to the OI, where I would hang out until my daddy was ready to walk home with me.

Even as an adult, I was afraid to put my hand in one of the lions' mouths on the stairs to the second floor.

Even as an adult, I was afraid to put my hand in one of the lions' mouths on the stairs to the second floor.

I loved the museum. Sometimes the guard would let me in after hours. I was alone with the mummies, the Assyrian bull, the gigantic statue of Nebuchadnezzar and his tiny wife at his feet, to name just a few. I developed a lifelong love of archaeology and history.

Best wishes for the next 100 years.

Susan Irwin Smith, LAB'49
TUCSON, ARIZONA

True equality

I had the privilege of meeting Barbara Flynn Currie, LAB'58, AB'68, AM'73 (“Local Interest,” Summer/19), when she was running for her first term in the Illinois House. She has had a remarkable career.

But I would humbly suggest that she didn't cosponsor a bill legalizing gay marriage but rather a bill legalizing marriage equality.

The GLAAD Media Reference Guide states that “preferred terminology includes marriage equality and marriage

for same-sex couples. Note, the terms ‘gay marriage’ and ‘same-sex marriage’ should be avoided, as they can suggest marriage for same-sex couples is somehow different than other marriages.”

Slate notes that the choice of term has impact. Elected officials and candidates who support marriage equality tend to use that term, while those who oppose marriage equality use “gay marriage,” reinforcing the idea that marriage between two people of the same sex is somehow abnormal.

In fact, the synopsis of HB5170 never uses the term “gay marriage” but refers to same-sex and different-sex couples.

I urge you to adopt “marriage equality” or at least “same-sex marriage” as the standard for the *Magazine*.

Victor S. Sloan, AB'80
FLEMINGTON, NEW JERSEY

We thank the writer for raising this issue. We agree that “marriage equality” is the more accurate term and will use it going forward.—Ed.



Architectural digest

I enjoyed the story about Elizabeth Gordon, PhB'27, and *House Beautiful* (“American Style,” Summer/19). While writing *Our Own Devices: The Past and Future of Body Technology* (Knopf, 2003), I found that magazine a trove of images and ideas, and ran across Gordon's strange manifesto. Overwrought as it was, it succeeded admirably in attracting attention as a more restrained critique would never have done. [Architectural Forum editor Peter] Blake's sneering comment shows how needed it was; men like Tom Wolfe could get away with even more hyperbole in architecture criticism.

Gordon had a valid point. The International School, despite its progressive origins, was in practice an elitist movement that aimed to bring a factory aesthetic into domestic life and even to raze entire cities, as Le Corbusier planned to do to Paris. At its extreme it was an ideological attack on domesticity. There was a 1990s exhibition at the Museum of Modern Art and a book on this subject, titled *Not at Home: The Suppression of Domesticity in Modern Art and Architecture* (Thames & Hudson, 1996).

One of Gordon's favorite contributors, Francis de N. Schroeder, was among the most insightful design historians I encountered. Schroeder was also a pioneer of ergonomics and design. His books, including *Anatomy for Interior Designers*, and *How to Talk to a Client* (Whitney Publications, 1948), are thoughtful as well as beautiful in themselves.

Edward Tenner, AM'67, PhD'72
PLAINSBORO, NEW JERSEY



Good sports

I read with interest Lester Munson's (JD'67) piece in the Summer/19 issue ("Brains beside Brawn")—not only because it was topical and a story well told, but also because I went to the College with his son, Les Munson III, AB'89, and Bruce Montella, AB'86, MD'90, both of whom are mentioned.

While I agree with Mr. Munson that the U of C in many ways represents the true spirit of college athletics, the article only addresses the extremes: athletes such as Montella, who toiled in relative obscurity, and those in pow-

erhouse Division I programs where the pursuit of knowledge is often eclipsed—and, it must be said, corrupted—by the almighty dollar. There are, however, many shades of gray in between.

My daughter just began her sophomore year at a small East Coast college (approximately 3,500 students), where she's pursuing both a collegiate athletic career and a five-year degree. Perhaps it's the institution itself—its principles, mission, and values—or the fact that the program is in just its first year of Division I competition, but for now there seems to be the right balance between sports and classes. She and her fellow athletes are, in fact, engaged in "a pursuit of excellence in academics, teamwork, discipline, perseverance, and leadership," just as Mr. Munson described.

I believe the same is true for dozens, possibly hundreds, of other Division I schools out there, not all of which aspire to the TV time and revenue numbers that seem to drive the biggest programs and, sadly, devalue learning.

Go Maroons!

Peter Leeds, AB'88
STAMFORD, CONNECTICUT

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A teammate remembered

I was saddened by news of the November 2018 passing of Victor I. Carlson, AB'55, AM'59 (Deaths, Summer/19), for I have fond memories of competing with him on the University's track team in the late 1950s. Ivan (he preferred being called by his middle name) was one of the foursome that won races at the Drake and Ohio Relays and other meets. I ran the first leg and could always depend on him to hold the lead when I passed the baton to him. His father was an official in the US Foreign Service, and Ivan spent some summers with him on assignments in various countries. One of Ivan's favorite stories was of an early morning run in Pakistan. The streets were deserted at first but quickly filled with crowds that lined the route to cheer for the lone blond Caucasian who strode past for no apparent reason.

Hosea Martin, AB'60
CHICAGO

Hyde Park roots

I decided to at last come forward and tell how the tree in front of the former Woodworth's Bookstore became the "want-ad tree" (Alumni News, Summer/19).

I pinned a note on the tree back in 1948 (or thereabouts) requesting that whoever found the earring I lost one evening in the vicinity of the store return it to me. I also posted notes on other vertical surfaces that lent themselves to my search.

I suspect the earring may be buried somewhere along 57th Street.

Well, the earring was never returned. The pair was handcrafted by a Hyde Park jeweler who specialized in "avant-garde" jewelry—each work one of a kind. I suspect the earring may be buried somewhere along 57th Street.

I feel sure I posted the first note on the tree. I had never seen one there before. Amazing how it became the "want-ad tree."

June Biber Freeman, PhB'47, SB'49, EX'53
LITTLE ROCK, ARKANSAS

For more notes from Freeman, see Alumni News, page 74.—Ed.

Semi-serious

I enjoyed your conversation with Cecilia Watson, AM'05, concerning her book about the semicolon ("Semiotics," Summer/19) but I feel that both you and she missed an important UChicago connection: Erin McKean, AB'93, AM'93. Erin is the founder of the online dictionary Wordnik, as well as a writer, lexicographer, and coder. But all of this may pale in comparison, in the eyes of some, to her role as the designer and dispenser of merchandise that showcases the Semicolon Appreciation Society; I urge all to google it.

Orin K. Hargraves, AB'77
NIWOT, COLORADO

A university's purpose, cont.

I could not help but note Michael J. Sanders's letter (Spring/19) essentially disinheriting the University, apparently for the transgression of not making sense to conservatives. His letter extols the virtues of Milton Friedman, AM'33.

Mr. Sanders might be surprised to learn that Friedman's advocacy of a negative income tax as a more productive method of income redistribution has emerged once more in current discussions of income inequality.

In the mid-1960s, when I was a member of the faculty of the School of Social Service Administration, my colleague Edward E. Schwartz, PhD'55, and I worked closely with Friedman in assembling a collection of scholarly papers on the GMI ("guaranteed minimum income" as it was sometimes called) as part of a planned symposium. We received papers from, among others, Martin Marty, PhD'56, of the Divinity School and Friedman himself.

Unfortunately, the symposium did not come to fruition. The idea itself,

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LETTERS

given a certain air of respectability by Friedman, has again come to light as an income maintenance policy to be seriously considered. Regardless, I shall never forget the conversations with Friedman, Schwartz, and others as the essence of the kind of collaborative spirit inspired by the University of Chicago that has been a sustaining force in my life.

Alan D. Wade, PhD'60
SACRAMENTO, CALIFORNIA

Labor issues

The September 21 *New York Times* contains not one but two articles reporting on anti-union actions taken by the University: an article describing

UChicago Medicine's hiring of temporary nurses after talks with National Nurses United broke down, and a separate article recounting the University's opposition to the unionization of teaching assistants.

Recruited over 50 years ago to the College from Austin High School, located in a working-class neighborhood on the West Side of Chicago, I am disappointed at the University for taking so retrograde a stance with regard to working people.

My Shakespeare teacher doubled as University registrar. There was no football team. The Bartlett Gym's weight-training equipment consisted of a couple of bars with old tin cans at each end filled with hardened concrete. As a reader of the *Magazine* and other University publications, I'm aware that the University today bears little resemblance to the rela-

tively spartan school of the late 1960s. In the process of change, the University appears to have decided that more specialization and richer amenities should take precedence over workers' rights and benefits.

I have no personal experience from which to speak to the nurses' situation. However, as a former teaching assistant at the University of Illinois at Chicago and a former resident adviser and teaching assistant at the University of Iowa when no union option was available, I can say that graduate students holding such appointments are workers deserving of union representation. That the University does not recognize, or willfully denies, this reality seems to me to be an error in judgment that the University community needs to set about correcting.

Dan Campion, AB'70
IOWA CITY, IOWA

BLAST FROM THE PAST

Have you ever married anyone from the University of Wisconsin? I have: just once. If you ever have any impulse to follow my lead, consult me. I will introduce you socially to every living graduate of the University of Wisconsin since the Class of 1867. The only exception is Rev. Stephen B. Nearly of the Class of 1902. He is now a missionary in the Ukraine, and because of the unsettled conditions there I have not made his acquaintance yet, but I will. It's inevitable. Meet one Wisconsin graduate and you have begun your social acquaintance with that University's alumni body.

I was still combing rice and confetti out of my hair when I began the mysteries of initiation which are open to the Wisconsin-Alumnus-by-Marriage. By the time a brief wedding trip had ended, I was calling by their first names everyone on pages 1-54 of the Alumni Directory. ...

I am now obliged to recall Chicago, dimly, as an institution humbled by Wisconsin hosts in football, baseball, tennis, track, craps, stud, strip, and jackpot, and in such other contests as have added to the fame of the Badger. ...

You'll have to excuse me now. I have just had a phone call that Rev. Stephen B. Nearly is believed to be on board the ship just coming in, so we're going down to the dock to meet him.

Robert Barton, AB 1916
New York City
July 1919





David Bevington, 1931–2019

A longtime English professor and beloved member of the UChicago community, David Bevington died August 2 in Chicago. Below is a selection of the personal remembrances we received. For more on Bevington's life and career, see Deaths, page 92.—Ed.

I was very sorry to learn of the loss of David Bevington. I think I may have written the first PhD dissertation he directed at the University of Chicago. I came to Chicago in 1966; he arrived in 1967. I had two seminars with Bevington and liked him very much. He was an excellent teacher, nurturing and supportive. So I approached him with a proposal to do a dissertation on Christopher Marlowe. He agreed to direct it, and medievalist Arthur Heiserman, AB'48, AM'51, PhD'59, served as my second reader. I could not have had a better team.

They were ideal dissertation directors, rigorous but encouraging. The title of the dissertation was "Christopher Marlowe and the Politics of Power," influenced by Bevington's *From "Mankind" to Marlowe: Growth of Structure in the Popular Drama of Tudor England* (Harvard University Press, 1962) but less interested in topicality than politics more broadly.

When it was published, an Oxford professor with an outsized reputation reviewed it. She complained that I was more interested in homosexuality than in Marlowe. She intended the snide comment to be dismissive, but she unintentionally put her finger on what made the dissertation original and valuable. It offered the fullest exploration of homosexuality in Marlowe's plays yet attempted. Preceding the gay studies movement, it was also the first study of Marlowe that treated the homosexuality of his plays sympathetically rather than censoriously. That no doubt was what the reviewer found distasteful. However, David and Arthur were fully supportive of my work. I was very fortunate to have studied with them.

Although Arthur died at a tragically young age soon after my dissertation was finished, David remained a generous and supportive mentor throughout my career.

Claude J. Summers, AM'67, PhD'70
NEW ORLEANS

I shared a music stand (viola) with David Bevington during a Gilbert and Sullivan performance in summer 1991. He was so kind and generous. He invited the whole cast to his house after one performance and not only served food and beverages but put out chamber music, which people played spontaneously. He was the only professor who ever invited me to his or her house, and it was meaningful to me. Sadly, I never took one of his courses, but I fondly remember him as an amateur viola player.

Laura (Pinnas) Sagerman, AB'94
TUCSON, ARIZONA

Mr. Bevington was a genial classroom instructor, but I got to know him better after he agreed to oversee an independent study for which I wrote a three-act play in 1993. To note that patience and humor were two of his prominent qualities is to recognize how immature I was in those days. Among his many other talents, he had a gift for redirecting raw enthusiasm, which was about the only thing I had going for myself, into viable dramatic forms. I don't know why he took my juvenile ideas seriously, but I'm grateful that he did. I try to keep these traits in mind in dealing with my own students.

**To note that
patience and humor
were two of his
prominent qualities
is to recognize how
immature I was in
those days.**

He rode that bike like a demon. Once I saw him catch about 16 inches of air on the sidewalk outside Pick Hall. And he loved Doc Films. He'd turn up for the most obscure screenings. It could be a snowy Wednesday night in February, with a movie only the U of C film brats would love, and there would be Mr. Bevington, Renaissance man, sitting down front on the left, ready to roll.

Robert A. Jackson, AB'93
TULSA, OKLAHOMA

Food allergies
Sleep
Screen time
Language acquisition
Social life
Math anxiety
Summer camp
Tough conversations



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RESEARCH AND NEWS IN BRIEF

BRIGHT SKIES AHEAD

A light rainstorm greeted the Class of 2023 and their cheerers-on as they made their way to opening convocation September 22. The dampness didn't seem to put a damper on things, though—and with family goodbyes on the day's schedule, there wouldn't have been a dry eye in sight anyway.

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Rita Rait-Kovaleva, whose Russian translation of *The Catcher in the Rye* became a best seller, also brought the works of Kurt Vonnegut, AM'71, to Soviet readers.

HISTORY

To Russia, with love

How Soviet citizens made Western culture their own.

BY SUSIE ALLEN, AB'09

In 1960, seven years after the death of Joseph Stalin, readers in the Soviet Union met Holden Caulfield for the first time. They were electrified. In Holden's story, Soviet citizens found language for their experiences. As one fan put it, "Which one of us, Russian readers, did not think of school as '*duratskaia*,' of classmates as '*kretiny*,' of lessons as '*pokazukha*'?"—stupid, bastards, phony. The Russian translation of J. D. Salin-

ger's 1951 novel *The Catcher in the Rye* became a Soviet literary sensation, prompting multiple reprintings.

The Catcher in the Rye arrived in the USSR among thousands of Western cultural works during the "thaw," a period of relative openness following Nikita Khrushchev's rise to power. This wave of officially sanctioned imports, more diverse in style and subject matter than what had come before, made its way to the far reaches of the country. Why and how Western cultural objects arrived, and what they came to mean to ordinary Soviets, is the subject of UChicago historian **Eleonory Gilburd's** book *To See Paris and Die: The Soviet Lives of Western Culture* (Harvard University Press, 2018).

To many Soviet citizens, who encountered American and European books, films, and TV shows all the time, these materials didn't feel entirely foreign. Western imports were

"an inseparable part of Soviet life," Gilburd says, both Soviet and non-Soviet at the same time. By examining how Western culture was seamlessly incorporated into everyday life, Gilburd, AB'98, now an assistant professor of history at UChicago, hoped to understand how the thaw's distinctive culture came to be.

The book interweaves the experiences of three groups: the bureaucrats, who brought Western cultural material into the country; the mediators, such as literary translators, dub actors, and critics, who helped make that material accessible; and the public. In different ways, all three took part in the work of translation, which Gilburd sees as "a mechanism of transfer, a process of domestication, and a metaphor for the way cultures interact."

Literary translators sought to capture "not the text itself, so much, but what they called the reality behind

the text,” Gilburd says—how it made readers in its country of origin feel. This resulted in translations that seem interventionist by contemporary standards. In *The Catcher in the Rye*, for instance, American Holden repeats words like “terrific” and “goddam”; Russian Holden employs a raft of synonyms. That subtle difference changes how the character comes across, making him, in Gilburd’s view, appear more sensitive and vulnerable. When it came to cinema, dubbers added voice-over narration and even inserted Russian billboards and signs into Western films. It’s not surprising that viewers sometimes didn’t know what was foreign and what was domestic.

One outcome of the domestication of Western materials, Gilburd argues, was that they took on unexpected new meanings in the Soviet context. Ernest Hemingway’s *For Whom the Bell Tolls*, about the Spanish Civil War and idealism pushed too far, was read as alluding to the violent, repressive Soviet Union of the 1930s. *The Catcher in the Rye* became enmeshed in Soviet literary debates about whether slang and other forms of youth language belonged in print.

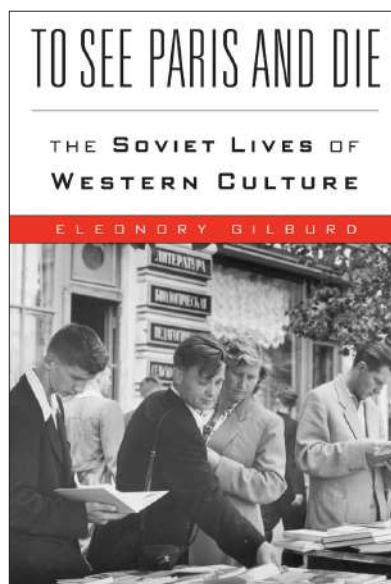
There is no single explanation for why certain Western imports flopped and others became classics. (A translation of *The Grapes of Wrath* failed to capture much interest, perhaps understandably—after decades of Soviet realism, who wanted to read another

novel about workers’ struggles?) But one notable area of audience interest, Gilburd writes, was fiction centered on emotion—something that had largely been left out of Soviet culture in the 1930s and ’40s, when straightforward depictions of proletarian triumph proliferated.

By the 1950s, Soviet artists and critics had begun to worry about the bloodless quality of domestic art. After all, they reasoned, even in a society of perfect economic equality, heartbreak and other forms of personal pain would still exist.

Western art helped fill the gap, providing language and images for what had gone unspoken and unseen. One enthusiastic reader of Erich Maria Remarque credited the German novelist with “[telling] us, young Soviet men and women, about these feelings” of “eternal, singular, and unique” love. Western films offered franker depictions of sexual behavior than Soviet viewers had ever seen before—an offensive experience for some, who felt the country’s censors were not doing their jobs, but revolutionary for others.

Gilburd’s book concludes with a somber chapter on Soviet emigrés and their lives in the countries they had only known from movies and books. The reality, inevitably, was more painful and complicated. She goes on to compare the emigré experience to life in post-Soviet Russia, when the coun-



The “thaw” was, until recently, an understudied moment in Soviet history, says Eleonory Gilburd, AB’98.

try, as a whole, “essentially emigrated to the West.”

In the tumultuous 1990s, former teachers, doctors, and engineers, their savings wiped out and lives upended, sold their possessions on the street. They peddled World War II medals to tourists but found no takers for their idiosyncratic translations of Hemingway, Remarque, and Salinger. With the end of government control over information, new and unmediated depictions of Western life flooded into the country, rendering what was once beloved suddenly pointless. ♦

TECHNOLOGY

QUICK STUDY

Just a (mega)bit better

When it comes to watching video, is faster internet service worth the price tag? Amid projections that video streaming will account for 82 percent of internet traffic by 2022, the *Wall Street Journal* set out to investigate. Getting help from a team led by computer science professor **Nick Feamster**, the newspaper gave its answer in August: no. Using a new method, published August 14 on *arXiv*, that improves the ability to infer the quality of video streaming from encrypted traffic, the researchers compared start-up delays, picture resolution, and other quality measures on Amazon, YouTube, Netflix, and Twitch on 66 home networks with a range of service plans over 16 months. Most consumers paying a premium for speeds of 100 megabits per second or more enjoyed only marginal improvements in performance, even when streaming up to seven videos simultaneously.—*L. D.* ♦

Survey says

What do Americans think about religion, government spending, and sexuality? For answers to those questions and more, researchers and reporters turn to the General Social Survey, or GSS. The modestly named poll reveals Americans' views on nearly every social issue—including hot-button concerns. Established in 1972 by late UChicago sociologist James A. Davis, the GSS began at a time when attitudinal research often had commercial, not scientific, aims. It soon gained the attention of social scientists, media outlets, and policy makers.

As the GSS's following grew, so did its list of questions. The 1972 survey collected data on nearly 200 variables; today, it's more than 1,000. Figuring out what to add and delete in any given year is one of the trickiest parts of the job, says **René Bautista**, a senior research scientist with NORC at the University of Chicago, which administers the GSS. It takes a team of scholars from different fields and institutions to arrive at the final list. A key factor is whether they expect views on the proposed topic to change over time.

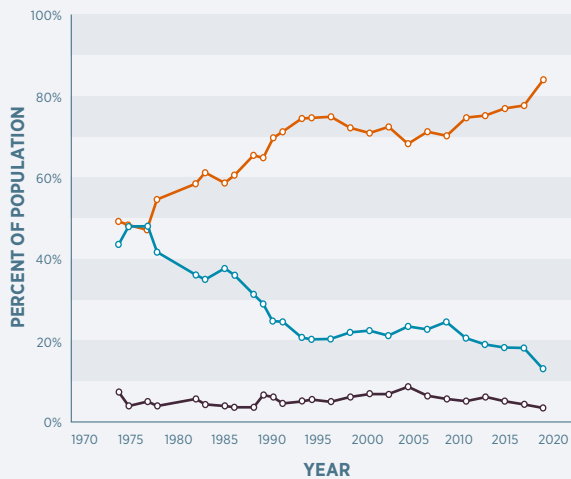
The latest GSS, conducted in 2018, included for the first time questions about respondents' relationships with their pets—an acknowledgment of changing definitions of companionship, Bautista says. Others have fallen off the national opinion survey; one question about attitudes toward married women working outside the home disappeared after 1998.

Conducting opinion polls isn't glamorous work, GSS founder Davis admitted in 1964. "There is a lot of misery in surveys," he wrote. But from the painstaking process emerge new insights. For his part, Bautista always looks forward to seeing the results of questions about government spending priorities. "It's fascinating how we can observe these changes seen in our society through the GSS."—S. A.

Over the past five decades, the GSS has asked Americans to share their views on social, economic, and personal issues. Here are a few notable trends.

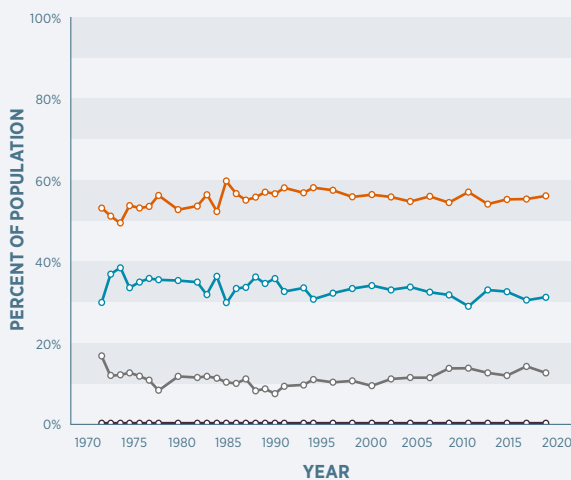
Are men better suited for politics than women?

● Agree ● Disagree ● Not sure



How happy would you say you are?

● Very happy ● Pretty happy ● Not too happy ● Don't know



New question in 2018

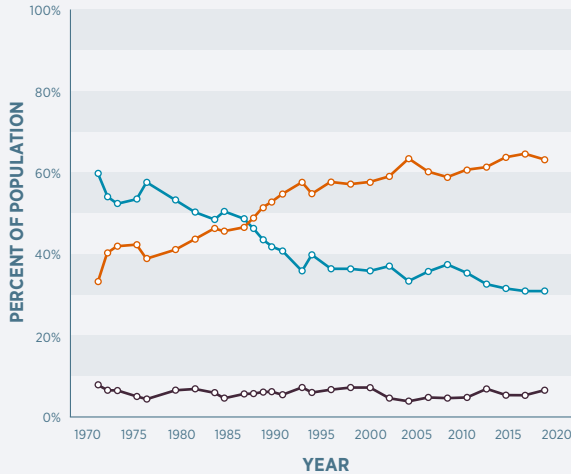
How often do you turn to your pet for comfort?



- Almost always
- Often
- Sometimes
- Never
- Don't know/no answer
- Not applicable

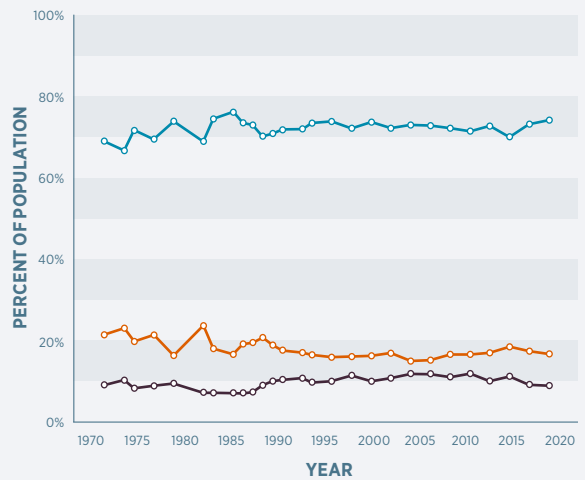
Should a communist teacher be fired?

● Fired ● Not fired ● Don't know



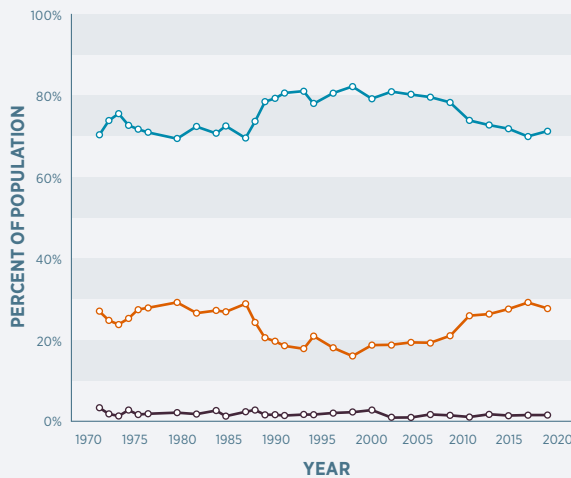
Do you believe in life after death?

● Yes ● No ● Not sure



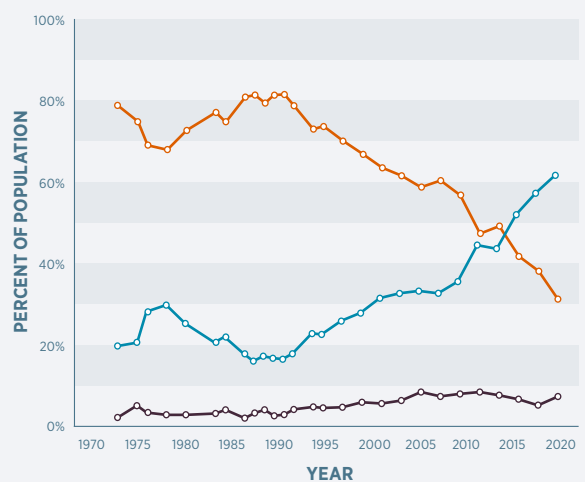
Do you favor or oppose permits to buy a gun?

● Favor ● Oppose ● Don't know



Should marijuana be made legal?

● Legal ● Not legal ● Don't know



Top cat

A University alumna connects human and feline communities in Chicago.

BY RHONDA L. SMITH

Dogs may be man's best friend, but when it comes to companion animals, cats win the popularity contest: more than 94 million feline friends can be found in US homes (second only to freshwater fish).

For ailurophiles looking for a companion or two, Tree House Humane Society has been a destination for almost 50 years. Founded in 1971 in Chicago's Uptown neighborhood, the shelter is run today by **Raissa Allaire**, AB'97, AM'02, its executive director since May 2018.

Prior to Allaire's arrival, Tree House experienced a few years of turmoil, including leadership changes and disagreements over the shelter's mission and values—while also raising \$7 million to construct a new eco-friendly shelter, which opened in 2017 in Chicago's West Ridge neighborhood. During her first few months, Allaire went on a listening tour and shadowed staff members so that she could learn how the organization functioned. "I talked to everyone. I talked to staff, I talked to board members, former board members, supporters of Tree House, people who were not happy with Tree House." That gave her a better picture of what the organization meant to the community and what it should do better.

Allaire joined Tree House after almost 12 years at the Center for Economic Progress, a move prompted in no small part by her family's adoption of two cats from the Oak Park Animal Care League in 2016. About a year after bringing Sulley and Sal home, she learned about a feral cat colony under a neighbor's care. The discovery was



At Tree House's eco-friendly shelter, it's all about the cats. While waiting for their forever homes, cats live in colonies designed for their comfort, including lots of perches and heated floors.

eye-opening; the more she learned, the more she realized that animal welfare is a complex issue that goes well beyond pet adoptions. When she saw the Tree House position, it seemed like a great opportunity to merge her nonprofit management skills with her newfound passion.

Running a cat shelter, she's found, isn't just about the cats—it's also about the community. "As I've been in this seat for a year, I've seen a lot of intersections between animal welfare and poverty, animal welfare and mental health. So it's been kind of interesting to apply some of what I've learned in the social impact space to Tree House," Allaire says.

Under her direction, Tree House has expanded its outreach, forging more collaborations with other organizations, such as senior centers, and opening a cat café to bring Chicagoans into the shelter. (For more on the café, visit mag.uchicago.edu/treehouse.) It has also emphasized its Community Cats and Cats at Work Programs, which include a trap-neuter-return strategy to maintain neighborhood colonies and to place colonies with businesses and

residential areas for rodent control. Work is also proceeding on a low-income cat and dog clinic, which Tree House hopes to open in 2021.

Some of this work may end up on the big screen. Shortly after Allaire arrived at Tree House, she was contacted by the Scrappers Film Group, run by **Brian Ashby**, AB'06; **Ben Kolak**, AB'06; and **David Schalliol**, AM'04, PhD'15. They want to make a documentary that examines urban issues in Chicago through the lens of the city's outdoor cats. It's still in the earliest stages, but the aim, Kolak says, is to "follow some of the cat colonies longitudinally for a few years to really get a sense of neighborhood change." The fragility of the cats that live on the streets of Chicago "has a real tie-in and is packed with other social issues" reflected in the city's human populations.

Some may contend the cats won't appreciate the staff's hard work, but Allaire disagrees: "I think they get a bad rap sometimes." In spite of their reputation for aloofness, she's seen the joy and comfort they can bring. Their detractors, she believes, just haven't had enough experience with cats or haven't met the right one. ♦

ON THE ROAD



Where in the world is Phil the Phoenix? This year, UChicago College Admissions counselors began taking their mascot along as they visited schools around the world. So far, Phil has collected passport stamps from countries including Cambodia, Costa Rica, India, Italy, Mexico, Singapore, and the United Kingdom. Like any good tourist, the intrepid bird took lots of photos along the way. Here, he poses at a United World College campus in Karuizawa, Japan. The signs above show the distance to the 17 other UWC locations globally. (Alumni of these international high schools can receive scholarships to attend UChicago through the Davis UWC Scholars Program.) With admissions travel season winding down, Phil has temporarily shelved his Ziploc of three-ounce toiletries. But we have no doubt he'll be struck by wanderlust before too long—and when he is, you can follow along on Instagram at @uchicagoadmissions.—S.A. ♦

QUICK STUDY

MEDICINE

Pollution on the mind

Living in places with poor air quality increases the risk of a host of psychiatric disorders, an August 20 paper in *PLOS Biology* found. Professor of medicine and human genetics **Andrey Rzhetsky** and computational biologist **Atif Khan** were among a team that analyzed inpatient and outpatient claims from a US health insurance database of 151 million individuals against levels of 87 air pollutants across the nation. The most polluted counties had 27 percent more bipolar disorder and 6 percent more major depression. To validate the findings, the researchers turned to national treatment registers of 1.4 million people born in Denmark. They found 29 percent more bipolar disorder in the most polluted counties there, and an even stronger correlation than in the United States between early childhood pollution exposure and major depression, schizophrenia, and personality disorders.—L. D. ♦



“The power of social media is that it gives you depth, vulnerability and multiple perspectives,” Desmond Patton, PhD’12, has said.

COMPUTER SCIENCE

Tech support

How Desmond Patton, PhD’12, unites social work and social media.

BY LAUREN LARSON, AB’12

In April 2014 a Chicago teenager named Gakirah Barnes took to Twitter—not, as she sometimes did, to post photos of herself posing with guns or to threaten

rival gangs—but to grieve. Her friend Raason “Lil B” Shaw had been fatally shot by a police officer. The pain, Barnes wrote, was “unbearable.”

Eight days later, Barnes, 17, was dead too, shot nine times in the chest, neck, and jaw. She was memorialized in the media as “Chicago’s Gun-Toting Gang Girl” and “Lil Snoop,” a reference to the cold-blooded killer on *The Wire*.

Social worker **Desmond Upton Patton**, PhD’12, saw the coverage, which led him to Barnes’s Twitter account. Reading her tweets, he recognized the hardened figure described in news reports but also saw a young woman, apparently sleep-

less at 2:41 a.m. on a Thursday morning, sharing her sorrow with the world. What would have happened, Patton wondered, if someone in a position to help had seen the suffering in her tweets?

It wasn’t the first time Patton had thought about how social media was shaping young lives. As a graduate student at the School of Social Service Administration, he wrote his dissertation about how high schoolers on Chicago’s West Side navigated violence in their community; Twitter, they told Patton, was an important platform, because it helped them spot and avoid brewing conflicts.

URBAN STUDIES

QUICK STUDY

Bright lights, safer city

Shining a light on high-crime areas of New York City makes those spots safer, found a May 2019 National Bureau of Economic Research working paper by a team that included the UChicago Crime Lab’s **Jason Lerner** and **Lucie Parker**. The researchers identified 80 public housing projects with high rates of the most serious crimes—murder, robbery, and felony assault, for example—and worked with the city to install temporary light towers in half. The 40 communities and the towers’ locations within them were randomly selected. Nighttime crimes near the towers fell by 60 percent, and the larger complexes saw a 36 percent drop. Knowing from previous studies that violent crime tends to be geographically concentrated and that criminals focus on short-term factors when deciding to commit a crime, the researchers argue that small changes like the towers have the power to make a significant impact.—L. D. ♦

Photography by John Pinderhughes

STOCKHOLM STATS

Nobel and Nobel
Memorial prizes
awarded to date

597

Laureates affiliated with
UChicago as faculty,
students, or researchers

92

Age of the youngest recipient
at the time of the award

17

Age of the oldest, 2019
chemistry laureate **John
Goodenough**, SM'50, PhD'52

97

Laureates who are
UChicago alumni

34

Laureates currently
on the faculty

5

Alumni laureates on
the faculty

2

Nobel medals in UChicago
Library collections

7

Patton is still grappling with the influence and power of social media. Now the founding director of Columbia University's SAFElab, he's developing software that analyzes patterns of online behavior among at-risk youth. He hopes the tool will help social workers and outreach organizations intervene in positive ways.

One of SAFElab's most significant findings, published in *npj Digital Medicine* last year, is that aggressive social media posts often follow posts about grief. Young people turn to social media to express reactions to personal trauma and loss, but then a broad network of people engage with those reactions, in ways both well-intentioned and hostile. That's precisely what happened to Barnes, whose grief-filled tweets prompted taunts from a rival gang member.

"That is a very common practice, because being tough on- and offline is an important way in which you stay safe," Patton explains. "If we don't like each other, one of the ways in which we show how bad we are is, 'I'm going to follow you and every time you say something, I'm going to say something back to you.'" When a rival responds to an expression of grief—even just by replying with an emoji—the interaction can spiral into online and sometimes offline aggression.

The software is in its early stages, and part of the work ahead for Patton and his collaborators is determining how it can best be used. When the technology is ready, they plan to partner with community-based organizations and figure out when, where, and how to put it into action. But he's certain of one thing: the tool isn't able or intended to predict crime. "This isn't *Minority Report*," he says.

For the time being, Patton is focused on making the tool fairer and more accurate. Social media language is ever changing and extremely local. Law enforcement can monitor social media for threats, but that data is useless without the ability to parse out meaning on a local level. It's taken Patton and 25 fellows, research

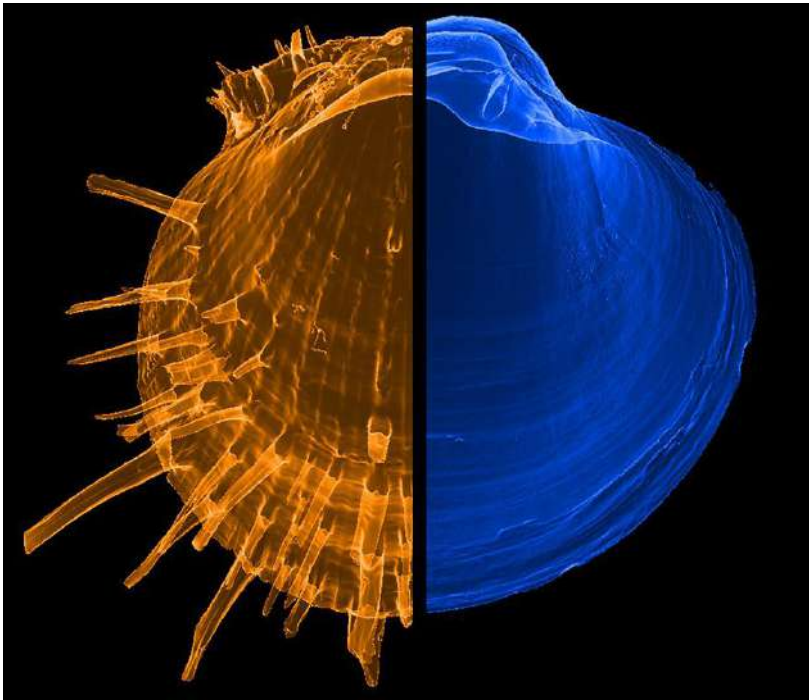
assistants, and collaborators several years to reach 72 percent accuracy with their algorithm—meaning that 72 percent of the time, it correctly labels content related to grief, substance abuse, and aggression.

Now Patton has "an army" of community members who help him interpret the patterns he sees. He relies heavily on their help in decoding linguistic quirks from place to place. In New York City, for instance, the purple grinning devil emoji has a sexual connotation, but in Chicago that same emoji, when paired with an implicit threat, might signal an imminent violent act.

Still, the complexity of online language hasn't stopped police and attorneys from deploying social media during legal proceedings. All over the country, posts from black and Latino young people have been used as proof of gang involvement. But too often, critics of this practice argue, courts ignore a crucial fact: teenagers posture. Without context, it's impossible to separate criminality from swagger. That's why Patton is taking his time developing the tool and is wary of similar software already in use by police departments.

There's good reason to be cautious. Patton and his colleagues have already found biases in their own system. "Our algorithm kept identifying stop words—like 'duh,' 'uh,' and 'uhn'—as being related to aggression," Patton says. "When we dug a little deeper, we saw that some of those patterns of speech are also intrinsically connected to African American Vernacular English." The team fixed the problem, but the discovery shook them.

Patton wants a tool that helps rather than harms, one that allows social workers, the courts, and the public to better understand the lives of young people who get written off as dangerous. For every tweeted threat, there is another post—about friendship, or loss, or fear—that tells a different story. "Most people are using these platforms for support," Patton says. "They're looking for help." ♦



A *Spondylus americanus* (left) from the Florida Keys, a tropical mollusk species with long spines, and *Arctica islandica*, found only in cold waters like the Gulf of Maine.

EVOLUTION

A little latitude

Why does biodiversity wax near the equator and wane approaching Earth's poles?

BY LOUISE LERNER, AB'09

Among all of the world's natural kingdoms, one rule reigns supreme: there are lots of different species at the tropics, but the numbers drop off sharply as you move toward the poles. "This holds true across virtually all kinds of life and in all kinds of environments, but the reasons why are still hotly contested," says **David Jablonski**, the William R. Kenan Jr. Distinguished Service Professor of Geophysical Sciences, whose research on mollusks has helped shape the study of evolution, extinction, and biodiversity. "This is a fundamental question that goes back before Darwin," he says. The stakes of understanding the geography of biodi-

versity are big. For one thing, it could help scientists project how species will adapt to climate change.

Scientists have traditionally researched one aspect of biodiversity at a time: the number of species in a region, the species' form (the shape of an organism's body), or their ecological function (the way they "make a living"). For example, a clam's shell can be spiny or smooth, and it can survive by eating sunken logs off a coast or by filtering plankton in tidal flats. All three ways of looking at the animal tell you something different about evolution, niches, and patterns of biodiversity. But each is so complex on its own that any two are rarely studied in unison, let alone all three.

Jablonski believes integrating these approaches could yield important insights. Two recent publications from his lab combine the expertise of different kinds of specialists to investigate the biodiversity shift from tropics to poles.

In one study, Jablonski's team worked with UChicago bird biologist **Trevor Price** and his research group,

including **Matthew Schumm**, AB'18, to compare their mollusk data with Price's understanding of how the traits of bird species vary with geographical environments. In tropical birds, some ways to make a living are common to many species while others support just a few. Many species eat insects on tree branches, for example, but only a few semiaquatic birds eat lizards. This pattern persists midway into the latitudes, but at a distinct tipping point the number of ways to make a living declines, and the distribution of species among them evens out.

The same is true for mollusks, and that result "knocked our collective socks off," says Jablonski. "For animals, you don't get much different than a bird and a bivalve, but you see this strikingly similar pattern," adds **Stewart Edie**, PhD'18, a postdoctoral researcher in Jablonski's lab and, with Schumm, the joint first author of the study. "That usually suggests we're looking at a higher-order control that's operating on a large scale around the planet, both on land and sea."

The theory is that in the tropics, there's more room for fine-scale specialization among species—not just birds that eat seeds, but birds that eat one kind of seed, in one part of the environment (branches high in the forest canopy, for example). But at higher latitudes, the climate is more seasonal and more difficult to survive in, making it less viable to be a specialist. "A lot of the ways of life are still present; you just have to be able to eat every kind of seed, or live anywhere in the canopy," Jablonski says.

That would be a new insight about how biodiversity works, with implications for how functional diversity will respond to climate change. For example, the food supply could face new risks from parasites that attack "crops or plants we care about—species will arrive that can focus on specific hosts as it gets warmer."

A second study, led by Edie and postdoctoral researcher **Katie Collins**, turned to technology to analyze how the forms of mollusks change from

Photo courtesy Katie Collins

PSYCHOLOGY

City pickers

It's well documented in environmental psychology that adults strongly prefer natural to urban environments, but it's not well understood why. New research led by psychology doctoral student **Kimberly L. Meidenbauer**, AM'16, examined young children's wilderness love or lack thereof and whether the adult preference is innate. Meidenbauer and her colleagues, who published their results in the *Journal of Environmental Psychology*, spoke to 4- to 11-year-olds and their parents living in rural and developed settings. Both were asked to rank pictures of natural and built places, and the adults were questioned about their children's home and school environments. Children, they found, have a "robust preference" for urban settings that decreases with age. And the data suggested they reap the psychological benefits of green places regardless of preference, including better mood, lower stress, and reduced attention deficit hyperactivity disorder symptoms.—*L. D.* ♦

tropics to poles. The team used a micro-CT scanner to examine museum-held samples of 95 percent of all the species found in the Florida Keys and the Gulf of Maine, yielding a trove of 3-D images.

Most studies work with shell length and height only, but "of course that's not the whole picture," Collins says. With this data they were able to add shell ornamentation, shell thickness, and many other parameters. "Now we can put hard numbers on shell form where we just had general impressions before," says coauthor **Rüdiger Bieler**, curator of invertebrate zoology at Chicago's Field Museum and a member of UChicago's Committee on Evolutionary Biology.

Beaches in the Florida Keys are littered with large, brightly colored shells with spines, ridges, and knobs. But north of Cape Cod, the shells are

smooth, plain, and often small. At first blush this seems to indicate a massive directional shift in the forms species take at different latitudes. Particular species may have more elaborate shells near the equator as an adaptation to better protect themselves from the wider variety of predators, for instance.

That's not the only phenomenon that scientists found at work, though.

"It turns out there are plain shells everywhere," Collins says. In the tropics you find "a mix of plain and fancy species; the fancy shells just drop out of the mix as you go north."

Species are more likely to drop out than to adapt to the tougher conditions.

While some species transform to adapt to varied conditions, other species disappear at higher latitudes. "It looks like the high-latitude climate narrows down the range of viable shell forms, and some lineages are just frozen out, so to speak," says Jablonski.

This too has implications for humans as they continue to alter the climate and environment. "What this suggests is that species are more likely to drop out than to adapt to the tougher conditions at high latitudes," Collins says. "This could affect humans in a very real way. Bivalves serve a huge role in fisheries, and we don't know if the ones we like to eat most, like oysters or scallops or mussels, are going to disappear or move out of their accessible fishing grounds as the climate changes around them."

This study was done on modern species; the next step is to add fossils. (Scientists love mollusks because their shells are easily fossilized.) That, Collins says, will shed light on whether "the fancy lineages are more extinction prone or if they're stable."

Taken together, says Jablonski, the studies show that the diversity of animals' forms and the diversity of their functions "don't all change together on a global scale, and the mismatches tell us something new about the forces shaping life on Earth." ♦



David Jablonski got interested in mollusks because their easily fossilized remains have left a vast historical record.

For the record

ARTISTIC DIRECTIONS

Two UChicago arts programs began the 2019–20 academic year with new leadership. **Jacqueline Stewart**, AM'93, PhD'99, professor of cinema and media studies, was named director of Arts + Public Life, which works to advance the relationships between the University and the civic, cultural, and artistic communities of Chicago's South Side. Previously director of the Richard and Mary L. Gray Center for Arts and Inquiry, Stewart is succeeded in that position by **Seth Brodsky**, associate professor of music. The Gray Center supports collaborations between artists and scholars at UChicago.

RUSTANDY JOINS BOARD

Tandean Rustandy, MBA'07, founder and chief executive of PT Arwana Citramulia Tbk, has been elected to the University of Chicago Board of Trustees. His five-year term began in May. Rustandy is a member of the Chicago Booth Council and a past member of the Booth Global Advisory Board Asia cabinet. His belief in a socially beneficial approach to business was the driving force behind his decision to support expanded research and programming in social innovation and entrepreneurship through the Rustandy Center for Social Sector Innovation, one of many areas of the University he has supported.



NEW FUNDING MODEL FOR GRADUATE EDUCATION

A new framework for doctoral education in the Divinity School, Humanities Division, Social Sciences Division, and School of Social Service Administration will be phased in over two academic years beginning in fall 2020. Under the new approach, announced by Provost **Daniel Diermeier** in October, all enrolled PhD students will be funded for the duration of their programs at the guaranteed stipend level (currently \$31,000) plus full tuition and health insurance premium coverage. Teaching by PhD students will be structured as mentored

teaching experiences and separated from funding. And the total number of PhD students across a school or division will be fixed. Alongside this new funding model, the University will offer new career support for students, expand existing postgraduate teaching fellows programs, develop programs to help faculty become better mentors, and launch several initiatives to recruit and retain a diverse graduate student body.

REACHING OUT

In August the College Admissions Office expanded support for rural students and high school counselors through the UChicago Emerging Rural Leaders Program. Part of the UChicago Empower Initiative, the program was made possible by University trustee **Byron D. Trott**, AB'81, MBA'82, and his wife, Tina, longtime UChicago supporters and advocates of increasing college access for rural students. Empower expands financial support, on-campus programming, and online resources for first-generation students, rural students, and underrepresented students, beginning with the Class of 2023, who arrived on campus in September.



BEYOND THE MILKY WAY

After a decade building the instrument, a team led by astronomy and astrophysics associate professor **Jacob Bean** installed MAROON-X in Hawaii's Gemini Observatory to search other solar systems for exoplanets that could potentially host life. From its perch atop the observatory's Gemini North telescope, the instrument detects the infinitesimal gravitational pull that exoplanets exert on the stars they orbit, enabling scientists to identify the exoplanets and measure their masses. MAROON-X took its first readings on September 23.

MISSION DRIVEN

Chicago's Seminary Co-op Bookstores, a nationally recognized independent bookseller and a fixture of the Hyde Park community since 1961, announced its new status as the country's first not-for-profit bookstore

whose mission is bookselling itself. In making the change, said director Jeff Deutsch in an October email to members and friends of the stores, "we more accurately place the work of the Seminary Co-op in the realm of the cultural institution while still recognizing our primary mission as booksellers."

LANDMARK SCIENTIST

Albert A. Michelson, recipient of the 1907 Nobel Prize in Physics and the first US scientist to become a Nobel laureate, now has a campus namesake.



In August the Physics

Research Center became the Michelson Center for Physics—a workplace for 150 scientists exploring the nature of dark matter and dark energy, cosmic rays, black holes, and other questions about the universe. The building, which opened in 1965, underwent a wholesale renovation in 2017, including the addition of two floors. For more about Michelson, who is best known for taking the first accurate measurement of the speed of light, see "The Angle of Reflection," page 68.

RITE OF PASSAGE

For more than 55 years, incoming College students have gathered in Rockefeller Memorial Chapel during Orientation Week to hear a senior faculty member reflect on the purpose and nature of education in the Aims of Education Address. This year's address was given by School of Social

Service Administration dean **Deborah**

Gorman-Smith, a member of the UChicago faculty since 2012 who studies youth development and the prevention of violence. Her September 26 lecture stressed the importance

of challenging conventional wisdom and "learning by engaging outside the walls of the University." It was followed by faculty-led colloquia in the residential houses where students had an opportunity to discuss the address and share their views.





INTERVIEW

The field of his dreams

A Divinity School grad turns an academic double play.

BY JEANIE CHUNG

The son and grandson of Baptist ministers, **Joseph Price**, AM'79, PhD'82, grew up in Mississippi as a New York Yankees fan—partly because of the team's success in the 1950s and early 1960s, partly because of pitcher Don Larsen's perfect game in the 1956 World Series.

"I thought, here in a religious household, perfection is the goal," he says.

The intersection of sports and religion has fascinated Price throughout his career. At the Divinity School, the critical methods used in theological studies and comparative religions gave him a conceptual framework to apply to sports rituals and fandom. He explores sports as a form of "civil religion" in books, including *Rounding the Bases: Baseball and Religion in America* (Mercer University Press, 2006).

In 2014 Price and two colleagues at Whittier College, where he is professor emeritus of religious studies, founded the Institute for Baseball Studies, a humanities-based research center.

During a 2011 sabbatical Price, who sang in the Rockefeller Chapel Choir at UChicago, went on a cross-country quest to sing the national anthem in as many minor league ballparks as possible. He covered 28,712 miles

in a rented RV with his wife, sang at 104 games, and chronicled the trip in *Perfect Pitch: The National Anthem for the National Pastime* (Mercer, 2018).

The 2019 Divinity School Alumnus of the Year, Price talked with the *Magazine* in an interview that has been edited and condensed.

Is the anthem hard to sing?

If it's sung joyfully, it's really quite an easy song to sing. It's lilting. I sing it in a low key, which makes it more fan friendly. It's enjoyable to see fans singing along; it's sort of a choral work, and best when conceived in that way.

What has been your colleagues' response to the Institute for Baseball Studies?

Envy. "This looks like it's fun." "Your administration buys this?"

The institute has supported four courses dealing with the significance of baseball for American culture. We've taken students and alumni to Puerto Rico and to Cuba on study trips.

We frequently get asked, "Do you have a major or minor in baseball

studies?" No, but we do give an award each year to a student paper or project using the materials of the institute.

How is sports like a religion?

One way is the building of a community—the following that is engendered by becoming a fan. It's possible to be a sports atheist. There is also something fundamentally human about trying to secure a victory, as passing as it might be. Theologian Michael Novak pointed out that the experience of defeat in a sport is a way to rehearse how one will deal with death. Issues of life and death are dramatized in a timeframe of sports competition that reflects questions of ultimacy. And that's fundamentally a religious question.

There are also, of course, the myths that shape lives and teams. The histories of the players, the relics. The foul ball touched by Steve Bartman during a Cubs playoff game in 2003 became a relic that needed to be destroyed.

What is your take on former NFL player Colin Kaepernick and protests during the anthem?

His kneeling was actually a much greater sign of respect than the fans who continued to sit on blankets and talk while I was on the tour. He also was able to raise consciousness about issues of racial oppression.

What's your next project?

It's on the closing rituals of baseball parks, especially the significance of removing home plate. What happens when home plate is removed from the ballpark? Usually it's transported in dramatic ways to the new site, much in the way the cornerstone of an old church sanctuary building would be transported for perpetuity to a new site.

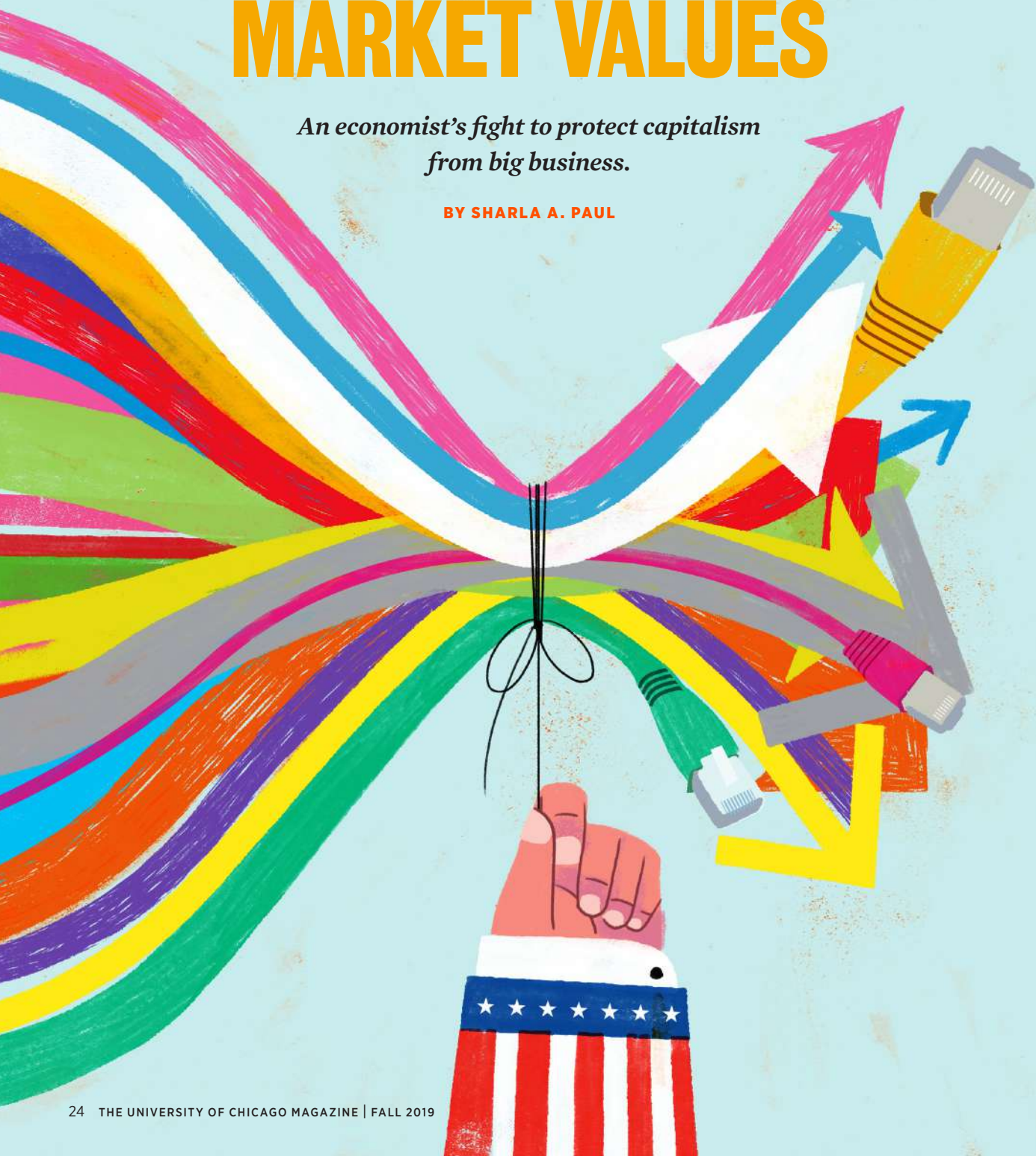
I'm also cowriting a book with my longtime friend **Don Musser** [PhD'81]. He and I have a 40-year-friendship that began in the Divinity School. We're tentatively calling it "The Autobiography of a Friendship." ♦

ECONOMICS

MARKET VALUES

*An economist's fight to protect capitalism
from big business.*

BY SHARLA A. PAUL





In his 2019 convocation speech, Luigi Zingales told graduates, “To fight monopolies, your power as workers, consumers, and investors is not sufficient. Your participation in the political process is critical.”

One of the busiest corners of the globe at the opening of the year 1872 was a strip of Northwestern Pennsylvania, not over fifty miles long,” journalist Ida Tarbell wrote in 1902. In the span of just 12 years, those once quiet Pennsylvania hills were overrun with hardy young entrepreneurs seeking to make their fortunes from a new product: petroleum. But the days of bustling competition did not last.

“At the very heyday of this confidence,” Tarbell went on, “a big hand reached out from nobody knew where, to steal their conquest and throttle their future.”

The throttling hand was that of John D. Rockefeller. By 1880 his Standard Oil Company controlled about 90 percent of the oil produced in the United States, including its transport, refining, and marketing. Rockefeller pioneered market domination by undercutting prices across all areas of the oil business and buying up his competitors.

For a cohort of eight journalists on campus at the University of Chicago Booth School of Business this past spring, Tarbell’s two-year 19-article exposé on Standard Oil—widely considered to be the birth of investigative journalism—served as both inspiration and how-to guide.

Credited with exposing the deleterious effects of monopolies on society, as well as inspiring government efforts to counter them, Tarbell’s muckraking series “created the political demand for intervention,” Chicago Booth economist **Luigi Zingales** explained in a recent episode of his podcast *Capitalism’t*. In 1911 the Supreme Court ordered the dissolution of Standard Oil into 34 individual companies. (Rockefeller, who referred to Tarbell as “Miss Tar Barrel,” became the nation’s first billionaire and spent the later years of his life giving away much of his fortune, including funds to found the University of Chicago.)

Journalists and business school professors may seem like strange bedfellows, but not to Zingales, the faculty director of the George J. Stigler Center for the Study of the Economy and the State. In 2017 he launched the Stigler Center Journalists in

Residence program. For the reporters who participate, it's a taste of the business school experience and a crash course in economic theory: they audit classes, meet scholars, and attend special events.

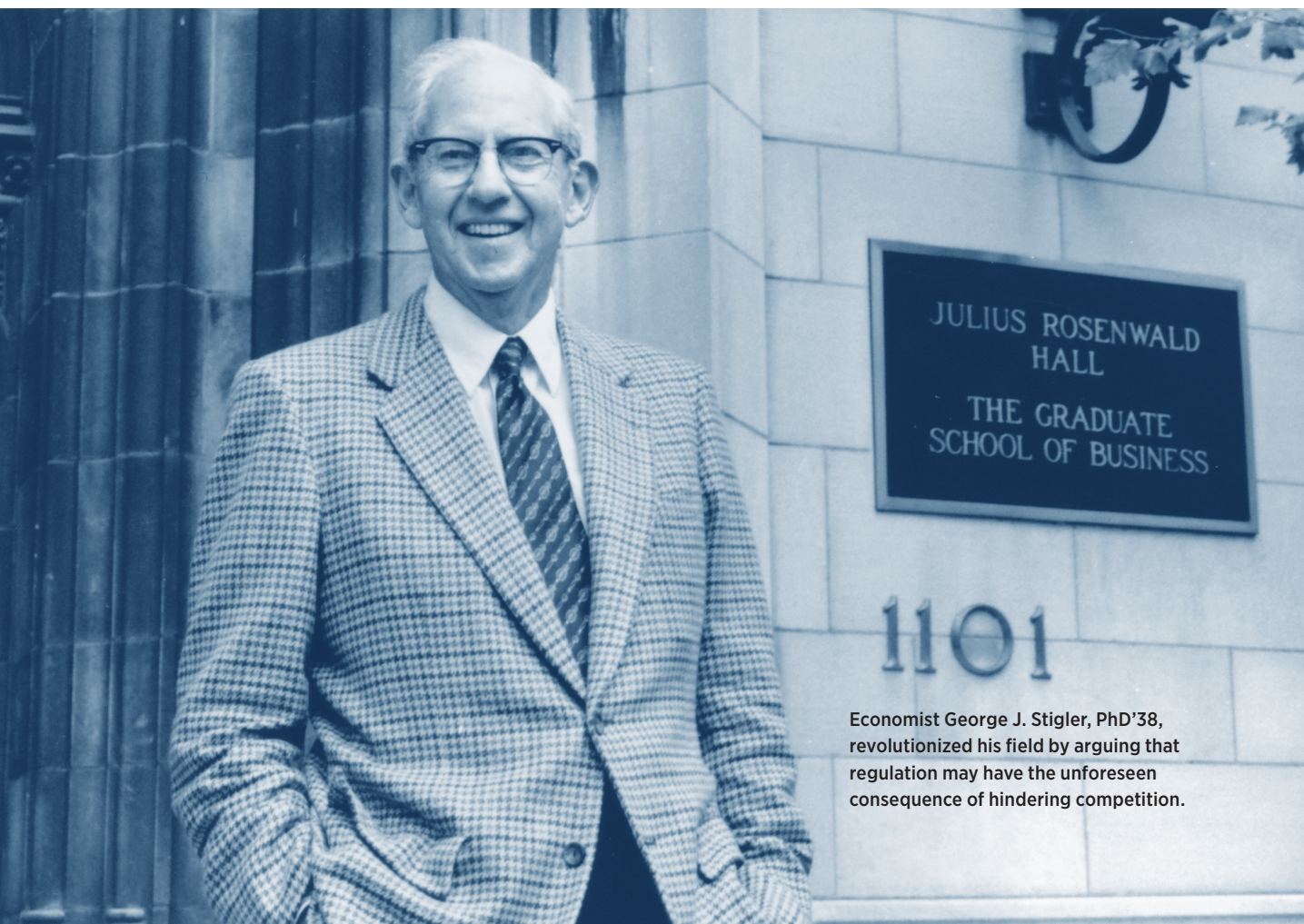
Why invest in the next generation of muckraking? Because, in Zingales's view, capitalism depends on it. He believes investigative journalism is a major reason why American capitalism has historically been so successful compared to the "crony capitalist" systems that prevail elsewhere. Take his native Italy, where, he has argued, personal connections—not merit or competition—determine who wins in the marketplace.

The guiding idea behind the residency is that journalists in the trenches—filing pieces on the daily and weekly happenings of the business

world and exposing special interests that aim to subvert markets for their own gain—help create a demand to keep markets free.

"Inquisitive, daring and influential media outlets willing to take a strong stand against economic power are essential in a competitive capitalist society," Zingales wrote in the *Financial Times* in 2015. "They are our defense against crony capitalism. When the media outlets in any country fail to challenge power, not only are they not part of the solution, they become part of the problem."

The problem, as Tarbell's oil capitalists experienced and as the Stigler Center recognizes, is that capitalism itself is so fragile.



Economist George J. Stigler, PhD'38, revolutionized his field by arguing that regulation may have the unforeseen consequence of hindering competition.

Adam Smith's invisible hand and the free-market laissez-faire approach so famously espoused by Chicago economists can easily be shackled by special interests (see page 31). These include price-cutting monopolies like Rockefeller's Standard Oil; competition-shy incumbents aiming to deter new market entrants; and rent-seeking corporations that look to the government for an advantage in the marketplace via subsidies or regulatory capture—that is, when laws increase the market advantage for the very firms meant to be regulated.

It was UChicago Nobel Prize-winning economist George J. Stigler, PhD'38, the eponymous founder of the Center for the Study of the Economy and the State, who first questioned the impact of regulation on competition and who in 1971 put forward the idea that industry “acquires” regulation for its benefit. His two-part hypothesis: one, industries will wield whatever political power they have to prevent new competitors from entering the market, and two, regulations will be written to slow those new entrants’ growth.

Before Stigler, regulation had been studied entirely from a content perspective—in other words, how the rules were written to prevent market failure and protect consumers from unfairly high prices. Not questioned was the assumption that regulation itself, particularly of natural monopolies such as public utilities, was necessary. So Stigler and his coauthor **Claire Friedland**, AM'55, took up the study of electricity regulation, aiming to understand the actual outcomes of such controls, as opposed to the intentions. Did regulation keep prices for consumers down? By comparing areas with varying degrees of electricity oversight from the early 1900s to 1960, Stigler found that the price difference was negligible, casting doubt on the need for regulation at all.

ECONOMISTS FOLLOWED STIGLER'S LEAD IN EXAMINING THE REAL- WORLD EFFECTS OF REGULATION AND STOPPED TAKING FOR GRANTED THAT REGULATION ACCOMPLISHES WHAT IT INTENDS.

The finding shocked economists. “I can’t tell you how important it was,” says **Sam Peltzman**, PhD'65, a graduate student of Stigler’s who took over directing the center after Stigler’s death in 1991. “What happened next was a period of great ferment.”

Over the subsequent decades, economists followed Stigler’s lead in examining the real-world effects of regulation and stopped taking for granted that regulation accomplishes what it intends. Stigler’s 1982 Nobel citation states that his work “resulted in fundamental testing of the forces, purposes and effects” of legislation.

For his part, Peltzman, the Ralph and Dorothy Keller Distinguished Service Professor Emeritus of Economics, carried on Stigler’s work by digging into the more nuanced outcomes of regulation. He put forward a model for analyzing the trade-offs

and unintended consequences of such rules. Peltzman argued that even the most beneficial of regulations still have trade-offs, because people tend to change their behavior in ways that counteract the regulation’s aim. The most famous example of what is sometimes called the Peltzman effect is car safety regulations. In a 1975 paper he argued that, although safety features including seat belts saved lives, a portion of the benefit was offset by increases in reckless driving and nondriver deaths.

Later, in a 1983 paper, Nobelist Gary Becker, AM'53, PhD'55, offered his model of regulation, in which he noted that interest groups are not a monolithic bloc but consist of competing interests. As he explained in the *Wall Street Journal* in 2010, “Once you’ve got a piece of legislation in place, interest groups grow up around it.”

Overall, Stigler set in motion an understanding for which Chicago economics has become



In July executives from Google, Facebook, Amazon, and Apple testified in a congressional hearing on antitrust issues—a sign of mounting public concern that technology titans are curbing competition and innovation.

known: that the outcomes of regulation and government intervention, such as antitrust litigation, are complicated, to say the least—and, at worst, can end up hurting competition and hampering free markets.

This brings us back to the Stigler Center today, where its current director, Zingales, is in the surprising position of arguing that the pendulum against antitrust and government regulation has swung too far.

“My claim is that part of the change in attitude is due to a change in surroundings,” he says in his office the day before convocation, when he will speak to 2019 graduates about their political power as consumers. “The world today is completely different from the world in the 1970s.”

A little more than a century after Progressive Era figures like Tarbell and Senator John Sherman intervened against Rockefeller, the economy has cycled through the Great Depression, the increasing regulatory environment of the 1950s and '60s that Stigler studied, and the economic contrac-

tion of the 1970s, which, “as a result, in part, of the triumph of the ideas of the Chicago school,” Zingales says, was followed by a reduction in regulation and an era of innovation and economic expansion, lasting until the 2008–09 meltdown of the financial sector.

Now the Stigler Center has cast its gaze on Silicon Valley and its digital titans, Amazon, Apple, Facebook, and Google. This fall, wrapping up a large-scale effort to examine the current shape of economic concentration and its effects in the United States, the center issued its assessment: there is little evidence the market will, or can, rein in these companies’ increasingly unchecked power.

The finding drew from the work of 30 experts from across the country; representing the fields of business, economics, law, and political science, they spent a year researching and debating whether monopoly has reached a worrisome level. The ultimate question was what to do about, to use Tarbell’s phrase, the “big hand” of tech giants in the marketplace.

**MY CLAIM IS THAT
PART OF THE CHANGE
IN ATTITUDE IS DUE
TO A CHANGE IN
SURROUNDINGS.**

One surprising and much-debated conclusion was to create a digital authority to regulate the industry. In May Yale economist Fiona Scott Morton, who led the Stigler Center group that analyzed the market structure of the digital platforms, quietly delivered the recommendation to the US Senate as part of hearings on digital advertising and competition policy. Zingales spent the summer getting traction on the idea of a digital authority. In July *Fortune* magazine ran a feature on the center's proposal to tailor regulations to limit big tech's power, and in September the *New York Times* business section trumpeted, "Chicago School Professor Fights 'Chicago School' Beliefs that Abet Big Tech."

Peltzman, however, isn't convinced that a new regulatory authority will work. "It's just not the right tool to address the nonexistent problems," he says. "I'm skeptical. Having said that, it's certainly relevant to have a discussion. I hope we have a discussion instead of a crusade."

In an episode of the podcast *Capitalisn't*, Zingales faced similar criticism from George Mason University economist Tyler Cowen, a panelist at the center's conference on digital platforms and the author of *Big Business: A Love Letter to an American Anti-Hero* (St. Martin's, 2019).

"I would stress the negative secondary consequences of regulation," Cowen warns on the podcast. Setting up a regulatory agency, he argues, "is a very dangerous step. It's an entry barrier. It's an opportunity for rent seeking. It will limit innovation."

As the economists, law scholars, and political scientists debate, one thing is certain: the Stigler Center's journalists have been all ears. The purpose of the residency program, after all, is to educate the journalists. How they use what they learn is up to them.

THE INFLUENCE AND EFFECT OF THESE PLATFORMS ON MARKETS ... ARE PARTICULARLY CHALLENGING TO GRASP BECAUSE THEY DON'T FIT OLD MODELS OF MONOPOLY.

All spring Adam Creighton was on fire with the ideas he was encountering at UChicago. The economics editor for the *Australian* and a 2019 Stigler Center journalist in residence, Creighton filed stories and columns that bore the fingerprints of the classes he was taking and scholars he'd met during his 12 weeks

in Hyde Park. In one piece he argued that patents create "artificial monopolies"; in another, a critique of Australia's retirement savings system, he cited UChicago's own **Eugene Fama**, MBA'63, PhD'69, and **Richard Thaler**.

Meanwhile, in Bengaluru, the Silicon Valley of India, the *Economic Times*'s Megha Mandavia, a 2018 Stigler resident journalist, was helping her readers make sense of unfolding efforts to tax Facebook and Google. The move would help the Indian government reap some of the vast profits the companies generate from citizens via

advertising and data monetization.

In the United States, from the Election 2020 desk at the *Wall Street Journal*, another 2018 Stigler resident journalist, the Pulitzer prize-winning reporter Jacob Schlesinger, published three pieces in June on the many challenges presented to policy makers by Amazon, Apple, Facebook, and Google. The influence and effect of these platforms on markets, he wrote, are particularly challenging to grasp because they don't fit old models of monopoly that would signal harm to consumers and trigger antitrust action: the combination of higher prices and less choice.

"Free services are good for consumers," Schlesinger wrote. "Monopolies tend to be bad for them. The big tech platforms have elements of both—a combination that is vexing policy makers around the world as they struggle to figure out how best to police American technology behemoths and their unusual business models." The outcome, he and colleagues reported in a subsequent piece, is a "mounting backlash" against technology



An ongoing conversation: Chicago school luminaries Stigler (right) and Milton Friedman, AM'33.

giants “that threatens to raze the four-decade-long Washington consensus to defer to markets in setting boundaries for corporate competition.”

On campus, at the last Friday noontime seminar of the spring 2019 quarter, this year’s journalists gathered for a pizza lunch with Chicago Booth’s **Austan Goolsbee**, who chaired President Barack Obama’s Council of Economic Advisers and is the Robert P. Gwinn Professor of Economics. After Goolsbee gave a short overview of his research, the questions began. Xinning Liu of the *Financial Times* asked about the US-China trade war, trying to understand the real-time and potential long-term implications of President Donald Trump’s proposed tariffs.

Other journalists peppered Goolsbee with equally timely questions about the outcomes of a recent Federal Reserve conference, whether a recession is on the horizon, the student debt bubble, the viability of the wealth tax, his thoughts on universal basic income, and his favorite in the 2020 presidential race. Asked what he thought of the idea of a digital authority, Goolsbee wondered aloud how it would work in practice.

After the session, the *Australian’s* Creighton gave his own take on the proposed digital authority: “It’s not very *Stiglerian*.”

THE CONTRIBUTION OF STIGLER IS GREAT, BUT MOSTLY TO LEARN WHAT WE SHOULD NOT DO.

The comment doesn’t faze Zingales, whose work as he carries on the legacy of Stigler requires him to grapple with what makes an idea “Stiglerian.”

“I think, and I’m sure I’m not alone here, that the contribution of Stigler is great, but mostly to learn what we should not do,” he says later, back in his office. Stigler’s work shouldn’t be used as a justification for sitting back and doing nothing, Zingales argues. “I think that the absence of regulation can be as bad as, and sometimes worse than, bad regulations. ... I’m very happy to come to a conclusion, if you convince me, that maybe the intervention is not worth the effort. But starting with the presumption that nothing can be done? That’s the kind of ideological block that I would like to avoid.”

So what does Zingales believe is Stiglerian? It depends—and that was true even for Stigler, he says. He notes that Stigler’s views also evolved to fit the times, citing the economist’s 1952 *Fortune* magazine article “The Case Against Big Business.” In it Stigler argued for breaking up large corporations when necessary, writing, “This, I would emphasize, is the minimum program, and it is essentially a conservative program.”

Zingales lets the effect of Stigler’s statement sink in.

“Wait a minute,” he says, “what is so conservative about that?”

In 1952 Stigler saw no economies of scale in big business and argued that it was better to break up than to regulate large firms. But those ideas

evolved under the influence of another UChicago economist, the late Harold Demsetz, who established that big business tends to be more efficient. Zingales’s point: what’s conservative depends on the evidence and the context—and maybe what’s Stiglerian does too.

“If the world around you changes, you should change your prescriptions,” Zingales says. “If you don’t, it’s called ideology. ... I don’t say, whatever Stigler said in 1970, it cannot be changed. That’s religion, not research.” ♦

Sharla A. Paul is a writer and editor in Hyde Park.



PRO-MARKET OR PRO-BUSINESS?

A primer on subversive special interests.

In *The Wealth of Nations* (1776), Adam Smith posited that competition is the essential ingredient that makes a market economy work and that a competitive market system ends up benefiting everyone. Two hundred years later, George J. Stigler, PhD'38, outlined how governmental regulation interferes with the healthy functioning of that system. Now, Stigler Center director **Luigi Zingales** and others are keeping a watchful eye on how new forms of special interest in business and government can intrude too. Here, according to Zingales and the other editors of the Stigler Center's blog, *ProMarket*, are several key ways special interests can subvert capitalism and undermine the public good.

ANTITRUST Pro-business versus pro-market. "Businessmen like free markets until they get into a market; once they are in it they want to block entry to others," Zingales explained in 2012. "Pro-marketeters want free markets at all times."

According to the *ProMarket* editors, a good way of telling where someone lands on the pro-business–pro-market continuum is their stance on antitrust policy. "Pro-business usually favors incumbents"—established firms—"while pro-market calls for aggressive antitrust enforcement to facilitate competition," they write.

CORPORATE GOVERNANCE "The system of formal and informal rules by which a company is governed," according to the *ProMarket* editors. "Corporate governance therefore affects and is affected by the degree of cronyism and rent seeking in society."

CRONYISM When who you are or who you know determines who gets a job or a contract, or when a monopoly so dominates a marketplace that efficiency and innovation no longer matter, that's cronyism at work. Italy practically invented cronyism

and nepotism, Zingales claims, beginning when the natural children of Pope Alexander VI were called "nephews" and given plum positions in the Catholic Church. The result is a vicious cycle, with "incompetent nephews and stupid cronies" tending to hire subordinates of equal or lower quality, eroding human capital, causing firms to resort to lobbying when threatened, and systematically harming even successful economies.

MONEY IN POLITICS "The ones who are the best at business these days are the ones who are best at lobbying, not at making gadgets or new ideas," says Zingales. He has proposed taxing lobbying ("the best way to discourage a behavior is to tax it," he quips), as well as the powerful tool of "naming and shaming" firms that engage in excessive lobbying.

REGULATORY CAPTURE In his 2019 convocation speech, Zingales recalled: "George Stigler ... has taught us that regulation tends to be shaped—what we economists refer to as 'captured'—by the very companies it is supposed to discipline. It increases their power rather than reducing it."

In his landmark 1971 paper, Stigler outlined the "supply" and "demand" for regulation, proposing that industry "acquires" regulation, and that regulation is "designed and operated" primarily for the benefit of industry. Zingales often gives the example of the Dodd-Frank Act, meant to police the financial services industry following the 2008 crisis, and its Volcker Rule. The regulation is so complicated that it's nearly impossible to enforce—which, he argues, is why banks wanted it.

RENT SEEKING Rent seeking is "when one group tries to obtain privileges from the government to secure profits beyond those available under well-functioning markets," according to *ProMarket*. Examples include tariffs, subsidies, and the 2007–09 bailouts for "too big to fail" banks. ♦



LEGACY

BY THE DOZENS

Microbiologist Maurice Hilleman, PhD'44, developed 40 vaccines with the help of some feathered friends.

BY MAUREEN SEARCY

Maurice Hilleman, PhD'44, was born in 1919 near Miles City, Montana, during the deadliest influenza pandemic in history. When the next global influenza pandemic arrived, Hilleman was in the position to save thousands of lives, thanks in part to his Montana roots.

Before Hilleman, who died in April 2005, became the world's most prolific vaccinologist, with a portfolio including vaccines for measles, hepatitis, meningitis, and more, he was a farm boy. His family sold fruit, poultry, and eggs to make ends meet through the Great Depression. He briefly worked at J. C. Penney, but his brother convinced him to apply for a scholarship to college.

After graduating first in his class at Montana State University and earning a doctorate in microbiology at the University of Chicago, he joined pharmaceutical company E. R. Squibb—much to his mentors' chagrin. Chicago graduates were expected to become academics, he explained during an interview for Paul Offit's 2007 biography *Vaccinated: One Man's Quest to Defeat the World's Deadliest Diseases* (Smithsonian Books). But Hilleman had had enough of the academy. "I came off a farm," he said. "I wanted to make things!"

By 1944 Squibb had already developed a typhus vaccine for US soldiers. During his four years there, Hilleman helped develop and mass produce an influenza vaccine—an experience he drew on later, in 1957, when a flu epidemic broke out in Asia. Hilleman, by that time chief of the Department of Respiratory Diseases at the Walter Reed Army Institute of Research, recognized that the outbreak could grow into a pandemic. He knew he could help.

After isolating the so-called Asian flu virus, Hilleman tested it against the blood of hundreds of servicepeople and civilians. None had antibodies to the virus. He sent samples to public health organizations, which tested it globally. Only elderly survivors of an 1889 pandemic were immune. That virus was back—and could sweep across the world.

But the US Public Health Service and the military-based Influenza Commission dismissed Hilleman's worries. They called him crazy, Hilleman told Offit, so he contacted six manufacturers directly, bypassing the principal American vaccine regulatory agency. When Asian flu arrived in the United States during the first week of September, as Hilleman had predicted almost to the day, vaccinations had already begun. By late fall, 40 million doses had been distributed.

The 1957–58 flu pandemic killed as many as two million people worldwide, about 70,000 in the United States. Some estimated a million Americans would have died without Hilleman's vaccination campaign. The speedy response would have been impossible had he not advised: don't kill the roosters.

From his coop-tending youth, Hilleman knew that farmers typically killed their roosters late in the hatching season. But making millions of doses of influenza vaccine requires millions of fertilized eggs to incubate the virus. Hilleman warned the manufacturers to notify their egg suppliers that the nation's roosters would need to work overtime.

Virologists and chicken farmers have had a long partnership, forged in the 1930s when pathologist Ernest Goodpasture grew fowl pox, a smallpox-like virus, in fertilized eggs, which are cheap and internally sterile. The virus grew exceptionally well in the chick embryo membrane.

Photography by Ed Clark/The LIFE Picture Collection via Getty Images

Maurice Hilleman, PhD'44, and his flu research team at the Walter Reed Army Institute of Research in 1957. Then (as now) scientists incubated influenza and other viruses inside eggs to produce vaccines.

Flu vaccines have been made this way for more than 70 years, using eggs to replicate the virus before killing it. Hepatitis A, polio, and rabies vaccines are all inactivated viruses. Other vaccines are made from live, attenuated (weakened) viruses, which provide longer-lasting immunity. When grown in a series of nonhuman cell samples (often chick embryos), sometimes up to 200 times in a process called “passaging,” the strain mutates to thrive in those host cells while becoming less able to replicate in human cells—if at all. The weakened viruses are recognized by our immune system but can’t infect us. Measles, mumps, and rubella vaccines are made this way.

The first measles vaccine was developed by John Enders of Boston Children’s Hospital, who published on its effectiveness in 1961. Several pharmaceutical representatives immediately requested the Enders strain in order to mass produce a vaccine. Hilleman, who by the end of 1957 had joined Merck Research Laboratories, was one of them.

When Hilleman received Enders’s vaccine, he found the sample was loaded with a chicken leukemia virus. It had been contaminated by chick embryos used to weaken the measles virus. In the early 1960s, about 20 percent of the US chicken stock carried the cancer-causing avian leukosis virus (ALV). When Enders was developing his strain, there was no way to distinguish healthy from infected embryos.

Later studies found no connection between ALV and cancer in humans, but in 1961 Hilleman didn’t know that. Fortunately, the test he used to detect the virus—developed that year—also offered a way to breed ALV-free chicks.

Because he had chicken-raising experience, Hilleman attempted—and failed—to breed a clean flock at Merck. Then a fellow virologist told him about Kimber Farms in California, which had about 300 ALV-free chickens. Kimber’s director of poultry research, hesitant to hand over the farm’s research birds, sold the whole flock when he learned Hilleman was, like him, from Montana. The resulting measles vaccine, Rubeovax, was licensed to the US government in 1963. Merck still produces vaccines using eggs from that flock’s descendants.

With the contamination issue resolved, Hilleman turned his focus to Rubeovax’s side effects. The vaccine made many children ill, producing a rash and high fevers that sometimes caused seizures. It was “toxic as hell,” said Hilleman (a gentle expletive for someone famously profane). He alleviated some symptoms by administering gamma globulin, a fraction of blood from measles survivors containing antibodies, along with the vaccine—one shot in each arm. But giving two injections was a burden on doctors and children.

To reduce the side effects, Hilleman needed to weaken the Enders strain even further. He did so by passing it through clean chick embryos an extra 40 times. He named the weaker virus “Moraten,” for “more attenuated Enders.” (One reason Hilleman isn’t a history-book staple like Jonas Salk may have been his humility. His sole personal touch was naming his mumps vaccine the Jeryl Lynn strain, after his daughter, from whom he sourced the original sample.)

Licensed as Attenuvax in 1968, Moraten has been the only measles vaccine used in the United States ever since. In 1969 Hilleman created a rubella vaccine and combined it with his mumps and measles vaccine, licensing the MMR shot in 1971.

How did one person produce so many vaccines? It may have been his personality and management style, both of which tended to ruffle feathers. At a January 2005 symposium in his honor, Hilleman admitted that the best description of him had come from a former Merck colleague, “who said that on the outside I appeared to be a bastard but that if you looked deeper, inside, you still saw a bastard.”

Hilleman’s standards were high and his tolerance for mistakes was low. When he discovered Merck’s manufacturing division had tweaked his chemical inactivation process for the hepatitis B vaccine, creating the possibility of infecting children, he summoned the team for a legendary meeting, castigating them all as “goddamn meatheads.”

Employees unwilling to match Hilleman’s seven-day workweek were fired. A few had their likenesses made into shrunken head trophies for his office (carved from apples by his daughter Kirsten). Those who survived were fiercely devoted. But his demands could go further. In the late ’70s, Hilleman was developing his hepatitis B vaccine—the first and last derived from human blood. (It’s now grown in yeast.) Be-

cause of the inherent dangers, the FDA was reluctant to grant permission to test it. So he distributed consent forms to his staff requesting volunteers to try it out. When no one stepped forward, he said the forms didn’t have a “no” option. Joan Staub, an employee who took

the vaccine, told Offit, “If Hilleman told you to do something, you did it.” Nine Merck employees conceded and later tested clean before the vaccine was cleared for broader trials.

While his professional behavior ranged from indelicate to likely actionable by today’s standards, he was supportive and loving at home according to Kirsten. And there’s no arguing that his work has saved millions of lives—and counting. Nine of the 14 routinely recommended pediatric vaccines are his, and some of the worst childhood diseases have been thwarted. Before retiring from full-time work at Merck in 1984, the foul-mouthed farmer defeated yet one more of them: chicken pox. ♦

How did one person produce so many vaccines?



LITERATURE

HOWLAND'S GIFT

How a Chicago writer made it into the literary canon and then got lost.

BY CARRIE GOLUS, AB'91, AM'93

It was the cover that drew Brigid Hughes in.

The book, which she picked out of the bargain bin at Manhattan's Housing Works Books in 2015, had "this fabulous 1970s cover" with neon green lettering. On the back, a blurb from Saul

Bellow, EX'39.

Hughes had never heard of the author, and it is her business to know authors. She was the second editor of the *Paris Review*, after George Plimpton; then she founded the literary magazine *A Public Space*.

"I'm sure you've had those moments," she says. "You open a page at random and there's a sentence or a paragraph that resonates very powerfully." The book's price: one dollar. Hughes bought it.

W-3 (Viking, 1974), the first book by Bette Howland, 12GC'53, AB'55, is a lightly fictionalized memoir of her stay in the University of Chicago hospital's psychiatric ward, recovering from a suicide attempt. Hughes read the book quickly, though she found it harrowing: "There are a number of sentences where you want to pause and take them in and walk around thinking about them."

She wanted to know more about Howland. An internet search brought up nothing at first. More digging yielded an obituary for Howland's mother, which mentioned a grandson, Jacob, a philosophy professor at the University of Tulsa in Oklahoma. Bette Howland was his mother, Jacob confirmed, and she was still alive. But she was suffering from multiple sclerosis and dementia.

Later in 2015, with Jacob's help, *A Public Space* published a portfolio of Howland's work. It included two short stories (one, discovered in a Tulsa safe deposit box, published for the first

time), an essay on heroines in American literature, and excerpts from postcards and letters sent by Bellow (also from the safe deposit box). Jacob told his mother all about it; she was “mildly pleased,” he says.

In October 2017, two months before Howland’s death, Hughes launched an imprint, A Public Space Books. Its first publication, *Calm Sea and Prosperous Voyage* (2019), includes a novella of the same title and 10 other short stories by Howland. Now articles and reviews are everywhere: the *Paris Review*, the *New York Times*, *Harper’s*, *Lithub*, the *Wall Street Journal*.

But Howland’s reviews were always good. A *Commentary* review of *W-3* points out that, unlike other memoirists of mental illness, “she writes as if she were a participant-observer, a novelist-anthropologist in a strange, often perplexing new place.” When her second book, *Blue in Chicago* (Harper & Row, 1978) was published, Studs Terkel, PhB’32, JD’34, invited her on his WFMT radio show. “Bette Howland is one of the most perceptive observers of a city, Chicago,” he said, introducing his guest. “Her picture of the city is a haunting one, a poignant one.” The *New York Times* described her third and final book, *Things to Come and Go* (Knopf, 1983), as “a quirky collection of three long stories by a writer of unusual talent, power and intelligence,” just like “the brilliantly executed *Blue in Chicago*.”

How did a well-reviewed writer with such a prestigious pedigree—an MFA from the University of Iowa in 1967, a Guggenheim Fellowship in 1978, a MacArthur Foundation “genius grant” in 1984—come to be so thoroughly forgotten?

Author and critic Bill Savage, who teaches Chicago literature at Northwestern Uni-

versity, wrote his dissertation on how Nelson Algren was precanonical, canonical, and then decanonized. (Twenty years later, he’s being canonized again.)

When Savage teaches canon formation, he starts by explaining the competing definitions. “There’s the right-wing, conservative, Allan Bloom [PhB’49, AM’53, PhD’55], Saul Bellow definition,” he says. “The canon is those timeless works that everyone agrees speak universal human truth. ... It is *the* canon, singular.” But this notion is not historically accurate, he says: “Things move in and out of canonicity. Shakespeare was the equivalent of television. Twain was the equivalent of *Game of Thrones*—pop fiction.”

The “left-wing idea,” in contrast, claims “the canon is just a political process by which people in power make other people read things. That has truth to it too, but it’s not 100 per-

cent.” (His own preferred definition: the canon is that list of books and/or writers that educated people “either have read, feel guilty about not having read, or can fake having read.”)

When editors like Hughes seek to broaden the canon, they often look for “scenes,” as Savage puts it: “who’s sleeping with who, who’s publishing each other’s work, who’s blurbing each other.” Howland’s relationship with Bellow encompassed all three.

Among Bellow’s papers in the UChicago Library’s Special Collections Research Center is a decades-long correspondence between the two. Howland sent Bellow numerous short stories, including at least one that to my knowledge has not been published anywhere. I immediately emailed Jacob to let him know.

“See, you are demonstrating how the canon process works,” Savage says. “You’re part of that process too, with the alumni magazine.”



After discovering Bette Howland’s (12GC’53, AB’55) memoir *W-3* in 2015, editor Brigid Hughes became fascinated with the writer’s story. Hughes’s imprint published a new edition of Howland’s work, *Calm Sea and Prosperous Voyage*, earlier this year.

For a long time it had seemed to me that life was about to begin—real life. But there was always some obstacle in the way. ... At last it had dawned on me that these obstacles were my life.

—W-3

Bette Sotonoff was born in 1937—in January, of course, the bitterest month of the bitter Chicago winter—and grew up in Lawndale on the West Side. Her father was a factory worker, her mother a social worker. At 15 she enrolled at the University, earning a 12th-grade certificate in 1953 and taking the blandly named Core courses of the time: humanities, history, and so on.

For her final quarter, autumn 1955, her transcript lists five law classes: Elements of the Law, Contracts, Civil Procedure, Torts, and a tutorial. But rather than completing a law degree, she withdrew her registration in January 1956 and married **Howard Howland**, AB'52, who became a prominent neurobiologist. She was 19.

The couple had two sons, Frank (born in 1958) and Jacob (born in 1959). Around the same time, Bette Howland's first published stories began to appear: "Sam Katz" in the literary magazine *Epoch*, "Julia" in the *Quarterly Review of Literature*.

In July 1961 she attended a two-week literary conference at Wagner College on Staten Island, where Edward Albee taught drama, Robert Lowell poetry, and Saul Bellow fiction. Howland, then 24, and Bellow, 46, were immediately taken with each other. "Bette was easily the most accomplished of the young people who had signed up," Bellow wrote in a recommendation for her more than 30 years later. "Even then, before she had fully organized her talents, she was quite obviously the real thing."

In August Howland sent Bellow a submission to his literary magazine. "I've no great hopes that *Noble Savage* will take this, in spite of its commendable qualities and my fine connections," she wrote. The story is not with the letter in Bellow's papers, but presumably it was "Aronesti," published in *Noble Savage* in 1962, along with work by Nelson Algren and Arthur Miller.

When Howland was visiting her parents in Chicago that winter, Bellow phoned; he was spending a quarter as "Celebrity in Residence"—so named by the University's public relations office—in the English department. (Bellow had just married Susan Glassman, AM'73, wife number three of five, but she remained in New York.) "It was his alma mater; mine too; and one of



Howland around 1940 in front of her childhood home in West Lawndale. In later years, Howland's relationship with her parents grew strained—but she never stopped writing about them.

Photo courtesy Jacob Howland

the few places you really can go back to—maybe, in Chicago, the only place,” Howland recalled in an unpublished scrap of memoir titled “Herzog’s Bellow.” He invited her to a small gathering with Algren and a group of visiting Russian writers. As glamorous as that sounds, the evening, in Howland’s retelling, was awkward and tiresome.

By 1963 Howland was a divorcée—“that lurid word,” she called it in *W-3*, “that benighted condition”—and had enrolled in the University of Iowa’s Writers’ Workshop, partly thanks to Bellow’s recommendation. Howland completed her MFA in 1967. Her thesis, “The Iron Year,” includes early versions of some of the stories published a decade later in *Blue in Chicago*.

In letters to Bellow from Iowa, she insisted that she was happy there, but an incident at the very end marred it. Her thesis had a minor error in formatting. A secretary refused to accept it, and she was not allowed to graduate with her class. Howland never forgot; she refused to let the school ever use her name.

By 1968 Howland was living in the same decrepit Uptown building as her grandmother, working part time at the branch library and editing manuscripts for the University of Chicago

puddle of blood in their building: “We needed the money.”

Around this time, Howland was hospitalized. The unnamed narrator of *W-3* (the name of the psychiatric ward) does not die, despite the bottle of sleeping pills she swallowed, because she immediately thinks better of it and calls the doctor, who alerts the police. In real life, Howland took the pills in Bellow’s apartment. According to Bellow’s biographer Zachary Leader, Bellow discovered her and probably hushed everything up.

But Howland rarely hushed anything. *W-3* is an unsparing look at life in a psychiatric ward: the humiliations of institutional life, the peculiar behavior of the patients, the haplessness of the doctors and nurses, whose speech is usually rendered in all caps. “NOW YOU’RE MUCH TOO YOUNG, TOO PRETTY A GIRL, TO HAVE TRIED A THING LIKE THAT,” she is told soon after she’s admitted. “NOW THAT WON’T DO AT ALL.” Her young sons are not allowed to visit. In one heart-breaking scene, her mother brings them by so she can wave to them from the window; they can hear their mother’s voice calling but can’t find her. “It was a terrible thing I had done to them,” Howland writes. “And I felt like a ghost.”

Howland still wasn’t well. Her sons begged their father to let them live with him and his new wife, who was pregnant with their first child; Frank and Jacob visited their mother during the summers.

She made every effort to make up for her absence, both sons recall, taking them to concerts, museums, and plays, and on trips abroad. “She loved us very much,” says Jacob. “But having said that, her writing always came first.”

It seems to me that there is something immoral—because inattentive—about reading when your body is in transit. And maybe I felt even then that I should be paying attention instead. But paying attention to what?
—“*Blue in Chicago*,”
Blue in Chicago

In 1971, at Bellow’s suggestion, Howland enrolled as a graduate student in the Committee on Social Thought, where he had recently become chair. During this period she published several short pieces in *Commentary*.

“Public Facilities—A Memoir” is set in the Borglum Branch (actually Bezazian) of the Chicago Public Library in Uptown, where she had worked part time. Howland writes mercilessly about its oddball librarians and shabby regulars: the elderly, the poor, the nobodies with nowhere else to go. (The story is “hilarious,” says Bill Savage. “It should be samizdat-xeroxed and sent to every library branch in CPL.”) *Commentary* published a long, furious letter from Bezazian’s reference librarian: “Parts of her article were highly exaggerated and other parts were downright fictitious and malicious.”

SHE WRITES AS IF SHE WERE A PARTICIPANT-OBSERVER, A NOVELIST-ANTHROPOLOGIST IN A STRANGE, OFTEN PERPLEXING NEW PLACE.

Press. It was not much to raise a family on. Jacob, whose darkly funny observations mirror his mother’s, recalled in an essay that the three of them once collected six dollars in change from a

W-3 ends on an optimistic note: her sons return from her parents’ home in Florida, she moves to a new apartment, she paints the walls late at night as the boys sleep. In reality

In 1974, the final year Howland was enrolled in the committee, *W-3* came out. Her thesis, never completed, was on Henry James.

Howland's second book, *Blue in Chicago*, collected six short pieces, four previously published in *Commentary*. Readers, even professional ones, weren't sure what to make of *Blue in Chicago*: Was it a short story collection or not? Some publications reviewed it as fiction, others as non-fiction. "I certainly don't want it reviewed as fiction," Howland complained to Bellow. "For one thing, I went to a hell of a lot of trouble—no one will ever know how much—to work with the facts."

Throughout *Blue in Chicago*—as in her work in general—Howland's powers of observation are like military-grade weapons, deployed most often against her family. Her mother "seemed to talk only when her mouth was full and her cheek was bulging like a fist. As if she were chewing a quid of tobacco, and about to squirt." Uncle Rudy "had to be trundled through high school in a wheelbarrow." The house he shares with Aunt Roxy: "Unmade beds, unwashed cups, cigarette butts, dishes in the sink; it's like a frat house." There's more.

"I recognized everybody, and she just nails them," says son Jacob. What did her relatives think of these sharply drawn portraits? "Roxanne—that's my Aunt Jane. She loved it. She just was so thrilled. ... Her husband, not so much." What his grandparents thought, Jacob never knew. Although Howland wrote of her parents again and again, her relationship with them was strained to the point of breaking. She didn't speak to her father for years, "until she couldn't speak to him anymore, because he was in a coma, on his deathbed," says Jacob. "She expressed the love in her writing."

Writing from life was what Bellow was known for too, and in his novel *More Die of Heartbreak* (Morrow, 1987) it was Howland's turn. The character Dita Schwartz, based on Howland, is self-conscious about her acne scars, so she tries a new technique, dermabrasion, to smooth them. Bellow writes about her coarse skin and her gruesome recovery from the procedure in cruel detail.

In 1993 Howland accepted a three-year position teaching literature in the Committee on Social Thought. The CV she submitted includes two books described as "in progress": "*The Landlady* (Knopf, 1992)" and "*Grisha Lapidus: My Life* (Knopf, under contract)." Those books were never published either. (Her CV also lists her 10 years in the Chicago Public Schools while omitting her MFA

SHE SEEMED DOUBTFUL OF THE WORTH OF WHAT SHE HAD DONE AND OF WHAT SHE WAS DOING.

How must Howland have felt? Her letter to Bellow offers few clues. "I'm longing to talk with you," she wrote. "Your book held me strangely; I dreamed of it every night. It was like seeing you or talking to you—& yet still in a kind of disguise." Their correspondence, and friendship, continued.

There is nothing here I would ever choose—and nothing I can ever part with.
—"*The Life You Gave Me,*"
Things to Come and Go

In 1983 Howland published her third book, *Things to Come and Go: Three Stories* (Knopf). The following year she won a MacArthur Fellowship, thanks to the strong support of Bellow, who served as an evaluator. Yet in the last three decades of her life, with her children grown and financial pressures removed, she published no more books. It's not clear why.

Her biography on the MacArthur Foundation site states "she is at work on a monograph, *Jacob: A Life*, and a short novel, *A Time for Kennedys*." Neither of those works ever appeared.

from Iowa, although a terminal degree from a respected program would have made her hiring easier.)

Seeing his friend's career stalling, Bellow, as always, tried to help, submitting her work to his new agent and to the *New Yorker*: "You are not likely to have heard of her, although she is the author of several books of the highest quality, each of them a *succès d'estime*."

Howland continued to write and to publish literary criticism. Jacob suspects winning the MacArthur sapped her confidence; too much was expected from a certified genius. In 1999 she published her final piece of creative work, the novella "Calm Sea and Prosperous Voyage," in the literary magazine *TriQuarterly*. The editor had to cajole her into it, he told the *New York Times*: "She seemed doubtful of the worth of what she had done and of what she was doing, and she was reluctant to be published."

Howland's older son, Frank, blames her perfectionism. "She spent a lot of time trying to write things that didn't come out," he says, such as *Grisha Lapidus*. "She never completed that to her satisfaction."

The novel was based on an unpublished memoir by her grandfather's cousin. Born in Europe, he lived in Palestine, got caught up in the Russian Revolution and the Mexican Revolution—then moved to New York and led an entirely ordinary life. Frank has a 200-page typescript, plus a large sketch pad—14 by 17 inches—with 80 pages, front and back, written in pencil. “This is clearly something she hoped to publish after the MacArthur award.”

By 2005 “cognitive decline begins to set in,” says Frank. She had learned to use a computer but would get confused and lose her revisions. Howland was diagnosed with multiple sclerosis in 2010, and in 2014, while walking home from the grocery store, she was hit by a pickup truck, which worsened her dementia. As Jacob wrote at the time, “Her words scatter like vegetables bouncing on asphalt.”

A year after the accident, the neon-green cover art of *W-3* caught Brigid Hughes's eye.

Illness, old age, funerals, and death were constant themes in Howland's writing. An observer to the core, she seemed aware of her diminished capacities, Jacob says. One writer, A. N. Devers, insisted on trying to interview her; Jacob agreed to let her. “What does it feel like to be Bette Howland?” Devers asked.

“Bette Howland died a long time ago,” she replied.

What would she have made of the furor over her rediscovered work? Jacob suspects she would be irritated by the focus on gender, a perpetual theme in reviews and articles. “I can hear her voice saying, ‘I’m not just a *woman* writer, I’m a writer,’” he says. “She thought of herself as an American writer, and more specifically as a Chicago writer,” working in the tradition of Theodore Dreiser, James T. Farrell, Richard Wright.

And yet she was a woman writer, writing from her own distinct perspec-



Top: Howland with her son Frank (left), novelist Henry Roth (far right), and Roth's wife, Muriel, around 1980. **Bottom:** Howland with her extended family—the frequent subjects of her stories—in her parents' West Rogers Park apartment around the time of her hospitalization. Younger son Jacob stands with Howland at right; Frank is at left.

tive—as a daughter, as a mother—and that fact shifts the Chicago literature canon, which is still “a boys’ club, a sausage fest,” as Savage puts it. Its beginning is often traced to Carl Sandburg's poem “Chicago,” Savage says, “where he actually personified the city as a working-class man.” (Interestingly, the few women writers added to the canon in the more recent decades—Lorraine Hansberry, Gwendolyn Brooks, Sandra Cisneros—are all women of color.)

One mark of canonicity, of course, is the price of first editions. Wanting to

buy *Blue in Chicago*, Savage searched online, but all the copies he found cost hundreds of dollars. Until this year, Howland's work had never been available in paperback.

Brigid Hughes keeps that bargain-bin copy of *W-3* on her desk at A Public Space. The bright orange “\$1.00” sticker is on the back, a few inches below Bellow's blurb: “I was much moved by *W-3*. ... No poses are struck and no vain gestures made in this brave and honorable book. Bette Howland is a real writer.” ♦





EXCERPT

POWER FAILURE

A story from Calm Sea and Prosperous Voyage.

BY BETTE HOWLAND, 12GC'53, AB'55

Bette Howland's story "Power Failure" was first published in the literary journal the *American Voice* in 1985. Howland's work is characterized by its sharp observations of others, especially her parents and extended family. In this story, atypically, she turns reflective, self-critical, nostalgic, and dreamy, imagining that her grown sons are "small again. We have it all to do over."—*Carrie Golus, AB'91, AM'93*

was sleeping on the couch under a pile of blankets and coats and the fire scratched in the grate.

The power was out; one of those freak spring storms that bump off trees and knock down lines. The world was a snow-swamp,

the Everglades turned white. Knee-deep drifts, floating branches, limbs bent low, broken and bearded with snow. Everything bowed with age and silence.

The only other soul I'd seen all day was the caretaker who looks after that place across the way—the one that used to belong to Colonel Somebody-or-Other. The heirs are in court, squabbling about who gets what and which was promised when; and in the meantime the house just sits there—a big pink elephant, gingerbread, jig-

saws, doodads and all—getting picked clean by vandals. They would have walked off with the cannon that squats on the front lawn by now, only it's up to its cast iron neck in concrete.

The old man seems to have all this on his mind.

He comes by just about every day. I hear a car door slam, I look up, there he is, larger than life—green plaid lumber jacket and waxy yellow work boots—squeezing out of a low-slung hatchback. A Japanese make, which I mention because there seem to be so many in this neck of the woods. The local dealer must be one helluva salesman. The little cars go clattering up and down the patriotic landscape, almost a part of it; like the red brick and bow windows, the bumpy blue pyramids of the mountains, the white birches. (You think other trees are white, too, until you see birches again.)

So here he comes. Collar up, earflaps down, hands shoving into pockets over his stomach; pipe extending the angle, the purpose, of his stubborn Yankee jaw. His eyes have a nippy glitter inside his glasses; his breath in the iced air stiffens and staggers before him.

"How's the typewriter?" That's what he always asks, only he says "haaoww" and "typewrituh." It's his joke; he means me and my machine both. He's the one who delivered it, got down on all fours under my desk to plug it in. "Well, yuh've gawt noh excuse naoww," he said, scraping and grating his sandpaper hands together. "Gawt tuh get daowwn tuh wuhk naoww."

From his baggy pants dangle wires, pliers, clippers, black electrical tape. He's been busy rigging up traps and alarms, meaning to give the vandals a surprise: "Next time they get the shawk of their life."

I think he'll be sorry if there is no next time.

Today the house was safe; buried under a ton or two of savage bright stuff. You couldn't look at the snow for the pressure of sun on it. A blue jay flashed in branches, the colors of the wintry day. Black white blue. Trees snow sky.

Spreading its wings it became a miniature landscape, something painted on a fan.

I read by the fire in earmuffs and mittens. (Have you noticed? How hard it is to turn pages with mittens on?) When it got dark—whenever that was, the clock had stopped—I cooked supper over the flames. The hamburger dripped, smoking raw. The potato burned black; ashes blew into the coffee. I was getting good and mad at myself: too lazy to take the trouble to do things right. Just because the situation was temporary. Some excuse. What isn't temporary? If you want to get technical? As if that's any way to live. (And how long since I've been meaning to buy a kerosene lamp, in case of emergency, and replace the dead batteries in my portable radio.)

By the time I went to bed, I had fed the fire just about every scrap of paper in the house; and if there's one thing there's plenty of around here, it's scrap paper. All the same, the last thing I saw—turning my back to the fire, hitching up covers—the last I saw, in the red flickering glow, was the one scrap overlooked. A letter from my mother, stuck to the bottom of the wastebasket. The envelope raggedly ripped.

Even in my sleep I knew that this must be the reason for my dream.

Now please. Don't get me wrong. I don't mean to embarrass anybody. I get discouraged myself, when people start talking about dreams. Especially in stories. Because what's to keep us from telling lies? Making it all up? Are there rules? And besides, everyone knows that dreams aren't just dreams.

Someone is trying to tell you Something—with a capital S. I don't know about you, but that makes me nervous.

All right. I apologize. But what can I do? I'm not trying to put one over on you. (I told you to begin with I was sleeping—remember?) This isn't really a story—and I was dreaming. And I'd just like to see if I can get things straight.

In the dreams my sons are just learning to walk; bold staggering steps and shy shining faces. One light head, one dark head, at the same level. My daughter is older (though that can't be right, can it?). Her short skirts lift and stick out in front and show her bare narrow legs, the puckered trim of her bloomers. What's

**Everyone knows
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dreams. Someone
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with a capital S.**

odd is her hair; smooth heavy hair, straight-hanging, as if water weighted, and so long it surrounds her. She is mantled in hair; a dark shining cloak.

Some children are born that way; right from the beginning; come into the world wrapped in the mysteries of their own personalities. You can see my daughter is one of these.

My heart glares with gladness; as dazzling, as hard to bear, as the sun burning snow. Because I know what's going on—I recognize this dream. I've had it so many times before—though never in my sleep. It's here, this is it.

I'm getting my wish. My children are small again. We have it all to do over.

I can't tell you if I had read my mother's letter or not; ripped open doesn't mean anything. I might have been looking to see what was inside. Lately, she has sent a few checks. "Go buy yourself something." "How's the money holding out?" This is something new; I'm not sure what to do. Maybe I cash them, maybe I tear them up. It all depends. No rhyme nor reason.

I see I have just confessed—and put it in writing—that I am the sort of person who opens a mother's letters in case there might be money in them. Good. Glad that's over. So now you know. Here we have a stock situation, the old antagonism. Mother and daughters. You've heard this story before.

But I'm not the only one, it's not just me. This condition must be very widespread. (There's safety in numbers. But is there truth?) Many friends tell me they can't read letters they get from their mothers, either. And who can blame them? Why open up a letter and read it when you know darn well, beforehand, what it's going to say? What has been written, predestined, foreordained, from time immemorial. A little reproach, a little punishment, a little guilt. My friends must feel the same way I do when I see my mother's handwriting on an envelope. The postmark. The wavy lines, the canceled stamp. About the way it feels to see my name on a bill:

Remit immediately or action will be taken.

And after all she is presenting the bill. It's that time. Payment is due, she means to collect. Only—only—it has been established by now that I am never going to come up with her currency. And she won't accept mine. So how can I pay up? What will I use for wherewithal?

Like they say: The letter killeth.

You know how it is when you try to recover a dream.

A tug on the line; a quiver, a gleam. You grab hold, you hang on; it struggles and squirms. Maybe you catch something, bring it to light. Maybe it sinks into the depths.

Splash! Gone for good.

That's how it is in my dream, only the other way around. In my dream I'm trying to recall real life, waking life. My own life. I have it, it's hooked, I'm reeling it in. Then the same thing happens. A wriggle, a flash, it slips from my grasp.

I reach for the past—and it isn't there.

I might have known. This dream was too good to last. My sons I can picture as infants; that means the past is there—somewhere. I could lay hands on it (couldn't I?). What's wrong is my daughter; she's the one. Looking closer, I see that she's not really a child at all. She is only reduced in size, in scale: a miniature. Except for her hair. It can't be any longer and straighter now. And that's another thing. I don't recall girls having hair like that, when I was her age. So lustrous, so lithe, a kind of raiment: an animal's coat.

Her eyes have the same liquid gloss.

Something tells me I am seeing my daughter in my dream just exactly as she has always been. A grave little image, a stand-in for her grown-up self.

But who got her ready for school, then? Who brushed her hair, who tied her shoelaces, who buttoned her blouses down the back? If I didn't? Who painted orange stuff on her cuts and stuck the thermometer under her tongue? (Don't tell me she never ran a fever, fell down and scraped and hurt herself?) Who kissed her good night? Who checked the covers? Who told her things a mother tells a daughter? Someone must have.

Who else could it have been? If it wasn't me?

The brightness fades; a bare white light seeps through me. No fair. No fair. This isn't my wish! Not what I bargained for, not what I meant. I said I wanted to live the past over again. I never said I wanted to lose it.

What made me say handwriting? My mother prints, scrawled block letters. This is likewise something new. Maybe it's too hard for her to write? She has a touch of arthritis in her wrist, it could be acting up. (I ought to know, I have it too. I'm feeling it right now.) Maybe she thinks it's too hard for me to read? Her letters could be scribbled to a child:

TELLING YOU THIS FOR YOUR OWN GOOD

And she expresses herself, more and more, in a telegraphic style.

P.S. EVER GET THAT CHECK I SENT? BYE NOW. LOVE, MOM

Wait a minute. Just a minute. Whoa—hold on. So she calls herself Mom? Since when? How long has this been going on? Who calls her Mom! I call her Mother. And get introduced to her acquaintances—as all my life long—as my daw-ter.

No name, just the generic.

"Mother," I say. "Is that manners? Is that nice? Are your friends supposed to call me Daw-ter?"

I might have known. This dream was too good to last.

She arches up her two little pinched eyebrows plucked, picked, singed like pinfeathers—the style of movie vamps of her youth. In that mode also, her thin wine-colored lips. You smell the per-

fume of her lipstick as she compresses them: "And what makes you think they'd care what your name is? If I told them?"

Otherwise her features are large, dark, and dignified; the profile of a coin. The head on a buffalo nickel.

So she thinks of herself as Mom. She wants to be Mom. That's news to me. What do you make of it? What's in a Mom?

And while I'm at it—that reminds me. Just where does she write these letters, anyhow? (The ones I don't read.) Since there's no place in the whole darn house where a person can sit down, in a comfortable chair, under a decent lamp, to read or write. Naturally not; she'd be a social outcast. This is a retirement village in south Florida—where the skies are as blue as the ocean, and the clouds are as white as its wakes.

Correction. That's at high noon. At sunrise the clouds are bashful pink, blushing, puffed-up flamingo feathers. At sunset they are gossamer—gilded—edged in radiance: translucent as an old lady's hair.

She must write her letters at the kitchen table. Stamps and stationery she keeps in the cupboard, hiding the bottle of sweet purple wine. (The grapes on the label sweat glassy beads of dew.) My mother doesn't drink herself, except for a drop in hot tea when she has a cold, but she does like to keep a little something on hand; just to show how broad minded she can be. And it's no use telling her I don't drink; even if strictly true, she'd never believe me. She knows better. I'm divorced.

HOPING YOU HAVE LEARNED YOUR LESSON

What is her currency? A life she can approve of, what else? What does any mother want? Why can't I be like her friends' children, acquiring things, habits, for a lifetime?

Go explain to your mother that there has been a breakdown in "personal rela-

tions”—as if she didn’t know—and when that happens, when circuits short, fuses blow, lines come down, connections fail—you’re on your own. You need a lot of luck, or a lot of character.

And I only said that, about the character. Just ask my mother. How would I know?

The caretaker told me they were fixing to get the paowwuh back on during the night, and I figured I’d be the first to know. This cottage has oil heat, but an electric switch kicks it on—and I do mean kicks. The first time, I thought a deer had taken a running jump into the side of the house. I was afraid to go out and see. Do deer look before they leap? They give a whistle, I know; and their little white tails stand up and stiffen and it’s the last glimpse you get. There were deer here aplenty in the colonel’s day, when this cottage was part of the colonel’s grounds. Now no more deer, but it’s still the colonel this and the colonel that. (The license plates say Live Free or Die, but oh how New Englanders go crazy for titles.)

Anyway, the furnace gives me a start. Even in my sleep I’m listening for a thud. The night is booming: snow plopping and thumping from all those pitched roofs and pointy firs, dumping down clods and clumps, blow by blow, like wet concrete. The fire is low; flames scavenge the logs, gnawing and sharpening red rodent teeth. That is what’s real. And I want to wake up, throw off the weight of sleep and dreams and too many covers and snow loading down the backs of the trees. The burden will snap the young spring branches, with their clawing buds.

I know this is a dream. Only a dream.

Winter dusk. A pearly slush packs the skylight. Galoshes lean outside doors. Climbing stairs, I smell dinners getting cooked. Fat spits and spats in frying

My daughter and I have no history; only the history of mother and daughters.

pans. This run-down building seems familiar. Have I been here before? People pack their bags, they move on, they leave no forwarding address. Window shades fly up with a clatter, clack like tongues. Frozen snow glazes the glass.

I’m looking for the person who raised my daughter.

The children were small, money was scarce, I got sick. That must be when my daughter was sent to strangers. That’s how come the missing years, the missing memories. It wasn’t me. It was someone else all along.

But who? Where? No one answers my knock. Streets, stairs, doors keep changing. Room after room is empty, and not just empty—deserted. No one lives here. The building is condemned. The doors are lined up like rows of fences.

I have found the past. I am in it. This is it—all that’s left of it. Not even a memory. My daughter and I have no history; only the history of mother and daughters. I know just how she is going to feel toward me. I have forfeited my one and only chance.

I didn’t tell you what it felt like when I saw that torn envelope. A jolt, a shock; it buzzed right through me. I thought the furnace had kicked, they’d got the juice going, thrown the switch. The force was so strong, I didn’t know what to call it. And what difference does it make. Call it anything you want. It’s all the same power, it all comes from the same place. So that’s the way we’re wired up.

I didn’t know there was that much left in our connection.

But what about all those years, when my children were growing up, when we were alone?

WASH MY HANDS YOU MADE YOUR BED NOW LIE AS FAR AS I’M CONCERNED NO DAUGHTER OF MINE

Mother Mother, why can’t you be one way or the other? So I could feel one way or the other? Why have we wasted our time like this? Why couldn’t we have called it something else? What good are checks and letters now?

Now she sits at a plastic-topped table, ballpoint pen in hand, gazing as if for inspiration at a row of newly planted palms. All lined up and wired, pliant grass-skirted utility poles. Flamingos shift on coat-hanger limbs. Her face is carved teak from the Florida sun, her lipstick glows in the dark; her eyes swim like goldfish in the cloudy depths of her glasses. You know those fishbowl lenses old people wear.

Old? Did someone say old? My mother?

The frames are mother-of-pearl, as white and luminous as her hair.

I’m numb; frozen stiff. The room is cold, the clock is stopped, the fire is out—powder and ashes. The windows are streaked in leaky gray light; cold sweat clings, a sheet wrung from the wash. It takes a minute or two for me to understand. I’m awake. It’s all right. It was a dream; only a dream. No one is going to feel that way toward me. Still, it’s not exactly a relief. Because who was she? Who is she? And what do I do now? I never had a daughter. ♦

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THE PRUDENT JURIST

Remembering Justice John Paul Stevens, LAB'37, AB'41.
1920–2019

BY LAURA DEMANSKI, AM'94

John Paul Stevens was a Hyde Park Parker born and raised. He grew up on 58th Street, graduating from the Laboratory Schools and the College, and he remained close to the neighborhood and the University all his life. But the decisions—and the dissents—that he wrote during his 35 years of service, the third-longest tenure of any Supreme Court justice, leave a legacy that is most essentially American.

Respected by citizens of every political leaning, Stevens, LAB'37, AB'41, earned a reputation for being staunchly independent in his thinking, loath to apply rote principle. As much as he influenced US law, the thousands of cases he studied and ruled on influenced him, notably his views on capital punishment and affirmative action, which changed over his career.

His open-minded but rigorous judicial temperament, which compelled Stevens to consider each case on its own terms without preconception or prejudice, shares much with the aims and modus operandi of a UChicago education. He belonged above all to the country, yes. But also unmistakably to this place.

Stevens's death on July 16 (see Deaths, page 92) sparked the outpouring of remembrances one would expect for someone in such an influential and public

role for so long. Less common was the warmth of those words—from his fellow justices, former clerks, journalists, and court watchers—as demonstrated by the individual reflections shared here.

Dahlia Lithwick and Sonja West, JD'98, *Slate*

At times he was a maverick, a frequent lone dissenter, unafraid to stand alone in his convictions. Once, in an interview, Justice Antonin Scalia was asked which justice was his favorite sparring partner, and he named Stevens. "I think you should give the dissenter the respect to respond to the points that he makes. And so did John Stevens," Scalia explained. "So he and I used to go back and forth almost endlessly." Stevens, however, was also a unifying leader who will be remembered for his unusually effective ability to unite the four more liberal-leaning justices against the conservative majority.

Stevens was known for being the only justice to write his own first drafts, which he would pass along to his clerks with instructions along the general lines of "don't let me look like an idiot." For decades he was also the only justice to rely entirely on his own clerks' recommendations about which cases the court should hear, rather than pooling his clerks with those

of the other justices to review only a share of the petitions as all the other justices did. He reveled in debating with his young clerks, enthusiastically engaging their arguments and humbly treating them as intellectual peers.

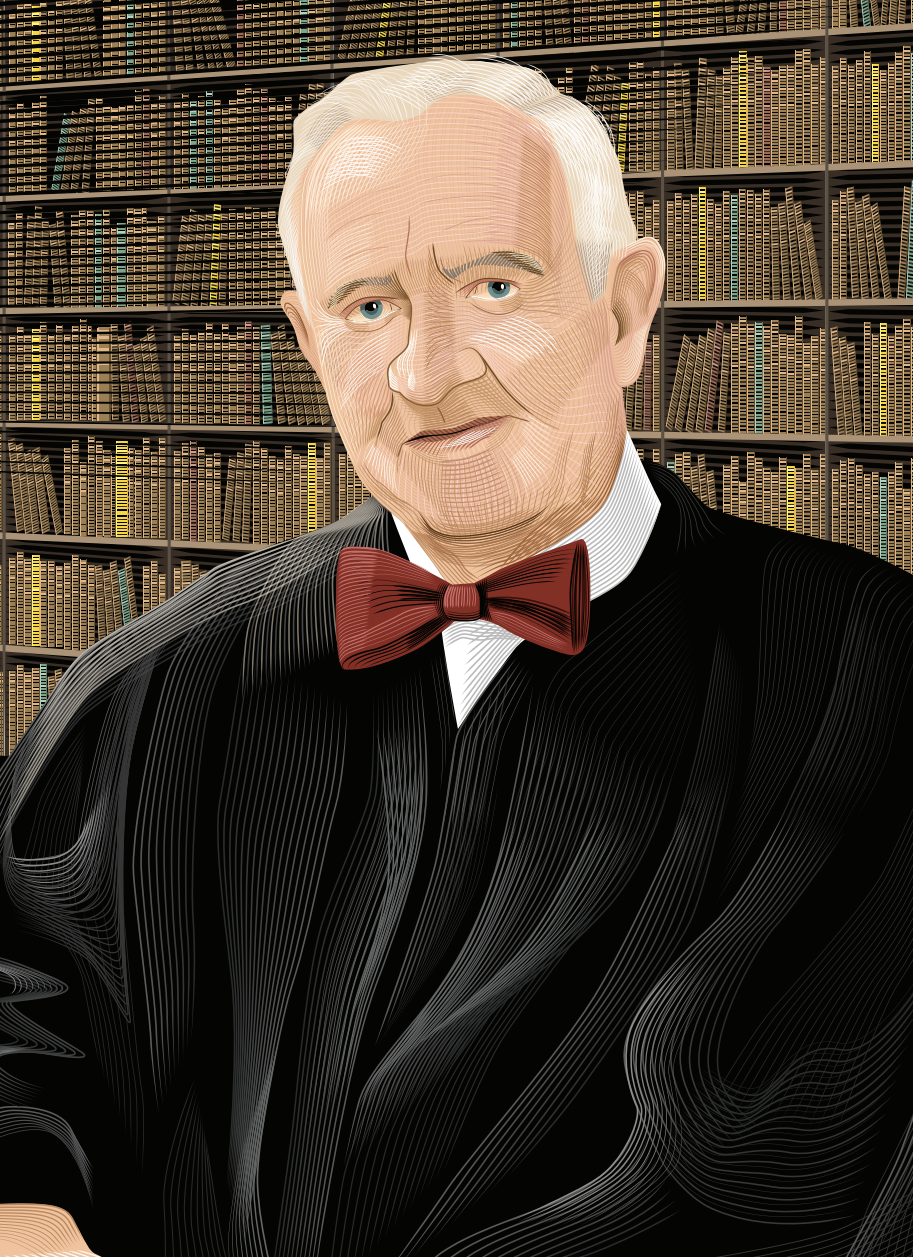
David Cole, *The Nation*

Stevens's commitment was not to a particular worldview but to the act of judging, which requires fierce independence, an open mind, and the willingness to do the right thing regardless of whether it is popular. He was skeptical of rigid doctrinal tests; he criticized the Court's equal protection doctrine, for example, which applies different levels of review to laws discriminating on the basis of race, sex, and other classifications, respectively. In his view, there was only one Equal Protection Clause, and he didn't think that differing tests were very helpful in deciding cases. He trusted his own ability to render judgment over a rigid rule.

Travis Crum, Lecturer and Bigelow Teaching Fellow, University of Chicago Law School

I had the tremendous honor to clerk for Justice John Paul Stevens while he was a retired justice. During my clerkship, Justice Stevens wrote his memoir and often reminisced about growing up in Hyde Park. His stories about Chicago were like something out of a movie. As a child, he watched Babe Ruth hit his famous "called shot" at the 1932 World Series at Wrigley Field, worked at the 1933 Chicago World's Fair, and attended several important events at his family-run Stevens Hotel (now the Chicago Hilton). Justice Stevens also spoke fondly of attending both the University of Chicago and the Laboratory Schools.

Despite living one of the most extraordinary lives of the past century, Justice Stevens was one of the most



views while his relationships with his colleagues remained as warm as ever.

Noah Feldman, *Bloomberg*

Today's justices come so vetted to avoid deviation from ideological and partisan pressures. Stevens, the justice from the greatest generation, reminds us that it wasn't always so—and that great justices develop and change, becoming greater as they go.

Gregory Garre, *SCOTUSblog*

[Justice Stevens's] disarming manner of asking questions masked the fact that he often asked the most difficult questions, zeroing in on the key legal principle or fact at the crux of the case, and asking an advocate in the kindest way if they would just agree with him on a point, leaving them to realize only later that they had often sunk their case by doing so. It always reminded me of the detective show *Columbo*, another link to the past. Just when the lead suspect would think they had gotten away with it, Columbo (played by Peter Falk) would return to the scene of the crime, raise his finger, pause for a moment, and say, "There's just one more thing." And that would be the question that did the suspect in.

Waiting for Justice Stevens to ask that question as time was winding down was one of the scariest moments of oral argument.

Supreme Court Justice Ruth Bader Ginsburg

In a capital city with no shortage of self-promoters, Justice Stevens set a different tone. Quick as his bright mind was, Justice Stevens remained a genuinely gentle and modest man. No jurist with whom I have served was more dedicated to the judicial craft, more open to what he called "learning on the job," more sensitive to the well-being of the community law exists (or should exist) to serve. ♦

humble people that I've ever met. And on top of that, he was a brilliant and visionary jurist. His passing is a huge loss for the court and the country.

Ian Gershengorn, *SCOTUSblog*

The spate of 8-1 decisions with the justice's occupying the role of lone dissenter earned him a reputation of being an iconoclast. In the term when I clerked, articles were written calling the justice and his jurisprudence "quirky." He didn't like that description, he told us, because as far as he was concerned, he was just doing his

job. His reaction captured something important about the justice and his approach to the law. He was committed to getting it right in every case. No issue was too small, and no case too routine, to demand anything less than his full attention and consideration. If his review of the law and the facts led him off on what others thought a tangent, so be it, as he believed that the parties and the court deserved no less. And because of the way he approached his task—with respect for the majority and a calm conviction in his own position—his lone dissents conveyed his



HISTORY

FLIGHT TEST

A soldier's final mission.

BY DAVID CHRISINGER, AM'10

No one would have blamed him if he had decided not to fly again that day. During his first attempt to locate and resupply the men of the “Lost Battalion,” on October 6, 1918, Harold Goettler and his single-engine biplane had been nearly ripped to shreds by German machine gunners dug into the cliffs of a ravine deep in France’s Argonne Forest. But 1st Lt. Goettler, AS 1914, SB 1914, and his observer-gunner, 2nd Lt. Erwin R. Bleckley, believed they had seen through the fog signs of what was left of the nearly 700 men under Maj. Charles W. Whittlesey’s command. So Goettler decided, with permission from his commanding officer, to borrow another crew’s plane and try again.

The plan was simple: fly their De Havilland 4, or DH-4, low and slow over the Charlevaux Ravine to tempt the Germans into firing, thus revealing their dug-in positions. The two fliers believed that if they could mark the enemy’s positions this way, they’d be able to deduce, by process of elimination, precisely where Whittlesey and his men were. As Goettler and Bleckley readied for takeoff, their commanding officer warned them to be careful. Shouting over the revving engine, Bleckley replied, “Don’t worry, lieutenant. We’ll find ‘em, or we won’t come back!”

On November 25, 1922, four years after Goettler and Bleckley’s fateful flight, the War Department’s Adjutant General’s Office notified Goettler’s mother, Gertrude, that her son would be posthumously awarded the Medal of Honor. The medal, the highest for valor in combat that an

Photo courtesy National Museum of the United States Air Force

When he joined the 50th Aero Squadron during World War I, Harold Goettler, AS 1914, SB 1914, was assigned to fly the De Havilland 4. Because of its explosion-prone gas tank, the plane earned the grisly nickname “the flaming coffin.”

American military service member can receive, should have immortalized Goettler as a hero of one of the most famous battles in American military history. Instead, his story of service and sacrifice has largely been lost to history, buried beneath the suffocating layers of rumor, myth, and legend that emerged soon after the surviving members of the Lost Battalion marched out of the Charlevaux Ravine.

In the fall of 1910, Harold Ernest Goettler arrived at the University of Chicago planning to study German. He pledged Delta Kappa Epsilon and played right tackle for the 1913 championship football team. A picture taken of him in his uniform shows a tall, thick-legged young man with his hands at his sides, serious and unsmiling.

Soon after graduating, Goettler landed a job with the Chicago real estate management company McKey & Poague. Later that year, he sent a short note to the newsletter of the Owl and Serpent, a senior society at the University, informing fellow members that he was still single and hadn't yet made his fortune. He added, “If any of the brothers are thinking of getting married, tell them to come and see me about renting a nice little flat.”

When America declared war on Germany in 1917, Goettler signed up to serve in the Signal Enlisted Reserve Corps, the aerial warfare service of the United States. By April 1918, he had been commissioned as a 2nd lieutenant and ordered to report to the 50th Aero Squadron in France, where he would fly missions over enemy territory to spot their artillery batteries.

Goettler's first mission took place on September 12—the start of the St. Mihiel Offensive. The goal of this US-led campaign was to break through the stalemate between French and German forces and threaten German war production and the rail network around the Briey Iron Basin. American military leaders also believed the offensive, if victorious, would show the

Allies that the Americans were equal partners in the fight against Germany. “The big push opened last night at 1:00 a.m.,” Goettler wrote in his diary, “and it was some noise. The clouds were low but from our positions we saw the barrage very clearly.” After sleeping for a few hours, Goettler woke and prepared to take off with Bleckley just after daybreak. As part of an enormous armada of 1,481 Allied planes, Goettler and Bleckley were ordered to observe the movements of frontline troops and artillery pieces to gauge the effect the offensive was having on the German army. But thick cloud cover obscured their view, and the two fliers returned to the airdrome at 7:15 a.m.

The next week was quiet for Goettler and Bleckley. In his diary, Goettler wrote that he was glad, because his “ship was in no shape to fly.” He passed the time reading through letters from home, playing some baseball and a little poker, and lunching at the Hotel Metz. Nearly a week later, on September

26, Goettler and Bleckley went up to surveil German artillery positions. “No Bosh [sic] bothered us,” Goettler wrote of the Germans, “and our trip was uneventful.” That was the last day he wrote anything in his diary.

On October 2, Whittlesey, a lanky New Englander who had trained as a lawyer before the war, was ordered to attack a heavily fortified and nearly impregnable ravine in the dense Argonne Forest with nine companies of men as part of the Meuse-

Argonne offensive. It was the largest operation American soldiers would engage in during the First World War—and the deadliest campaign in American history. Before it ended with the signing of the Armistice on November 11, 1918, the offensive would claim the lives of more than 26,000 Americans, with another 120,000 wounded. Whittlesey was to hold his position regardless of the losses once he reached his objective.

Plunging headlong into the growth and underbrush with his men, Whittlesey succeeded in reaching the ravine. But by the next day, the

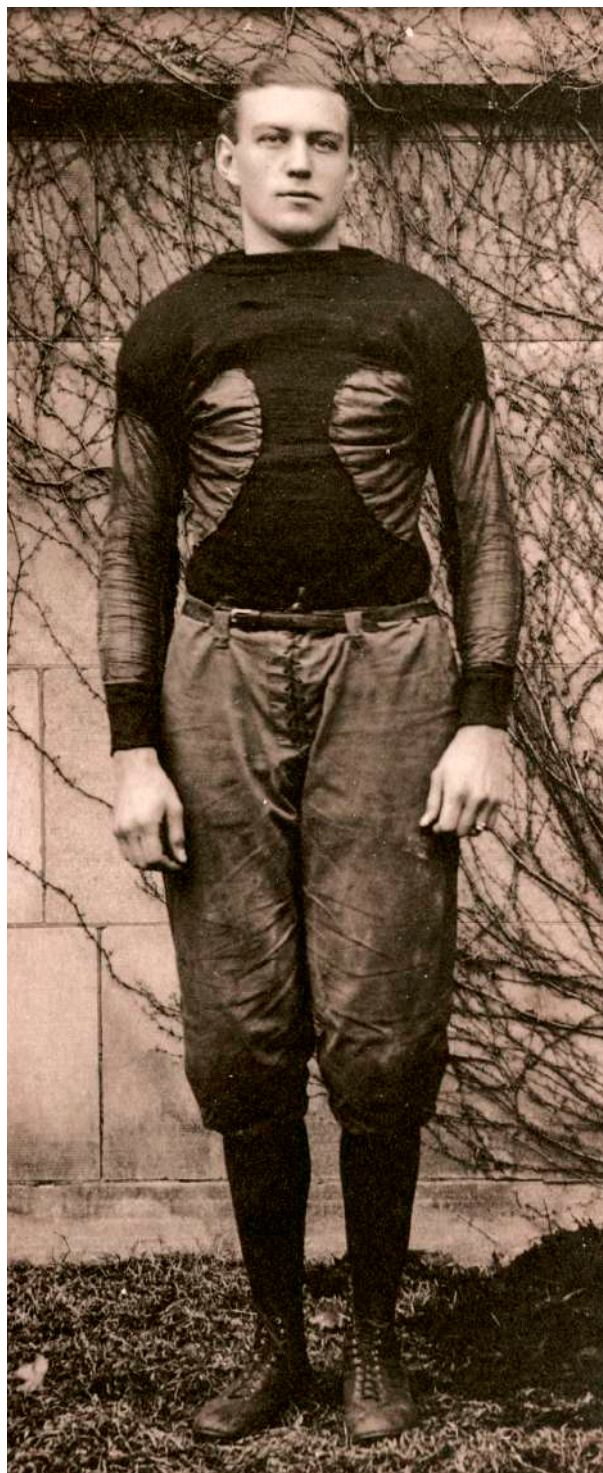
**THE MEDAL ...
SHOULD HAVE
IMMORTALIZED
GOETTLER AS
A HERO OF ONE
OF THE MOST
FAMOUS BATTLES
IN AMERICAN
MILITARY
HISTORY.**

Germans had surrounded the Americans, cutting them off from reinforcements. For the next 100 hours, as Whittlesey's men were slashed to ribbons by ghostlike German machine gunners, artillerymen, and snipers, the survivors quickly ran out of supplies. Instead of food and cigarettes, the men munched on twigs and smoked dried leaves wrapped in yellow message paper. Blood-crusted bandages had to be taken from the dead and applied to those freshly injured. "The wounded would crawl across the frozen ground to the dead," a veteran of the battle later recalled. "They would drag themselves to the corpses, and ransack the pockets and packs for a scrap of food or tobacco. Or search for even a drop of water in the canteens."

By October 5, the men under Whittlesey's command were on the verge of collapse. The Germans, in contrast, were well supplied and continued to pour fire into the American lines from the north and south, leaving the hillside littered with dead bodies the survivors were too exhausted to bury. Stationed safely behind the front lines, Goettler wrote to his mother that same day: "Just a note to let you know I am OK and getting along alright."

The next day, Goettler's squadron was ordered to fly over the Charlevaux Ravine and try to locate the Lost Battalion, which, in reality, was neither lost nor a battalion (a newspaperman coined the phrase). They were to drop much-needed food and medical supplies. Because combat aircraft during World War I were not equipped with radios, ground forces had to communicate with them using signal panels—white bedsheets that ground troops would lay out in certain configurations to represent encoded messages. Fearing that these panels would be visible to the Germans manning the cliffs above their position, the Americans kept them from view.

Mist and smoke covered the ground in the early morning of October 6, making it nearly impossible from 1,000 feet up to identify anyone in the heavily wooded hillside, let alone to distinguish friend from foe. So Goettler dropped to 500 feet to try to get a better look. Then 300 feet. When Goettler and Bleckley reached 200 feet, the Germans hiding in the cliffs began firing from above. The slow-flying DH-4, nicknamed



As a University of Chicago undergrad, Goettler played football and basketball and ran track. He joined the military soon after the United States entered World War I.

the “flaming coffin” because its pressurized gas tank had a tendency to explode, was an irresistible target as it lumbered just above the treetops. Before long, the plane was riddled with bullet holes and gashed by shrapnel, and Goettler was forced to return.

Goettler landed at the airdrome, and soon after he and Bleckley headed back up into the air with another crew’s DH-4. As they approached the location Bleckley had pinpointed on his map before taking off, Goettler pushed the control stick forward and plunged into the ravine once more. They quickly passed above the area Bleckley suspected would light up with heavy enemy fire, dropping almost to the ground in an open stretch of land, rising to clear the trees, before pivoting on one wing to come back around.

To the Germans hidden among the vegetation on the floor of the ravine, a second opportunity to take down an enemy aircraft was not to be missed. Opening up with rifles and machine guns, the Germans did just what the fliers had intended: they gave away their positions.

With each burst of fire, Bleckley marked its origin on his map. But soon hundreds of bullets were chewing through the wing’s wood struts, leaving static wires hanging loose like broken guitar strings. From the ground, an American Field Service ambulance driver watched the daring fliers. He recalled after the war how erratic the biplane’s flight path became before it turned back out of the ravine.

Goettler was dead. A German bullet had blown away most of his skull. Without a lead pilot to control the biplane, Bleckley must have grabbed the rear cockpit control stick, pulling it up and over to turn the DH-4 away from the ravine toward Allied lines. Following this turn, Goettler’s lifeless body likely slumped forward in the front cockpit, pushing the control stick forward as well. With its control cables shot away, the bat-

tered craft heeled over and nosedived into the ground. The impact threw Bleckley from the biplane, causing devastating internal injuries. He took his last breath on the way to a field hospital at Villers-Daucourt.

The day after Goettler and Bleckley were killed, the German troops who had pinned down Whittlesey and his men in the Charlevaux Ravine abruptly withdrew under intense fire from advancing American troops. Of the 694 officers and enlisted men who began the offensive, only 194 sunken-cheeked survivors were strong enough to stagger out of the Argonne Forest.

Goettler’s commanding officer, Lt. D. B. Morse Jr., wrote a heartfelt letter to the young officer’s grieving mother. He did not mention the fact that her son’s mission had been unsuccessful in the sense that the men of the Lost Battalion never received the supplies they badly needed. Morse

clearly believed that was beside the point. Goettler and Bleckley didn’t have to go out on that second flight. They had done their duty the first time around. But that wasn’t enough for them. Instead, they took off a second time likely knowing they weren’t going to make it back.

Their mission, Morse

wrote, was “a most perilous one,” and Goettler had taken it on “with the wonderful spirit he has always shown while in the squadron.” Describing her son’s death as “most heroic,” Morse assured Goettler’s mother that her son would be recommended for a medal for his selflessness and valor. “Your son’s death,” he concluded, “has not been in vain.” ♦

**GOETTLER AND
BLECKLEY DIDN'T HAVE
TO GO OUT ON THAT
SECOND FLIGHT. THEY
HAD DONE THEIR DUTY
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BUT THAT WASN'T
ENOUGH FOR THEM.**

David Chrisinger, AM'10, is the director of the Harris Public Policy Writing Program at the University of Chicago and a contributing writer to the *New York Times's* At War column. He is currently writing a book about famed war correspondent Ernie Pyle, due out in 2021.

GLIMPSES

PARKS AND RESTORATION

How a lawyer-turned-scientist-turned-entrepreneur helped establish Afghanistan's first national park.

BY INGRID GONÇALVES, AB'08

Leopards, tigers, and bears were just the beginning. In 2006 conservationist **Alex Dehgan**, SM'03, PhD'03, ventured by horse, donkey, and yak to some of Afghanistan's most remote landscapes in search of elusive war zone wildlife. Dehgan and his team tracked ecologically crucial keystone species through grasslands, valleys, and mountains rarely glimpsed in American media coverage of the former Soviet-controlled country, the scene of nearly nonstop conflict since 1978. Their goal was to figure out how to protect the surviving fauna.

From 2006 to 2007, in the midst of Operation Enduring Freedom, Dehgan led the Wildlife Conservation Society's Afghanistan program. Through WCS, he helped create Afghanistan's first protected area, Band-e-Amir

National Park, and laid the groundwork for a second, Wakhan National Park. Together these nature reserves protect over 70 percent of the country's snow leopard population.

Band-e-Amir attracted around 25,000 visitors the first year after it opened in 2009, and continues to provide an animal sanctuary and a place where Afghans can enjoy outdoor activities. "The sheer number of Afghans that actually went ... is really the most powerful thing," Dehgan says, "because it means we created something Afghans actually wanted."

Dehgan chronicles his efforts in *The Snow Leopard Project: And Other Adventures in Warzone Conservation* (PublicAffairs, 2019). Now the CEO and cofounder of Conservation X Labs, Dehgan has shifted his focus to the private sector, developing open-market technologies to tackle the



photo courtesy Duke University (left); photo courtesy USAID Afghanistan (top)

Some 25,000 Afghans visited Band-e-Amir National Park in its first year—a sign, says conservationist Alex Dehgan, SM'03, PhD'03, of locals' pride in and desire to protect their country's natural beauty.

underlying drivers of extinction. This interview has been edited and condensed.

You call Afghanistan a biological Silk Road. What did you learn about the health of Afghanistan's wildlife, and how did you go about it?

Afghanistan has been this amazing mixing ground and meeting place of wildlife where three major biomes come together in a single country. You have brown bears from Europe, tigers from Indo-Malaysia, hyenas from Africa. You have species specific to the region, like snow leopards and the markhor, a goat that looks like a unicorn except with two spiral horns instead of one. Great north-south bird migrations from Africa into the Arctic pass through Afghanistan, channeled by the Himalayas and the Wakhan Valley. So it serves as an important transition point.

The international WCS team, which was just under 90 percent Afghan, included about 50 staff and 25 affiliated scientists and conservationists. We wanted to find out what was left after 30 years of war and how to direct our conservation efforts. What effect did conflict have on biodiversity? What areas do we still need to protect? What baselines would we be starting from?

We used things like sensor-activated cameras. We looked at scats, literally the feces of carnivores, and hair samples for evidence of species' presence and perhaps a degree of insight into their population genetics and population size. We were essentially verifying the existence of species that hadn't been seen for 50 or more years.

We found many more species than we had expected. In the case of snow leopards, we thought there were only 70 to 100 of them left in Afghanistan. The evidence suggests that there are over 200 in just one region. There may be more. So there's an even greater imperative for their protection than we ever thought.

Why did you choose to study evolutionary biology at the University of Chicago, especially after earning a law degree?

While I was in New York clerking for the chief judge of the US Court of International Trade, the WCS held a lecture series with the world's best conservation biologists in honor

of its 100th anniversary. They so inspired me that I decided to return to my passion for understanding the drivers and behaviors of extinction—work I'm still doing today.

UChicago had the best program in the country for studying the behavior of extinction, the focus of my PhD. I wanted to go to a school that created theory, not just applied it, so I could understand the assumptions behind models that were being made. I also appreciated the intensive life of the mind the University was known for.

It wasn't easy to go back to graduate school after working on significant national and international cases, including multiple cases that went to the Supreme Court.

What was it like to work as a scientist in a conflict area?

The biggest challenge was obviously the security situation. Land mines were an enormous problem. Afghanistan was the third most heavily land-mined country in the entire world. I probably walked into a minefield chasing after some birds I was trying to document. People we knew were

kidnapped. Being in the wrong place at the wrong time was a real issue—if you were near a car carrying an improvised explosive device, or if there was an attack. There were explosions going off in the city, in government buildings, in the places where we worked all the time.

It sounds surprising, but Afghanistan was the easiest place I'd ever done conservation.

People intuitively and inherently understand the link between their own security and the environment. This whole generation grew up as refugees—Afghans in Iran, Afghans in Dubai, Afghans in Pakistan—and those individuals were rebuilding an identity they already had in association with the incredible wildlife in Afghanistan. It was a point of pride that they had this environment and these species that were worthy of global consideration, attention, and protection.

The Afghan people had been visiting the Band-e-Amir National Park location for hundreds of years. It's near other important cultural sites, like the Buddhas of Bamiyan, and lies near one of the Silk Road routes. The second most important Shia shrine in the country also sits on the edges of the park's most important lakes. Local communities had a number of reasons for wanting to protect the site, from geological and biological to historical, cultural, and religious.

Being in the wrong place at the wrong time was a real issue—if you were near a car carrying an improvised explosive device, or if there was an attack.



After decades under threat from conflict and poaching, Afghanistan's snow leopards are thriving again thanks to the Wildlife Conservation Society's efforts.

With so many development priorities after decades of war in Afghanistan, why a national park?

Conservation is fundamentally tied to the outcomes we expect to see in development. When the environment fails, so does everything else. So does food security. When grasslands fail, we lose pollinators necessary to grow the food. The soil becomes less rich with microbial diversity. The very things that sustain domestic populations also sustain wild populations.

Wakhan National Park, in the Himalayas, was important because environmental management is critical to the survival of the nomadic Kyrgyz tribes and the Wakhi, who inhabit the landscape. The same overgrazing that threatened their livestock was also undermining the survival of the spectacular Marco Polo sheep.

The environment itself can provide a tool to build governance and democracy as well as diplomacy between countries. We had elections for a community conservation council that involved all of the villages along the rivers surrounding Band-e-Amir National Park. The national, provincial, and local governments all participated. Many jobs were created for the protection of this wildlife.

We didn't want it to be a Western park in Afghanistan. We wanted it to be a park for Afghanistan. National parks in the United States have always had some type of local governance, but land tenure is much better established here. Land ownership was an important part of our constitution. In many other countries, there are informal systems of land tenure that haven't been codified into laws or registered through an administrative agency. Many past conservation efforts have been almost neocolonial, running roughshod over traditional interests in land.

By building the governance structures that helped improve how Afghans manage natural resources in the park,

we then could actually help establish that ownership, help set the direction, and help build the leadership for the future of conservation in the country.

Now that you've started your own company, how do you see the roles of the public and private sectors in environmental conservation?

While government is a very powerful entity for addressing the challenges we face, the political climate prioritizes shorter-term interests over the long-term nature of environmental conservation. Because of the fickle nature of government, you can have a rapid shift in policy through executive order.

One example is the Paris Agreement on climate change, which the Trump administration has pulled out of. If you look at the data, the most effective thing we can do for climate change is address cooling technology, which is based on vapor compression—super old, not very efficient. We have billions of people moving into the middle class, in places that are only getting hotter, who will demand refrigeration and air-conditioning. So Conservation X Labs—along with the Rocky Mountain Institute and the Indian government—is running an international competition to reinvent the underlying air-conditioning technology, aiming at a four- or five-fold increase in efficiency as a way of directly meeting the needs outlined in the Paris Agreement.

How do you make things sustainable in an unreliable environment? How do you find new solutions? How do we use the power of innovation? Government plays a huge role, through the funding of science, through laws and policies. But at the moment, in the absence of government action, we are stepping up. ♦

Photo courtesy USAID Afghanistan

INQUIRY

NEWS FROM THE PHYSICAL SCIENCES DIVISION 2019

A wake forms behind the research vessel *Blue Heron*, which carried microbiologist Maureen Coleman from Milwaukee to Duluth to sample the microbiomes of Lakes Michigan and Superior.

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Lake health

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Squishy cells

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Pulse of light

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Muscular music

Photo courtesy Maureen Coleman

DEAN'S NOTE

Organic growth



At the University of Chicago, interdisciplinary research between physical, biological, and medical sciences is leading to life-changing scientific and technological breakthroughs. In the Physical Sciences Division we have a physicist “squishing” cells to study force (“Living Matter,” page 58). We have a geophysical scientist taking to the seas and lakes to plumb microbial diversity and evolution (“Small Bugs in Large Ponds,” right). And we have a computer scientist using electrical muscle stimulation—the kind employed for physiotherapy—to build musical skills and empathy (“Instrumental,” page 62).

Scientists, physicians, and engineers at the University are working together to improve the way we live, approaching research from all directions. Many people view scientific fields as part of a pipeline leading from fundamental research to practical application: math to physics, physics to chemistry, chemistry to biology, biology to medicine. But science isn't so linear.

For the physical and mathematical sciences, adding life to the equation isn't simply the next step. It can create new “building blocks that don't exist in physics,” according to **Margaret Gardel** (page 58), inspiring novel scientific fields and

technologies. Science is a feedback loop, with discoveries framing brand-new questions and catalyzing work in other fields.

Seeing where projects intersect or how breakthroughs might seed new subfields often happens serendipitously. This is why PSD spaces are designed with exchange and dynamics in mind. Chemists and biophysicists commingle in the Gordon Center for Integrative Science. Astrophysicists and molecular engineers brush shoulders in the Eckhardt Research Center—perhaps sharing a cup of coffee in the Quantum Café. And any scientist visiting the John Crerar Library can't help but notice the Center for Data and Computing, an incubator for multidisciplinary data science and artificial intelligence inquiry that fuses fundamental and applied research.

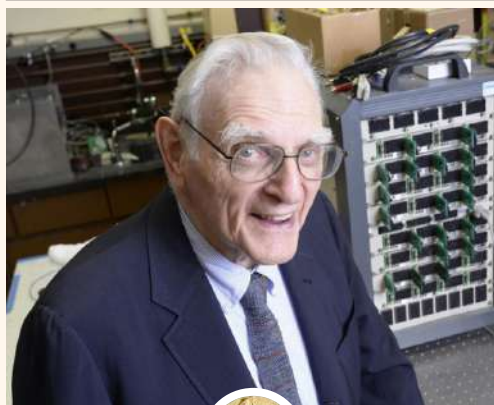
Perhaps an incubator is an apt descriptor for UChicago's science sphere: a safe environment at the ideal temperature with abundant resources to nurture growth.

All the best,

Angela V. Olinto
Dean of the Physical
Sciences Division

Congratulations to John B. Goodenough, SM'50, PhD'52, who shares the 2019 Nobel Prize in Chemistry for his pioneering work developing lithium-ion batteries. His research helps lay the foundation for a wireless, fossil fuel-free society (see Notes, page 72).

JOHN B. GOODENOUGH



MICROBIOME

Small bugs in large ponds

Coleman's lab samples the teeming microbiome of the Great Lakes.

BY LUCAS MCGRANAHAN

There's a lot of interest lately in the human microbiome,” says **Maureen Coleman**, an assistant professor in the Department of the Geophysical Sciences. “But lakes also have a microbiome.”

If you swallow a drop of water from Lake Michigan, she explains, it will contain roughly a million bacterial cells and 10 million bacteriophages—tiny viruses that infect bacteria and may outnumber every other organism (micro and macro) on Earth. Coleman's lab studies how such communities of microbes adapt, interact, and coevolve.

UChicago researchers are fortunate to have an excellent model system for studying bacteria and their hangers-on right in their backyard. This sys-

Photography by John Zich (left), photo courtesy the University of Texas at Austin

tem is not just Lake Michigan but the Great Lakes as a whole. “It was shocking to me when I arrived here in 2012 that no one had yet systematically characterized the microbiome of the Great Lakes,” Coleman says. Her lab is now doing just that, in collaboration with the Environmental Protection Agency. (The EPA has tracked water quality and some multicellular organisms in the lakes since 1983, but its research had not included the systematic sampling of bacteria, archaea, and viruses.) A forthcoming paper in the journal *Environmental Microbiology* details some results of the lab’s work completing the first microbial time series—a comparison of populations in water samples drawn from the same sites over time—that covers all five Great Lakes. They completed their spring 2019 sampling in May and summer sampling in June—their eighth year on the water.

Why dip your toes into such an ambitious research program? Because microbes perform a number of vital ecological functions. For one, Coleman says, they process all of the runoff from land, including “all of the fertilizer, all of the pesticides, all of the pollution from Chicago—although not our sewage because we send that down the river.” They are also fundamental to the food web. “If you’re interested in fisheries, for instance, you need to care about what’s happening at the very bottom of the food web as well.”

Moreover, microbes serve as “sentinels for change” by indicating shifts in environmental conditions. Coleman cites a 2014 incident in which drinking water in Toledo, Ohio, was tainted by a toxin produced by a bloom of cyanobacteria in Lake Erie. Detecting shifts like these and understanding how they occur can help scientists predict and mitigate some of the harmful effects of climate change or changes in land use.

The Great Lakes “each have their own unique character—Lake Erie is really, really different from Lake Superior—and yet at the same time, they’re connected,” Coleman says. While

this makes them a theoretically interesting system, the lakes are also inherently valuable, supplying a staggering 20 percent of the world’s liquid fresh water. Keeping this precious, sought-after resource in good shape is, in large part, a matter of following the microbial signals.

Real-world challenges such as these are what motivate Coleman, whose PhD from MIT is in civil and environmental engineering. “I am in no way qualified to build a bridge or anything,” she says, laughing. “But I do still carry with me that desire to solve problems, as opposed to just studying basic science for the pure love of theory and fundamentals.”

Coleman describes fieldwork and lab work as complementary: discoveries in the wild can inspire hypotheses that you test back home. In the lab, Coleman’s team uses a technique called *transposon sequencing* to knock out genes from microbes and observe the resulting functional differences. “With this approach you can do global-scale gene deletions and then test the functions of all of these genes essentially in parallel.” Such experiments are in demand: scientists have gotten so good at discovering microbial genes that thousands more have been identified than are well understood.

The scope of the unknown in microbiology is a familiar and humbling fact to Coleman. Her PhD research was on the photosynthetic cyanobacterium *Prochlorococcus*—an organism that, despite being among the most abundant bacteria on Earth, was not discovered until 1986, by a team including Coleman’s adviser Sallie “Penny” W. Chisholm. Today’s sequencing technology, Coleman says, “gives us a new tool to figure out how much we don’t know.” ♦

DISCOVERIES IN THE WILD CAN INSPIRE HYPOTHESES THAT YOU TEST BACK HOME.



Maureen Coleman and her team sailed on the research vessel *Blue Heron* in June 2019 to collect water samples from different lake depths for microbial DNA analysis.

A black and white microscopic image showing numerous cells, likely fibroblasts, with prominent actin filaments visible within them. The cells are spread out, showing various shapes and internal structures. The actin filaments appear as bright, fibrous networks against a darker background.

BIOPHYSICS

Living matter

How Margaret Gardel accidentally became a biophysicist.

BY JEANIE CHUNG

Margaret Gardel, the Horace B. Horton Professor in the Department of Physics and the College, found her area of study through a series of serendipitous events. Her graduate research at Harvard focused on filamentous actin, a polymer found within cells in multicellular organisms.

In living cells actin drives cell motion and is essential in building multicellular tissue. Gardel was interested in the ways actin (as part of a polymer network inside cells) deforms in response to external mechanical stress, but in a physics lab the approaches used to study those types of properties had been developed for traditional polymeric materials—think of Jell-O or Silly Putty. Those materials don't spontaneously move or build complex multicellular organisms.

Near the end of graduate school, Gardel was increasingly bothered by this gap. How can we make measurements to understand the materials that living cells use to support their physiology?

Through a chance exchange with a collaborator, Gardel attended the physiology course at the Marine Biological Laboratory after she finished her PhD. There she met cell biologists willing to teach a physicist about the inner workings of cells. She also met Clare Waterman, who convinced her to leave her postdoc position and move across the country to join her cell biology lab at the Scripps Research Institute, where she learned how to image the polymer networks inside cells while they are crawling and building adhesions with the external matrix and each other.

Since Gardel had taken only one biology course as an undergraduate, her time with Waterman proved critical. She was used to thinking of material building blocks as passive structural elements. But proteins and other building blocks used by living organisms are mechanochemical enzymes—that is, they can convert chemical energy to do local mechanical work. Likewise, local mechanical forces also impact their chemical reactivity. Thus, living materials provide building blocks that don't exist in physics, inspiring new types of research.

Image courtesy Patrick Oakes

Left: In cells, the F-actin cytoskeleton is responsible for much of the force generated and transmitted across individual cells. These biophysical behaviors play an important role in cell adhesion, migration, and division. Right: Margaret Gardel and her lab are pictured in 2019.

For example, Hooke's law of elasticity, which addresses force on objects, doesn't always work the same way on living materials—which move spontaneously, change shape, react, and change their chemistry. "There's lots of more-intricate properties happening," Gardel says.

Gardel's lab—its URL is squishycell.uchicago.edu—seeks to understand how physical forces such as pressure and deformation act on individual cells. The lab's two main areas of inquiry complement each other: One seeks to understand the physics of how living cells adhere and move. The other, she says, seeks to build cell-like material "from scratch."

To address these challenges, Gardel collaborates with labs across the division, as well as in the Biological Sciences Division. For example, UChicago cell biologist **Michael Glotzer** developed a genetically encoded tool to control the localization of proteins within living cells using light. With this tool, Gardel's lab has studied how cells respond to local changes in force either internally or at points where they connect with other cells. In the second research area, Gardel is working with UChicago biochemist **David Kovar** on a project building active materials: gels and fluids that contract the way muscles do.

If scientists can understand how biological materials adapt, they'll learn new types of design principles. There are undoubtedly dozens of applications for those design principles in medicine alone, but Gardel is most interested in figuring out how things work. Scientists have wanted to understand cells since

LIVING MATERIALS PROVIDE BUILDING BLOCKS THAT DON'T EXIST IN PHYSICS, INSPIRING NEW TYPES OF RESEARCH.

first seeing them under a microscope, and unlocking the biochemistry and genetics of cells has answered a lot of questions.

"What 20th-century biology has given us is knowledge of what's under the hood," she says. However, she adds: "We still don't know how each of the components work together to facilitate the complex cell physiology." ♦



FORCE AMPLIFIER

BY JEANIE CHUNG

As **Margaret Gardel** leads the scientists in her lab toward discoveries in "living matter," she hopes they learn from each other as well as from her. She recalls her graduate adviser at Harvard, David Weitz, saying, "If I'm the only person you've learned from in graduate school, you've wasted your time." She gives her lab members the same advice.

Fostering a collaborative environment is an important part of scientific research today, she says. So is acknowledging—and then trying to reduce or eliminate—unspoken or unconscious biases. Gardel considers herself one of many women in science of her generation who "really felt like gender was not an issue—until we got to the higher stages and realized it is."

Gardel says she has always felt well supported at UChicago. However, as she's progressed in academia, serving on grant review committees, participating in speaker selection for conferences, and interacting with journal editors, she has become "more aware of all these interactions that occur that are not necessarily based on the quality of the science."

She now feels more strongly about calling out these biases—even just talking about them in stories like this one—and being a "more vocal advocate for people who aren't in a position to advocate for themselves." ♦

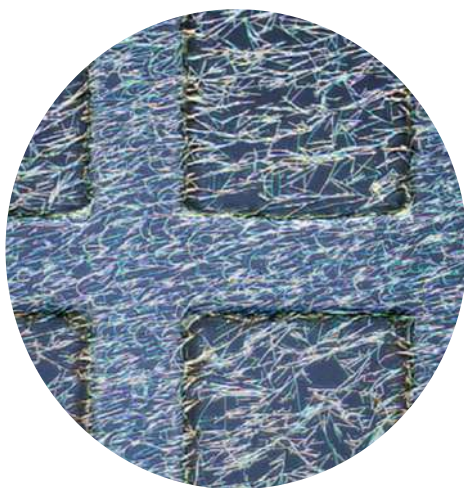


INNOVATION

Light hearted

*Chemist Bozhi Tian illuminates
pacemaker technology.*

BY MAUREEN SEARCY



An optical microscopy image of the silicon nanowire mesh shows high-density random nanowires supported over a polymer framework. (The density increases contact area between the wires and the heart muscle cells; the random configuration is easier to manufacture.)

Sometimes the heart needs a hand, like when it beats too quickly, too slowly, or out of sync. Our hearts have an innate electrical system that controls their rhythm, and when that system malfunctions, physicians may opt for a pacemaker. This matchbox-sized device consists of a battery, a computerized generator, and electrodes that attach to the heart. When the pacemaker detects an abnormality, it sends a little burst of electricity to get the heartbeat back on track.

Traditional pacemakers, first used in humans in 1958, come with inherent risks. They're "not freestanding," explains associate professor of chemistry **Bozhi Tian**. The need for a battery pack increases the device's size, "making implantation a more invasive procedure."

The size also causes irritation, which can lead to an inflammatory response. The device can get coated with immune cells and fibrous material from the extracellular matrix—the network of proteins and carbohydrates found in the space between cells. This type of biofouling, Tian says, "reduces the pacemaker's electrical signal transduction efficiency because signals will get lost."

His team has developed a potential solution: a wireless pacemaker powered by light. The device is based on existing solar cell technology, but shrunk down to the nanoscale—a mesh of silicon nanowires embedded in polymer for support.

Silicon, a semiconductor that serves as a building block for computer chips, is an ideal material because it has "a lot of electronic and optical functions you can play with," says Tian. "You can convert light energy into electricity."

Working with both cultured cells in a dish and isolated rat hearts, Tian's team attached the mesh to heart muscle tissue and then scanned the mesh-coated area with a laser, delivering pulses of light. The mesh in turn produced electricity, activating the heart cells to beat at the same frequency as the flashes. Scanning, rather than the direct application of light, is more efficient and safer for the cells, which can be damaged by too much energy.

While traditional pacemaker surgery is considered minimally invasive, with the device implanted through a small

incision in the chest, Tian's mesh could be delivered even less invasively, via needle injection. The surgeon would even target areas of the heart with pacemaker cells, mostly found in the sinoatrial node close to the right atrium wall. These cells naturally generate electrical impulses, and that energy flows throughout the heart, causing it to pump.

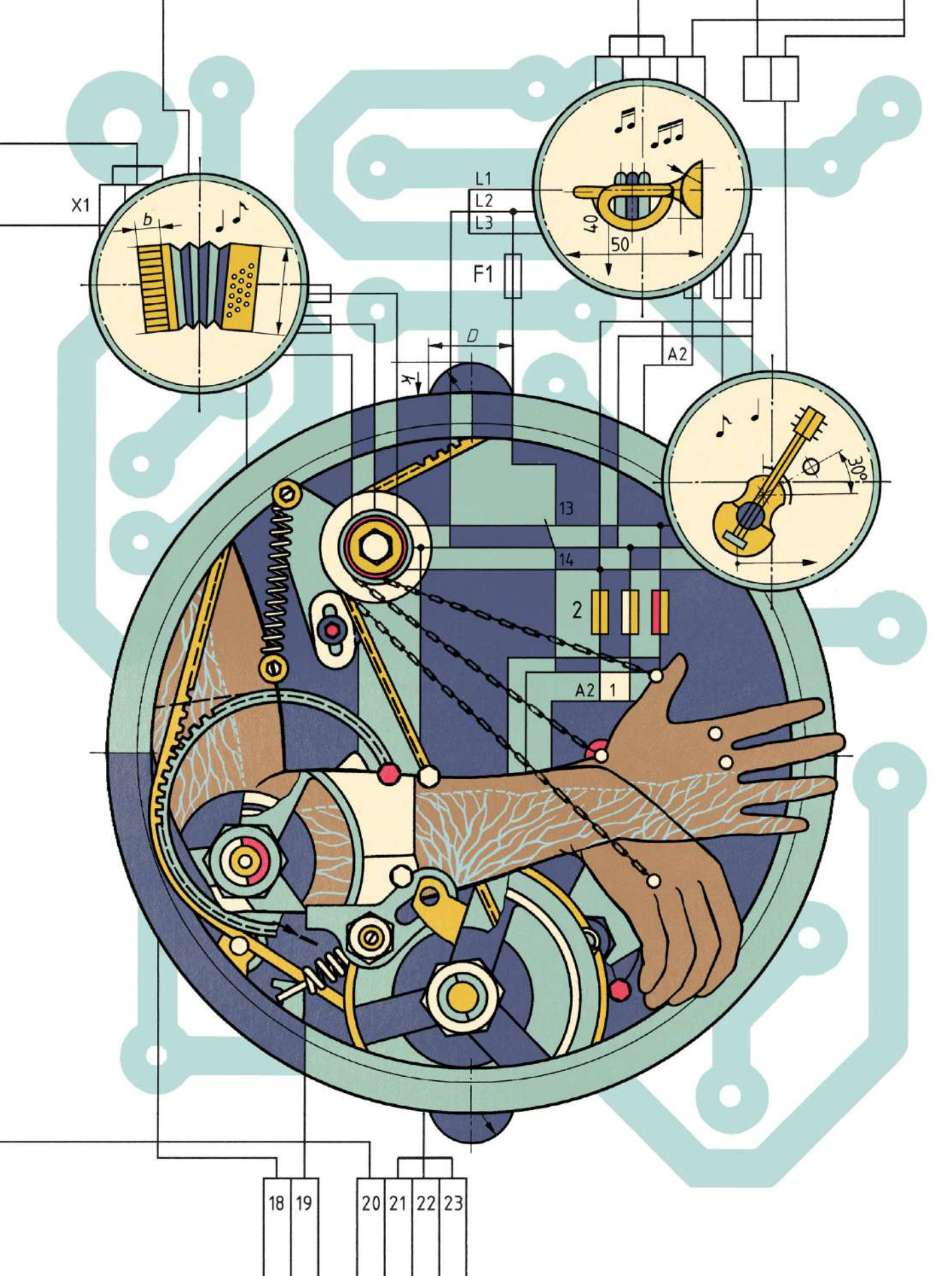
Light could be delivered in a few different ways, including through an optical fiber. After injecting the mesh, a fiber about the diameter of a human hair could be plugged into the same hole, with one end touching the mesh and the other exposed to the outside world, able to guide light to the pacemaker.

Traditional pacemakers can be permanent or temporary. If an irregular heartbeat is caused by something acute and reversible, such as drug toxicity or infection, a pacemaker may be needed only until the underlying problem is solved, and this is the type Tian's light-powered mesh is aimed at replacing.

Nanostructure silicon can dissolve inside a human body within a few weeks, making it optimal for transient applications. (Silicon degrades into silicic acid, which can be filtered by the kidneys, so in small enough doses, it's safe for humans. The polymer support for the silicon can be biodegradable as well.) "You would inject one dosage, apply the light pulses, and then treat the patient for a short window, perhaps a few days," says Tian. "Then there's no need for additional surgery" to remove the device.

Much of the work in Tian's lab has the potential to directly improve medical care. This project builds on technology originally developed to stimulate neurons, a concept pioneered by **Ramya Parameswaran**, PhD'18, an MD/PhD student who completed her biophysics degree in Tian's lab and is now finishing her medical training at the Pritzker School of Medicine.

"At this stage we certainly hope to work with medical doctors because that's how we make real impact," says Tian, "but we must first optimize the technology," improving the device's optical pacing, efficiency, and power demands. Tian predicts they might be ready to approach clinicians in a couple of years—if they keep up this pace. ♦



Instrumental

Computer scientist Pedro Lopes integrates technology with anatomy to reimagine the role of “human” in human-computer interaction.

BY MAUREEN SEARCY

The sparse room is almost blindingly bright: white floors, white walls, white exposed ductwork, and a primary-yellow door. Articulated fume extraction pipes (think robot arms with suction cup hands) extend from the ceiling, and a Styrofoam human head sits on the bench. Above the white noise of fans and beeping electronics plays the otherworldly whine/hum/squeal of a theremin—the classic B-movie UFO sound effect. If Stanley Kubrick and Ed Wood had teamed up to imagine the year 2019, it might have looked something like **Pedro Lopes’s** lab in the recently renovated John Crerar Library.

In the center of this futuristic space stands **Marco Kaisth**, Class of 2021, himself a study in retro styling in a Western yoke shirt, plaid cropped pants, and mod boots. Kaisth waves his arm through the air, his fingers fluttering as if playing invisible strings—and the music fluctuates. That’s how you play a theremin, moving your body through the instrument’s electromagnetic field to produce sound. But it’s what you

can’t see that’s most interesting: the theremin, in a sense, is playing Marco. He can *feel* the music. His fingers are moving involuntarily.

The details of this work aren’t yet published and must remain under wraps for now, but the crux of the project represents a theme in Lopes’s research—reversing the flow of control within human-computer interaction and reimagining the nature of the relationship between humans and technology. In Lopes’s office one

**BUT IT’S WHAT
YOU CAN’T SEE
THAT’S MOST
INTERESTING.**

floor up, relocated from the lab to give his students “acoustic space,” Lopes writes H-C-I vertically on a scrap of paper, like a ladder with the H on top. “In HCI, a human controls the com-

puter.” What if you put the computer on top? And how would that affect our sense of control? (Some may dread a *Matrix*-like future, but Lopes qualifies that the computer must still be programmed by a human. Whether that’s better than being controlled by artificial intelligence is debatable.)

The field of human-computer interaction (HCI) is difficult to define, even by experts, except in the most redundant way: it’s how humans interact with computers. Before Lopes joined the computer science department as an assistant professor in January, UChicago had no dedicated professors in HCI, though Neubauer Family Assistant Professor **Blase Ur** and Neubauer Professors **Ben Zhao** and **Heather Zheng** all count HCI projects among their work.

Ur, who takes a human-centered approach to studying computer security and privacy, says the field looks at how to design computer systems to better meet users’ needs and habits. Researchers adopt techniques from sociology and psychology to understand how people use computers and other tech-

PEDRO LOPES is an assistant professor of computer science, leading the Human Computer Integration Lab. Lopes’s team engineers interactive systems that intertwine computing with anatomical functionality to supersede mobile and wearable technology. Several of their systems use electrical muscle stimulation to provoke movement, raising questions of control and agency. To read about how Lopes’s interactive wearable systems increase realism in virtual reality, with the potential to build empathy, visit mag.uchicago.edu/similitude.

nology in practice, which is often distinct from what the designers intended.

Zhao and Zheng, a married team who operate a joint lab, study human behavior as illuminated by data. Zhao conducts empirical research with a slant toward security, trying to model and predict human behavior, while Zheng focuses on mobile computing and sensor data, gathering information from wearables to better understand the behavior of, for instance, patients and caregivers, which could help make health care more efficient and predictable.

In this vein, some of Lopes's work follows the conventional HCI venture of developing technology to record, facilitate, or enhance human action. Wearable tech—a booming subset of HCI research—features prominently in Lopes's lab, including stretchy electronics, ideal for biometric sensors of the type Zheng might use to gather hospital data.

Take, for example, visiting PhD student Steven Nagels, who brought his work on stretchable circuitry when he joined the Lopes Lab in January. The material combines comfort and

In a lab filled with computers and electronics components, Nagels pulls out a floppy square of silicone with an embedded circuit. He alligator-clips the circuit to a power source, and a green LED lights up inside the patch. He then twists, folds, and stretches the square, and it returns to its original shape, still illuminated. A normal circuit board has rigid electrical connections; such treatment would break the wires. Nagels solved this problem by creating chambers within the silicone and pouring in metal that remains liquid at room temperature. A constant liquid state makes for flexible conductivity.

“Such resilience means engineers could put electronics in places normal circuit boards can't go,” says Nagels, and makes the technology extremely promising for wearables, particularly those meant for skin contact. Stretchy electronics could sit on the body for extended periods without hindering your movement. They could be incorporated into any kind of material, even a sweatshirt that can be easily removed. (Laundry involves water, heat, and mechanical force—all enemies of

that scrambles surveillance, like the microphone-jamming bracelet that Lopes, Zheng, and Zhao are developing. But what if the technology—skin-adhered electrodes, for instance—was used to deliver information instead of gather it, to control the human rather than the human's environment? This is how some of Lopes's work differs from that of his HCI colleagues.

Beginning this line of inquiry as a graduate student at the University of Potsdam in Germany, Lopes looked at the ways technology interfaces with anatomy. For biosensors, the human body is the input, transmitting information to a computer. Perhaps he could make the body the output, reacting to computer processing.

In the realm of movement, which is of particular interest to Lopes, there are a couple of ways to flip the flow: devices based on mechanical actuation and those that use electrical muscle stimulation (EMS). Mechanical actuation for wearable technology involves motorized equipment, like robotic exoskeletons—your body is simply along for the ride. In contrast, EMS sends signals to your muscles, making your body a computer peripheral device. You, the human, are the printer, the monitor, the speaker, receiving information and acting on it. This is the technology Kaisth's *theremin* project relies on.

Electrical muscle stimulation uses a pair of electrodes stuck to the skin to deliver small jolts of electricity to muscles, making them involuntarily contract. (The concept traces back to 1791, when Luigi Galvani discovered that electric current made an inanimate frog leg twitch, partially inspiring Mary Shelley's *Frankenstein*.)

“When a burst of electricity enters the first electrode, it wants to come out of the second,” Lopes explains. “As it travels through the medium

SUCH RESILIENCE MEANS ENGINEERS COULD PUT ELECTRONICS IN PLACES NORMAL CIRCUIT BOARDS CAN'T GO.

flexibility for a variety of wearable applications. (Nagels, one of several lab members whose expertise lies outside of computer science, specializes in electrical engineering and materials science. Lopes intentionally devised his team to include diverse specialties to best suit the many facets of HCI.)

electronics—but Lopes and Nagels, now back at his home institution, Hasselt University in Belgium, seem confident that this material will eventually be washable.)

Wearable tech is a broad field: it includes the ubiquitous fitness tracker, as well as experimental equipment



Pedro Lopes (top) stands outside one of his labs in the John Crerar Library. The group's name, Human Computer Integration Lab, emphasizes the expanded scope beyond simple interaction between humans and technology. Steven Nagels (bottom) demonstrates a stretchable circuit.



A video shows people wearing the contraption trying to pick up a white cube. When one woman nearly grasps the cube, her fingers jerk away. “It doesn’t want to be grabbed,” she laughs. The instrument had been programmed to “tell” the user of its unwillingness to be held by stimulating the muscles to back off. Other participants try to spray paint a design on cardboard, but the spray can “instructs” them to shake it first.

The participants are then given a specialty tool, a magnetic nail sweeper, whose function is not intuitive. The wearable device instructs them how to grasp the tool and gather scattered nails and then how to pull a release bar to drop them into a bin. “In a wild future, you could wire up and learn by doing rather than reading an instruction manual,” says Lopes. He notes that the same could be achieved with an exoskeleton, but “I wanted to see if we could do it without being so instrumented,” with a more seamless human-technology interface.

The learning could skip the brain entirely and go straight to muscle memory, but whether your body actually retains the lesson remains to be seen. Lopes is collaborating with Shinya Fujii, a neuroscientist at Japan’s Keio University, to investigate whether EMS could build drumming skills. (Fujii is a drummer while Lopes is a turntablist, playing turntables as if they were full-fledged instruments.) After training beginner drummers through “passive action,” or electrical stimulation of the arm muscles, they found that the drummers did improve, but not much more than had they spent time practicing.

What was notable was the striking improvement in the nondominant hand and the speeds the drummers were able to reach while wired up. “We’re making people drum as fast as the world’s fastest drummer,” says

that is your body, it crosses your skin, and most people say it tingles because it’s a form of vibration.” The electrical impulses then encounter nerve cells connected to muscles, or the muscles themselves. When the muscles feel current, “they do what they always do, which is to contract.”

Lopes first started experimenting with EMS at the University of Potsdam’s Hasso Plattner Institute, exploring eyes-free interaction for wearables. He focused on proprioception—the ability to sense the orientation and movement of your body within its environment. (Close your eyes, stretch out your arms, and then touch your index finger to your nose. That ability comes from proprioception.)

One of his applications dealt with gesture recognition: Lopes wondered

if your smartphone, connected to you by electrodes, could deliver information by moving your body. Perhaps the phone compels a person’s finger to move in the shape of a “5,” as an alert for five unread messages, or in a heart shape to indicate a message from a close friend, he explains on his website.

Lopes also realized that EMS could be used for more than notification; it could be used to train or teach the muscles directly, similar to its use in physical therapy for rehabilitating muscle function. For instance, a wholly unfamiliar object could itself teach a person how to use it.

To demonstrate the concept, Lopes developed a prototype that uses an EMS-wired device worn on the hand and forearm and a multicamera setup to track the user’s hand proximity to an object.



Pedro Lopes's collaborative, interactive art installation *Ad Infinitum* invites visitors to insert an arm into a box. The participant is then captured when electrified cuffs close down on her forearm and deliver mild muscle stimulation, causing her wrist to involuntarily pivot to turn a crank. The machine, deemed a "parasite" by its creators, harvests human kinetic energy to power itself. To be released, the restrained human must convince another participant to take her place at the other end of the table.

Lopes. Maybe such conditioning will lead to unfair competition advantages—electrical doping of sorts. "Shinya said that if this changes the rules, he'll be happy. And I agree."

Lopes emphasizes that he and his collaborators use medically compliant devices in their research that are carefully calibrated for human use and have fail-safes to prevent injury. Still, a small amount of current can be dangerous. "You can kill yourself with a 9-volt battery," he says, so any projects that involve human subjects go through an institutional review board. Lopes also believes in the value of open source; in 2015 he and a colleague in Hannover, Max Pfeiffer, designed a device that safely leverages standard EMS generators and made the source code and schematics public to help researchers begin exploring EMS.

In a UChicago lab that is relatively new, Lopes and his team still experiment with EMS, the work that was his baby for so long, which he "could talk about till dinner." But he wants the lab to grow from that technique to explore other ways humans can bond with

technology. "We're trying to see if we can do that with more human capabilities, human skills, human senses."

WE'RE MAKING PEOPLE DRUM AS FAST AS THE WORLD'S FASTEST DRUMMER.

The reversed directionality of Lopes's work raises questions of agency—both physical and philosophical. First the easier scenario: what it feels like to resist EMS impulses. If you insist on grabbing the "unwilling" white cube, "it feels literally like you're resisting a force," explains Lopes. "In other projects, we've used that as a trick to create the feeling of weight" in virtual reality.

The system is designed to recognize when the user is resisting the stimulation and disconnect. And because EMS-instructed action can only be as strong as the human's own muscles, it can also be overcome by the strength of the human's own muscles, unlike a mechanized exoskeleton. When asked if someone could hack such a device to compel you to act against your will, Lopes stresses that any technology can be vulnerable to infiltration, but the strength limitation offers protection.

Willingness poses a different set of issues. If technology inspires action (or aids function through nerve-integrated prostheses, for instance), it can "feel like this alien force," says Lopes—you think and something else acts. This is particularly troublesome with exoskeletons because of the external nature of the hardware. For such technology to feel natural, it needs to "synchronize or harmonize with your intention," actuating at a speed faster than possible without the device (in the scientists' terms, achieving "pre-emption") but slowly enough that the person feels they initiated the action.

Photography by Arthur Silber

Lopes and **Jun Nishida**, a postdoc in his lab, collaborated with Shunichi Kasahara, an associate researcher at Sony, to explore how fast they could accelerate human reaction without compromising people's sense of agency. With their ring fingers wired to receive EMS, subjects were asked to tap a touch screen when a target appears. The researchers programmed stimuli to be delivered at different speeds, measured reaction time, and asked the subjects to record their sense of agency.

The paper, presented in May at the 2019 CHI Conference on Human Factors in Computing Systems, showed that stimulating the subjects 160 milliseconds after the target appears sped up reaction time by 80 milliseconds while preserving the strongest sense of agency. That is an incredibly short window, where the subject feels just a shadow of external impulse, barely distinguishable from their own intention. This finding might help optimize wearable technology for the most natural experience.

While research based on self-reported sense of agency involves metaphysical elements, the experimental design can be quantified. Time frames can be measured; data patterns can be analyzed; conclusions can be formed. But not all of Lopes's work revolves around an answer. Sometimes the question is what matters, and "art seems to be a good way to not just ask the question but also inject it into people's minds. It's like an *Inception* thing."

In 2015 four musicians—one on bass, one on guitar, one on vibraphone, and Lopes on turntable percussion—played in front of 80 people in the now-shuttered media space Spektrum Berlin. In a video posted on Lopes's website, the music is a din of discor-

dant sounds, and the players jerk and lurch like marionettes, which in a way they are. The audience is full of puppeteers controlling the quartet through a web app. They can make a musician play or stop playing by tapping the performer's name on their smartphone screen, which sends a stream of electrical muscle stimulation.

(The instruments, even the guitar and bass, are treated mostly as percussion tools. EMS isn't yet precise enough for sophisticated, targeted movement because of the layered nature of muscles. Using EMS to teach writing or violin is quite a ways off. Dancing is probably not as distant because it requires coarser motion, says Lopes—a welcome prediction for the pathologically unrhythmic.)

At the end of the roughly 12-minute performance, the audience members' screens appear to glitch and they see a closing message posing the question: Were the audience members in control or were they being "played"?

The "conductive ensemble," as Lopes calls it, was an art piece designed to provoke thought about the notion of control in relation to social networks and their pervasiveness.

Between 2016 and 2018, one of Lopes's art installations, called *Ad Infinitum*, was staged at five exhibition spaces around the world, including Austria's Ars Electronica. The piece, created with Patrick Baudisch (Lopes's PhD adviser at the time) and several fellow graduate students, comprises a box into which visitors insert their arms. Cuffs close down on their forearms and deliver mild electric shocks that cause their wrists to involuntarily pivot, forcing them to turn a crank; the device is harvesting kinetic energy to power itself. The only way to be released is to convince another participant to take your place

at the other end. The installation likely hosted 200,000 arms over its exhibition life.

The creators call the installation a parasite that lives off human energy. It "reverses the dominant role that mankind has with respect to technologies: the parasite shifts humans from 'users' to 'used.'" As described on its website, *Ad Infinitum* is a "critical take on the canonical HCI configuration, in which a human is always in control."

Lopes's art doesn't always provide an answer to the question; that's not the point, after all. But he "started valuing art as a mechanism to do research." Sometimes art works better than empirical methodology to explore an idea, so he takes "that route rather than the hypothesis-testing approach." When his team brainstorms, often there's an outlier that they realize would make a great art project. (Several lab members are also artists.) "It's such an interesting space to probe people's imaginations."

Questions of flow and directionality and control only matter so long as there's a disconnect—no matter how minuscule—between humans and computers, but Lopes's grand overarching goal is to achieve complete fluidity between technology and us. In fact, his research group is called the Human Computer *Integration* Lab, emphasizing the expanded scope beyond simple interaction.

"A good interface matches your expectations," says Lopes. It feels natural and does exactly "what it afforded you to do." By moving certain interfaces to the body itself, he's removing instrumentation, making for a more organic experience. You shouldn't know where you end and the tech begins.

"Good HCI has no *I*—it just happens," says Lopes. "So my secret objective for the field is to destroy it." ♦



EXCERPT

The angle of reflection

*From the University of Chicago Magazine print archive:
Gamesmanship and America's first Nobel Prize scientist,
Albert Abraham Michelson.*

BY NORMAN F. MACLEAN, PHD'40 | SUMMER/75

Norman F. Maclean, PhD'40, was the William Rainey Harper Professor of English at the University of Chicago, teaching from 1930 to 1972. The year before his semiautobiographical collection *A River Runs Through It and Other Stories* was published by the University of Chicago Press in 1976, Maclean wrote an essay for the University of Chicago Magazine about his time spent in the Quadrangle Club billiards room with Albert A. Michelson, founder of UChicago's physics department. » Michelson approached his personal pursuits—games, music, painting—in much the same way as his physics: with attention to both precision and beauty. His universe was governed by “esthetics, mechanics, and gamesmanship,” says Maclean, “all shades of one another.” » In recognition of the Physics Research Center's new name, the Michelson Center for Physics, we here excerpt Maclean's reflections on Michelson's scientific endeavors. To read the full essay—including Maclean's speculation as to why Michelson was terrible at bridge but brilliant at billiards—visit mag.uchicago.edu/billiards.

"I always think of Michelson as the artist in Science. His greatest joy seemed to come from the beauty of the experiment itself, and the elegance of the method employed."—Einstein, in a telegram to a fellow physicist on the 100th anniversary of Michelson's birth. Mount Wilson Observatory director Walter S. Adams (left) met with Albert A. Michelson, Albert Einstein, and Robert A. Millikan in 1920 at the Technological Institute in Pasadena.

When I came here in 1928, now more than half the history of the University ago, the University of Chicago was the one institution of higher learning that was thought to exist west of the Appalachians by the populace east of the Appalachians. This widespread recognition was based largely on the names of Leopold and Loeb, Clarence Darrow (who in the eastern mind was also connected with the University of Chicago), A. A. Stagg, and Albert Abraham Michelson, who in 1907 had been the first American to win the Nobel Prize in science. Before arriving on campus, I may also have heard of Arthur Holly Compton, because only the year before he had been awarded the Nobel Prize, but I have the feeling I did not know of him until I saw Mrs. Compton showing him off at intermissions in Mandel Hall.

Michelson and Einstein, however, were the best known scientists of the time—in some ways for almost opposite reasons, although both were physicists. Einstein was the wonder of the world because he had encased the whole universe in a simple formula, $E=mc^2$, which we were told, equally wonderful to us, would be very upsetting if we could understand it. Especially to us who could not understand, he was the theorist beyond theorists.

Michelson's wonder was what his head did with his hands, and a few boxes and rotating mirrors. He measured things, especially things that were regarded as unmeasurable, ineffable, and precious as life itself. Among other things, he had measured light and a star. I watched him play billiards nearly every noon for several months before he retired from the University, and, in introducing myself, I could further say with equal truth, "Shake the hand that shook the hand of John L. Sullivan." If I get the right opening, though, I prefer saying, "When young, I watched Michelson play billiards."

Michelson's hands were to make many things that brought light to our universe, but nothing so marked him in the popular mind as his measurement of the speed of light itself. Throughout most of history, light had been thought of as instantaneous and present wherever there was nothing to cast a shadow, and probably throughout all

history light will be thought of by poets and the rest of us as the source of body and soul, without which there would be no photosynthesis or food or love or moonlight in which to make love. Without light for a metaphor there would have been little poetry written and no candlelight to write it by. Christ said, "I am the light of the world," and Cardinal Newman's hymn to Him begins, "Lead, kindly light."

Michelson was to measure the speed of light many times (his most accurate figure being $186,285 \pm 2\frac{1}{2}$ miles per second) and modern electronic equipment has changed that figure to only 186,282.3960. When in 1878 as an ensign in Annapolis he made his first measurement he spent \$10 of his own money to assemble his equipment (for \$10 light measured 186,508 miles per second).

Michelson was the best billiards player I have ever seen at the University, and I think I have seen all the really good ones, including the barbers at the Reynolds Club. At first I was somewhat embarrassed to see how good he was, because I did not expect to find any academic type as good at a "manly sport" as the best we had in western Montana. But the more I thought about it and the more I learned about Michelson, the less surprised I became. Before long, I comforted myself with the question, "Why not? He's the best head-and-hands man in the world."

So it wasn't just billiards I watched when I arrived early every noon to watch Michelson play billiards. I came to watch his hands. The year 1928 was still in an age which counted men who made machines among its marvels and took for granted that the rest of men could use tools and that women could embroider beautifully. Edison still performed his wonders, but the wonders of Bell and Edison were more or less household utilities. Michelson's head-and-hands made machines almost godlike in properties, designed to tell us how it was with the universe. His favorite creation was his interferometer, with which, among other things, he (and later a collaborator, Edward Morley) had performed an experiment that shook the old universe and gave Einstein a big push toward creating a new one with his theory of relativity.

Before the Michelson-Morley experiment, the common scientific assumption was that the universe consisted of bodies of matter moving through and permeated by a substance that, although invisible, had somehow itself to be material. This substance at first was spelled “aether.” Since Michelson tended to believe that the major theories of the universe were already in and that accordingly the chief jobs left to do were to measure what was sailing around in ether, his head and hands produced his interferometer which split a light wave, sending one half with the orbit of the earth and back again where it met the other half wave length that had been sent on a return trip at right angles to the orbit of the earth. If there were ether out there (unless it were being carried along by the earth as if it were an envelope of the earth), the expectation was that when the two halves of the light wave rejoined they would be “out of phase,” since one had held a course parallel to “the ether drift” and the other had crossed it at right angles and returned. The difference between the two half-light waves would indeed be small, but Michelson was sure he could measure it—and measure it he did, again and again—only to conclude reluctantly that there was no difference and that therefore there was no stationary ether “out there” and that light traveled at equal velocity in all directions.

In 1928 we only crudely knew how these negative results of the Michelson-Morley experiment opened the universe to Einstein’s theories of relativity and we had even vaguer notions of the kind of machine that left Newtonian physics lying in a heap feebly struggling to get out from under its own ruins.

I had heard, however, something about the interferometer, and, having worked ten or eleven summers in the Forest Service and logging camps, I had enough feeling for tools to make it hard for me to keep my mind solely on billiards. After Michelson would run ten or twelve billiards with a touch so delicate that the three balls could always be covered by a hat, I found myself wondering instead how he had ever made a machine so delicate its finding would be invalid if it vibrated half a wave length of light, a whole wave length of light being so small that it can’t be



Former faculty member and founding physics department chair Albert A. Michelson, the first American to win a Nobel Prize in the sciences, was an avid billiards player.

seen by our most powerful microscope. A fancy, wide-angle billiard would also take my mind off the game, because I knew just from the nature of the experiment that the machine had to turn ninety degrees without vibration (in mercury, I later found) so that any change in the pattern of the light waves could be observed. Perhaps the most American, air-conditioned question I kept asking was, “How the hell in the 1880s did he ever keep the machine in a temperature that probably couldn’t vary a tenth of a degree?”

You don’t have to have a diagram of the interferometer to realize why it was Michelson’s favorite creation or why Michelson must have felt about his interferometer something of the way Galileo felt about his telescope:

“O telescope, instrument of much knowledge, more precious than any sceptre! Is not he who holds thee in his hand made king and lord of the works of God?”

But even this poetical outpouring isn’t as moving a tribute to a machine as the factual statement about the interferometer made by Arthur Stanley Eddington, the English astronomer; it is a machine, he said, that can detect “a lag of one-tenthousand-billionth of a second in the arrival of a light wave.” ♦

INQUIRY

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PEER REVIEW

WHAT ALUMNI ARE THINKING AND DOING

ART SCENE

Betsy Hess-Behrens, PhB'44, looks at Hale Woodruff's *Sharecropper Boy* (1938), part of the 1944 Renaissance Society exhibition *New Names in American Art: Recent Contributions to Painting and Sculpture by Negro Artists*. In the exhibition brochure, Harlem Renaissance doyen Alain Locke wrote that the artists' blending of modernism and social realism was "a development to be watched for its great future promise" to American art.

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NOTES

A SELECTION OF ALUMNI WHOSE NAMES ARE IN THE NEWS

GOODENOUGH GETS NOBEL

In October **John B. Goodenough**, SM'50, PhD'52, received a Nobel Prize in Chemistry for his role in developing the lithium-ion battery, the "foundation of a wireless, fossil fuel-free society," said the Nobel Foundation. The University of Texas at Austin engineering professor shares the prize with Binghamton University's Stanley Whittingham and Meijo University's Akira Yoshino. Each contributed to the technology's evolution. For his part, Goodenough created a new cathode for the battery that increased its power and safety, eventually leading to a commercially viable product. He is the 92nd UChicago-affiliated Nobel laureate and, at 97, the oldest person to receive the honor.

SOCIAL WORK PIONEER

School of Social Service Administration founder **Sophonisba Breckinridge**, PhM 1897, PhD 1901, JD 1904, is the subject of a new biography by University of Montana historian Anya Jabour.

Sophonisba Breckinridge: Championing Women's Activism in Modern America (University of Illinois Press, 2019) describes the social work pioneer's contributions to Progressive Era reforms, New Deal policy, and the formation of the United Nations. The book discusses Breckinridge's personal and professional partnership with Edith Abbott, SSA's first dean—"one example of the long-standing contributions of LGBTQ people to American politics," Jabour wrote on the media website *The Conversation*.

ELEVATED TO CARDINAL

Michael Czerny, PhD'78, a Czech-born Canadian Jesuit priest, was appointed to the Catholic Church's College of Cardinals by Pope Francis in October. He received the pope's nomination letter in Brazil during talks with landless workers ahead of the Amazon synod, for which he was a special secretary. Long engaged in the church's social justice mission, Czerny has been at the Vatican for nearly a decade and since 2016 has helped lead the migrants and refugees section of the newly established



A VOICE FOR THE SILENT SCREEN

Jacqueline Stewart, AM'93, PhD'99, debuted in September as host of Turner Classic Movies' *Silent Sunday Nights*, the television network's weekly midnight silent film series. The *New York Times* described as historic Stewart's appointment as TCM's first black host; Stewart noted that she's also proud to be the first academic in that role on the network. In 2016 the UChicago professor of cinema and media studies cohosted two special TCM broadcasts based on *Pioneers of African-American Cinema* (Kino Lorber, 2016), a box set she cocurated. She reprises one of those films, independent black Chicago filmmaker Oscar Micheaux's *Within Our Gates* (1920), on *Silent Sunday Nights* on December 8.

Dicastery for Promoting Integral Human Development. Formerly the founding director of the African Jesuit AIDS Network, he will now serve as a papal adviser, envoy, and elector.

JUDGES' MOTIONS

In July **Rebecca R. Pallmeyer**, JD'79, was named chief judge of the US District Court for the Northern District of Illinois. Pallmeyer is the first woman to lead the country's third-largest federal court district, where she has served for nearly three decades. A former magistrate judge, she began her lifetime appointment as a district judge in 1998. Perhaps best known for presiding over former Illinois governor George Ryan's corruption trial, Pallmeyer has also helped preserve Illinois legal history as chair of the district court's historical association.

New posts on Chicago's federal court also began in July for **Mary M. Rowland**, JD'88, and **Martha Pacold**, JD'02. For Rowland, the appointment follows nearly seven years on the court as a

magistrate judge. Pacold, most recently the Treasury Department's deputy general counsel, is the court's first female Asian American district judge.

GRAIN GAINS

Agilis Partners, a Uganda-based agricultural company cofounded by **Benjamin Prinz**, AB'14, received a 2019 US Secretary of State Award for Corporate Excellence in Sustainable Operations. Started when Prinz was a UChicago student, Agilis runs its own grain and oilseed farms while partnering as a wholesaler with smallholder farmers, connecting them to markets and training them in sustainable, high-yield practices. The company aims "to transform rural communities and catalyze a more food-secure Africa," Prinz said in a statement. Citing its work to improve farmers' livelihoods, the US ambassador to Uganda has stated that the company "exemplifies the best of American entrepreneurship."

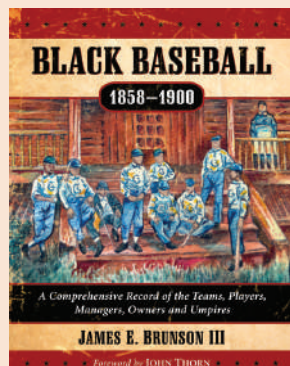
—Andrew Peart, AM'16, PhD'18

RELEASES

ALUMNI BOOKS, FILMS, AND RECORDINGS

DEGREES OF DIFFICULTY

By Julie E. Justicz, JD'88; Fomite, 2019
Civil rights attorney **Julie Justicz's** debut novel is the story of an Atlanta family overwhelmed by caring for son and brother Ben, a teenager with a severe disability who has trouble staying welcome at care facilities. Each family member finds a way to cope; Ben's mother, a Shakespeare scholar, escapes into research and starts self-medicating. Though older brother Hugo seems uniquely capable of reaching Ben, he ends up making a decision that could destroy the family.



BLACK BASEBALL, 1858-1900: A COMPREHENSIVE RECORD OF THE TEAMS, PLAYERS, MANAGERS, OWNERS, AND UMPIRES

By James E. Brunson III, AM'95, PhD'06; McFarland, 2019

A project more than 30 years in the making, baseball researcher and Northern Illinois University art historian **James E. Brunson III's** three-volume sourcebook documents the beginnings of organized black baseball and its role in late 19th-century black cultural life. Teams like the Utica Fearless, the Chicago Uniques, and the Mobile Saucy Boys had their origins in clubs formed by barbers, hotel waiters, and other workers. The game they played became more than a professional sport, Brunson suggests. It formed an integral part of America's nascent entertainment industry, with ties to popular music, theater, and visual culture.

GAME DAY

Written, directed, and coproduced by John Susman, AB'81, AM'82, MBA'94; Movie Night Media, 2019
Playwright and screenwriter **John Susman's** first feature film is a dramatic comedy about a woman in the tech industry who realizes that being great at her job will only get her so far—breaking through requires joining the company's all-male basketball team. She meets a teenager, played by rapper Romeo Miller, who teaches her the game. What they learn from each other alters their lives. Filmed in Hyde Park and elsewhere in Chicago, *Game Day* hit theaters nationwide in October.

JUDGE THY NEIGHBOR: DENUNCIATIONS IN THE SPANISH INQUISITION, ROMANOV RUSSIA, AND NAZI GERMANY

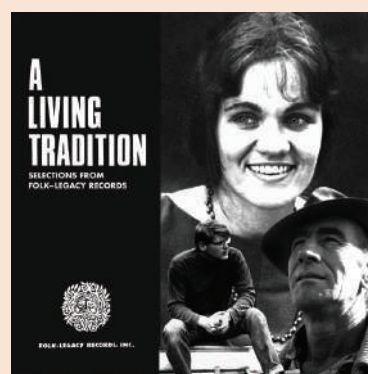
By Patrick Bergemann, AB'04; Columbia University Press, 2019

Denunciation is as old as Judas Iscariot and as modern as the US Department of Homeland Security's "If you see something, say something" campaign, argues **Patrick Bergemann**, an assistant professor of organizations and strategy at Chicago Booth. Bergemann, who has degrees in economics and sociology, sets out to understand the behavior of denouncing, known variously, he notes, as "ratting, tattling, squealing, whistle-blowing, snitching." Denunciation benefits authorities by giving them information about acts they want to punish or deter. But driving any denunciation, Bergemann finds, is what reporting another person will do for the denouncer.

SNAGGLETOOTH

Written and directed by Colin Bishopp, AM'04; End Timey Pictures, 2018
Before her mother will agree to get her the puppy she wants, Mary-Alice has to visit the dentist. His office is in a gothic-looking Victorian mansion, and their appointment is at midnight. Mary-Alice's "snaggletooth" is not the only thing that's irregular here. Filmed in

San Francisco's legendary, purportedly haunted William Westerfield House, and featuring a dentist's assistant who shares a name with the German director of the silent classic *Nosferatu*, moviemaker and clean-energy advocate **Colin Bishopp's** short film knows its antecedents and how to tell a story through atmosphere. It drew praise from critics after its screening at this year's Tribeca Film Festival.



A LIVING TRADITION: SELECTIONS FROM FOLK-LEGACY RECORDS

Original recordings coproduced by Caroline Paton, AB'56; Smithsonian Folkways Recordings, 2019

Late singer and song collector Caroline Paton cofounded Folk-Legacy Records in 1961 with her husband, Sandy, and a friend from Chicago, Lee Haggerty. Amid the folk revival, they avoided pop adaptations of folk songs and went to the sources themselves. Folk-Legacy's earliest releases were field recordings of traditional performers from the United States and the British Isles; later albums spotlighted artists who, like the Patons themselves, were learned interpreters of the old songs. This compilation from the Folk-Legacy catalog, acquired by the Smithsonian Institution shortly before Caroline died in March (see Deaths, Summer/19), features both kinds of material, including the Appalachian music of Frank Proffitt and a cut by Sandy and Caroline.

—Andrew Peart, AM'16, PhD'18

For additional alumni releases, use the link to the *Magazine's* Goodreads bookshelf at mag.uchicago.edu/alumni-books.

ALUMNI NEWS

FROM THE CLASSES, SCHOOLS, AND DIVISIONS

To protect the privacy of our alumni, we have removed the class notes from this section. If you are an alumnus of the University and would like class notes from our archives, please email uchicago-magazine@uchicago.edu.





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What's new? We are always eager to receive your news, care of the Alumni News Editor, *The University of Chicago Magazine*, 5235 South Harper Court, Chicago, IL 60615, or by email: uchicago-magazine@uchicago.edu. No engagements, please. Items may be edited for space. As news is published in the order in which it arrives, it may not appear immediately. We list news from all former undergraduates (including those with UChicago graduate degrees) by the year of their undergraduate affiliation. All former students who received only graduate degrees are listed in the advanced degrees section.



When the student-faculty ratio was three to one: Behind the cue ball in the Burton-Judson Courts basement rec room is resident head Thomas S. Hall, an assistant professor of biological sciences at the time of this 1944 photograph and the future dean of the college at Washington University in St. Louis. With him are (left to right) Burton S. Rosner, PhB'45, PhD'50, who later taught psychology at the University of Pennsylvania and the University of Oxford; John Holsen, AB'48, AM'52, now a retired World Bank economist; and Lee Wilcox, PhB'49, SM'54, who spent most of his career as a physics professor at Stony Brook University.



Claus/Nixon: Judy Molnar, SM'80, sent this photograph of a December 1977 holiday party in Broadview Hall, then a graduate student residence. "In the photo," she writes, "Dick Kroeger [SM'79, PhD'85] and I own the hands about to spill drinks on Tom Lane's [AM'78] (Nixon Santa's) head. Have no recall of whether we actually did pour the drinks or why he used the Nixon mask." The party was one of many Broadview festivities, which included *Star Trek* viewing parties in the lounge.



Jazz requiem: Doug Mitchell, AB'65 (left), died in September (see Deaths, page 92). When the UChicago Press executive acquisitions editor retired last December, he continued playing drums with his jazz band on Sunday nights at Jimmy's Woodlawn Tap. Mitchell's roots in the Chicago jazz scene ran deep. He was a member of the Joseph Jarman Quartet, shown here prior to a pair of midnight concerts the group performed with avant-garde composer John Cage at Hyde Park's Harper Theater in November 1965. "I was an aspiring Beat, or a hipster," Mitchell wrote to his UChicago Press colleague Alan Thomas 40 years later. "A touch of Lawrence Ferlinghetti, more than a touch of the young Frank O'Hara, and what one veteran of the era told me was as pure a 'Camus pout' as he's ever seen." Mitchell identified his bandmates (left to right): the late saxophonist and Association for the Advancement of Creative Musicians founding member Jarman; bassist Bob Hodge, AB'66, AM'68; and trumpeter Ellis Bishop. The program they performed with Cage was called *Imperfections in a Given Space*; the composer's main rehearsal instruction to the band was to "do as you feel."



Charting a new course: The varsity golf team went co-ed in 1974 with the addition of Sandra Kostyk, LAB'71, AB'75, PhD'85, MD'85, and Susan Missner, AB'75, MBA'83 (front row, left and right, respectively). Coached by Walter Hass (back row, left), the team also included (back row, left to right) Richard Enger, AB'75; Robert Wharen Jr., AB'75; Stephen Daniloff, AB'75; and Bruce Edward Bursten, SB'74; along with Warren Nagumo, AB'75, MBA'77 (front row, center).

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DEATHS

FACULTY AND STAFF

Mary Jean Mulvaney, former director of athletics and professor emerita of physical education, of Lincoln, NE, died September 20. She was 92. Over 24 years of service, Mulvaney transformed athletics at UChicago and was a powerful national influence in collegiate sports, emphasizing academic-athletic balance. She arrived on campus in 1966 to chair the women's physical education division. When the University consolidated men's and women's athletics in 1976, she became one of the first women to head a US university coeducational athletic department. Under her leadership, UChicago expanded women's sports offerings from two to nine and became a competitive force in the National Collegiate Athletic Association's Division III. The namesake of UChicago's Mary Jean Mulvaney Scholar-Athlete Award and a member of the UChicago Athletics Hall of Fame, she received the Founders Medal of the University Athletics Association, the University's intercollegiate conference, which she helped establish in 1986. She is survived by a sister.

Vivian Gussin Paley, PhD'47, retired Laboratory Schools teacher and an early childhood education researcher, died July 27 in Crozet, VA. She was 90. Paley was on Lab's faculty from 1971 until her retirement in 1995, teaching kindergarten, mentoring educators, and holding workshops and lectures on pedagogy. The recipient of a MacArthur Fellowship in 1989, she was known for experimental teaching methods emphasizing the roles of fantasy, storytelling, and play in children's learning. Her ideas, incorporated into a school-district curriculum for the first time in Boston, influenced early-childhood education reform nationwide. Paley's numerous books on education include *You Can't Say You Can't Play* (1993) and *A Child's Work: The Importance of Fantasy Play* (2004). She is survived by her husband, **Irving Paley**, AB'47; a son, **David A. Paley**, AB'73; three grandchildren; and three great-grandchildren.

David Bevington, the Phyllis Fay Horton Distinguished Service Professor Emeritus of English and Comparative Literature, died August 2 in Chicago. He was 88. A scholar of the English Renaissance and a leading Shakespeare expert, Bevington began teaching at UChicago in 1967 and remained a devoted classroom instructor through retirement, teaching at the University's Graham School of Continuing Liberal and Professional Studies as recently as 2018. He received the Quantrell Award for Excellence in Undergraduate Teaching and was twice a Guggenheim Fellow. Known for his studies of both the history and the staging of drama, he wrote *From "Mankind" to Marlowe: Growth of Structure in the Popular Drama of Tudor England* (1962), analyzing the medieval legacy in Tudor morality plays, and *Action*

Is Eloquence (1984), about gesture and the visual aspects of Shakespearean drama. Editor of the popular Bantam Classics and Longman editions of Shakespeare's complete works, he also coedited *The Cambridge Edition of the Works of Ben Jonson* (2012). A frequent Court Theatre collaborator, Bevington helped found the College's theater and performance studies major. He is survived by his wife, Peggy; two daughters, **Kate Bevington**, LAB'82, and **Sarah A. Bevington**, LAB'88; a son, **Stephen R. Bevington**, LAB'80; and five grandchildren. (For remembrances of Bevington, see Letters, page 9.)

Douglas Mitchell, AB'65, retired executive acquisitions editor at the University of Chicago Press, died September 1 in Chicago. He was 76. Mitchell began his publishing career at the Scott Foresman college division, acquiring textbooks in American and European history. Joining the UChicago Press in 1977, he made important acquisitions of books by the Annales school historians and works in sociology, rhetoric, and sexuality studies, including John Boswell's National Book Award-winning *Christianity, Social Tolerance, and Homosexuality: Gay People in Western Europe from the Beginning of the Christian Era to the Fourteenth Century* (1980). Mitchell's list in sexuality studies helped shape the field, earning him a Lambda Literary Award in 1998. At the 2018 meeting of the American Sociological Association, he was honored for contributing to the advancement of US sociology, work for which he also received the Society for the Study of Symbolic Interaction's George Herbert Mead Award. Building the press's jazz studies list, Mitchell was himself a jazz drummer (see Alumni News, page 78). Survivors include his wife, Christine; a daughter; a brother; and two granddaughters.

William Meadow, professor emeritus of pediatrics at UChicago Medicine, died September 14 in Chicago. He was 70. A neonatologist and a medical ethicist, Meadow joined the faculty in 1981, codirected the neonatology section for nearly a decade, and was a clinician in the neonatal intensive care unit. He also served on the faculty of UChicago's MacLean Center for Clinical Medical Ethics. The coauthor of *Neonatal Bioethics: The Moral Challenges of Medical Innovation* (2006), he helped shape the decision-making framework of physicians caring for infants with critical illnesses and congenital conditions. Meadow received the American Academy of Pediatrics' 2016 William Bartholome Award for Ethical Excellence. He is survived by his wife, **Susan Goldin-Meadow**, the Beardsley Rummler Distinguished Service Professor of Psychology, of Comparative Human Development, and in the College; a daughter, **Jacqueline G. Meadow**, LAB'07, MD'16; two sons, **Alexander Meadow**, LAB'99, and **Nathaniel Meadow**, LAB'03; a sister; and two grandchildren.

1940s

John Paul Stevens, LAB'37, AB'41, died July 16 in Fort Lauderdale, FL. He was 99. The third-longest-serving Supreme Court justice, Stevens was nominated for the post in 1975 by President Gerald R. Ford at the suggestion of former UChicago president and then attorney general Edward H. Levi, LAB'28, PhD'32, JD'35. Stevens served in the US Navy during World War II as a signals intelligence officer; his work breaking Japanese codes earned him the Bronze Star. After attending Northwestern's law school on the GI Bill, he clerked for Supreme Court justice Wiley B. Rutledge. Joining the court as a moderate Republican, Stevens would come to lead its liberal wing. He wrote influential opinions on decisions regarding the criminalization of same-sex sexual activity, the interpretation of federal statutes by the judiciary, the desecration of the US flag, and the execution of intellectually disabled prisoners. His outspoken dissent in *Bush v. Gore* rued what he saw as the case's damage to perceptions of the court's political impartiality; he lodged another major dissent in *Citizens United v. Federal Election Commission*. Stevens received the Presidential Medal of Freedom in 2012. He is survived by two daughters, nine grandchildren, and 13 great-grandchildren. (For more, see "The Prudent Jurist," page 46.)

Lois Davis Atwood, AB'44, died March 31 in Providence, RI. She was 95. Born in Providence and raised in Georgia, Atwood headed the Charleston (SC) Navy Yard's publications unit after World War II. Returning to Providence, she studied fiction writing and worked at Brown University Press, in the university's religious studies and human resource departments, and as an original committee member of the master of arts in teaching program. A longtime book reviewer for the *Providence Journal*, she edited the *Rhode Island Jewish Herald*. She is survived by her husband, Preston; two sons; and three grandchildren.

Mary (Oxley) McEachron, SB'44, died March 19 in Louisville, KY. She was 96. With a bachelor's in dietary science, McEachron interned at Chicago's Michael Reese Hospital and then worked as assistant head dietitian at Evanston Hospital. After settling in Wilmette, IL, to raise her family, she was active in the local philanthropic educational organization and the Trinity United Methodist Church. She is survived by a daughter, three sons, eight grandchildren, and seven great-grandchildren.

Peter Selz, AM'49, PhD'54, died June 21 in Albany, CA. He was 100. Selz was chair of the art department at Pomona College when he turned his UChicago dissertation into the book *German Expressionist Painting* (1957), praised for situating artworks in their social and political contexts. A year later he

became the Museum of Modern Art's curator of painting and sculpture exhibitions, organizing the provocative show *New Images of Man* (1959). As founding director of the University Art Museum and professor of art history at the University of California, Berkeley, Selz helped start the Pacific Film Archive and curated such exhibitions as *Funk* (1967), showcasing the San Francisco Bay Area's Beat-inspired artists. He is survived by his wife, Carole Schemmerling; two daughters; two stepdaughters; four grandchildren; and a great-grandchild.

1950s

Sherman Shapiro, AM'51, PhD'62, of Lafayette, CA, died June 22. He was 94. An economist and banking expert, Shapiro taught at the University of Texas at Austin and Notre Dame University before becoming professor of economics at the University of Illinois at Chicago, where he chaired the department. Formerly on staff at the US Treasury Department's Office of the Comptroller of the Currency, Shapiro later served as a senior economist at the Federal Reserve Bank of Chicago and did consulting for Chicago banks and savings and loan associations. He is survived by his wife, Ellen; two sons; and two grandchildren.

Eunice M. (Berg) Rosen, SB'54, of Highland Park, IL, died June 5. She was 88. Rosen majored in mathematics at UChicago and worked as an editor at the *Bulletin of the Atomic Scientists*. A national champion bridge player, she twice won the American Contract Bridge League's Freeman Mixed Board-a-Match competition with her husband, William A. Rosen, EX'58, and later took the Whitehead Trophy in the women's pairs contest. Her husband died on April 7 (see this page). She is survived by a daughter; three sons; two sisters, including **Donna (Berg) Gilboa**, AB'62; and eight grandchildren.

Virginia W. Beauchamp, PhD'55, died February 10 in Harwood, MD. She was 98. A literary scholar and early champion of women's studies, Beauchamp helped found what is now the American International School of Lagos before she joined the English faculty at the University of Maryland. In 1973 she became the first coordinator of the school's new women's studies program. The editor of the 1987 collection *A Private War: Letters and Diaries of Madge Preston, 1862–1867*, she received the Maryland Governor's Award for her scholarship and work promoting gender equity in academia. She is survived by a daughter, two sons, five grandchildren, and two great-grandchildren.

Stanton T. Friedman, SB'55, SM'56, died May 13 in Toronto. He was 84. After working as a nuclear physicist for General Electric, Westinghouse, and McDonnell Douglas, Friedman dedicated his career to researching unidentified flying objects, having discovered records from a US federal investigation called Project Blue Book. A leading ufologist, he brought widespread attention to what became known as the Roswell incident,

lectured and made media appearances about UFOs and purported government secrecy, and wrote or cowrote numerous books. Survivors include his wife, Marilyn; two daughters; a grandchild; and a great-grandchild.

Dale Miller Jr., PhD'55, died May 21 in Raymore, MO. He was 96. An educator, minister, and political activist, Miller was the first pastor of Disciples Church in Huntsville, AL, and was active in the civil rights movement. With a doctorate in church history from the Divinity School, he taught at Drake University for nearly four decades. His publications include *The Adult Son: A Study of the Gospel of Mark* (1974). He is survived by his wife, Betty; three daughters, including **Cristanne C. Miller**, AB'74, AM'76, PhD'80, and **Patricia Jayne Miller**, EX'72; three sons; and many grandchildren.

Don R. Yungclas, DB'55, died April 15 in Grinnell, IA. He was 92. A minister in the United Church of Christ (UCC), Yungclas served as pastor for congregations in Washington, Iowa, Nebraska, and Illinois before moving to Wichita, KS, where he led the UCC's Kansas-Oklahoma Conference for more than a decade. In 1979 he founded a church in Port Orange, FL, and later led UCC conferences in Michigan, the Dakotas, Ohio, and elsewhere. After concluding his conference ministry, he became an interim minister at his hometown church in Webster City, IA. He is survived by his wife, Pat; four daughters; a son; a sister; a brother; 10 grandchildren; and 16 great-grandchildren.

Sydel Finfer Silverman, AM'57, died March 25 in New York City. She was 85. An anthropologist and ethnographer, Silverman taught at the City University of New York's Queens College before serving as executive officer of the CUNY Graduate Center's anthropology PhD program. Known for her fieldwork in Monte Castello di Vibio, Silverman wrote *Three Bells of Civilization: The Life of an Italian Hill Town* (1975). Her dozen years as president of the Wenner-Gren Foundation for Anthropological Research inspired her book *The Beast on the Table: Conferencing with Anthropologists* (2002). She is survived by two daughters, a stepson, two sisters, a brother, five grandchildren, and two great-grandchildren.

William A. Rosen, EX'58, of Highland Park, IL, died April 7. He was 90. Rosen served as a US Army medic during the Korean War, studied at the Law School, then became a floor trader at the Chicago Board Options Exchange. A Bermuda Bowl-winning bridge player when he was 25, at the time the game's youngest world champion, he later won several national championships and was inducted into the American Contract Bridge League Hall of Fame. His wife, Eunice M. (Berg) Rosen, SB'54, died on June 5 (see this page). He is survived by a daughter, three sons, and eight grandchildren.

Mitchel J. Sweig, SB'59, SM'60, PhD'67, died August 1 in Evanston, IL. He was 79. Sweig spent most of his career at Northeastern Illinois University, where he was professor of physics. A skilled chess player, he competed

in international tournaments and appeared on television as a commentator for the famous Fischer-Spassky World Chess Championship in 1972. He is survived by his wife, Linda; two daughters; a stepdaughter; and five grandchildren.

1960s

Lula M. White, AB'60, AM'63, died September 10 in Hamden, CT. She was 80. A Freedom Rider, White was held for 40 days in Mississippi State Penitentiary in 1961, an experience she recounted to the Library of Congress's Civil Rights History Project. Returning to New Haven, CT, her hometown, she taught history at a local high school for nearly 30 years and was jailed for her role in a 1975 teachers' strike. Her activism and service earned her Quinnipiac University School of Law's Thurgood Marshall Award, the Greater New Haven NAACP's Living Legend Award, and other honors. She is survived by a sister and three brothers.

Milan J. Packovich, MD'61, died April 19 in New Philadelphia, OH. He was 83. After serving in the US Navy during the Vietnam War, Packovich established a private practice as an internal medicine physician in Weirton, WV. Later moving to Dennison, OH, he continued in private practice while serving on the Tuscarawas County Board of Health. He is survived by his wife, Lois, and two sons.

Andrew Naylor, AM'63, PhD'66, of Nashville, TN, died July 1. He was 79. Naylor was professor emeritus of philosophy at Indiana University South Bend, where he chaired the department at its inception and again for a dozen years before his retirement. An expert in epistemology, he published papers on memory and personal identity. He is survived by his wife, Marilyn, and two sons.

Joel M. Stern, MBA'64, of East Hampton, NY, died May 21. He was 77. After running Chase Financial Policy, Chase Bank's global consulting operation, Stern founded and led the advisory firm Stern Value Management. He developed the concept of economic value added, a measure of financial performance implemented by the US Postal Service, Singapore's sovereign fund, and many private companies. A columnist and commentator who wrote or cowrote numerous books on financial economics, he taught at Chicago Booth and other business schools. He also led the private equity firm Stern Solutions Capital Partners and founded Stern Learning Systems, which adapted his graduate business lectures into a digital education resource. He is survived by a son, **Erik D. Stern**, MBA'97; two sisters; and three grandchildren.

Judith Klotz Morhar, AB'65, of Napa, CA, died June 8. She was 75. Dedicated to social service, Morhar spent three years in the Peace Corps in Venezuela, where she learned Spanish and helped farmers start credit unions. After moving to the Napa Valley, she became a counselor with the Napa Council on Alcohol Problems; then, working with the state's Employment Development Department for the next 25 years,

she helped clients secure benefits and find new jobs. In retirement she volunteered as a driver, transporting senior citizens to medical appointments. She is survived by her husband, Lee; a daughter; and a brother. **Charles L. Gellert**, AB'66, of Laytonsville, MD, died December 31, 2018. He was 72. With a master's in history, Gellert worked at the National Archives and Records Administration, eventually heading the Motion Picture Branch's reference service. For his research, he received a credit in Woody Allen's film *Zelig* (1983). He also published a guide to the National Archives' motion pictures on Jewish history. He later became a systems analyst in Fannie Mae's technology department. He is survived by his wife, Susan; two children; and a brother.

Kathryn "Kay" T. Caskey, AM'67, died May 5 in Kalamazoo, MI. She was 76. A social worker in mental health and educational settings, Caskey helped create Cass County Hospice in southwest Michigan. With her partner, Laurie Young, she founded the company Laughter Works, using humor and play, especially juggling, to promote wellness. Caskey taught in Western Michigan University's integrative holistic health and wellness program and received a lifetime achievement award from the Association for Applied and Therapeutic Humor. She is survived by her partner, a stepdaughter, two sons, a brother, and three grandchildren.

Michael Lieber, AB'67, died December 23, 2018, in Jackson Heights, NY. He was 73. Trained as a cultural anthropologist, Lieber taught at Wellesley College and Boston University before his work on Balinese ritual performance deepened his interest in documentary and led him into the film business, where he worked for New Century Productions and developed projects at Disney, Paramount, TriStar, and other studios. He produced feature films including *Joe Gould's Secret* (2000) and *Flash of Genius* (2008). Survivors include his wife, Tiffanie Morrow.

Mark C. Steinhoff, AB'69, MD'73, of Boston, died July 12, 2018. He was 70. A pediatric infectious disease specialist, Steinhoff conducted vaccine studies at Christian Medical College, Vellore, in his native India. Returning to the States, he worked at the University of Michigan Medical School and then at Johns Hopkins University's schools of public health and medicine. He later directed the Global Health Center at Cincinnati Children's Hospital. In 2008 Steinhoff published the first randomized controlled study to demonstrate that an inactivated influenza vaccine during pregnancy protects women and infants. He is survived by his wife, Elizabeth Senft; three sons, including **Eirik S. Steinhoff**, AM'99, PhD'12, and **Kristoffer S. Steinhoff**, AB'01; two stepchildren; a sister; a brother; and six grandchildren.

1970s

Mark C. Patronsky, AB'70, of Sun Prairie, WI, died May 21. He was 70. During his US Army service in Germany, Patronsky photo-

graphed military life and later donated his image collection to the Wisconsin Veterans Museum. After earning a JD from the University of Wisconsin Law School, he joined the Wisconsin Legislative Council staff, specializing in natural resource matters until retiring in 2009. An all-seasons bicycle commuter, he once made local front-page news in Madison, WI, for cycling downtown in a blizzard. He is survived by his wife, Kathryn Ambler, and two brothers, including **Ross T. Patronsky**, AB'73.

Charles Cheung-Wan Leung, SM'71, PhD'77, of Fremont, CA, died March 22. He was 72. Born in Hong Kong, where he earned his undergraduate degree, Leung studied physics at UChicago and pursued a career in the technology industry, serving as president of the semiconductor company Bipolarics. A member of the Institute of Electrical and Electronics Engineers, he patented a wafer planarization technology, developed a high-speed silicon transistor, and invented a silicon microwave monolithic integrated circuit used in communications. He is survived by two daughters, a son, two sisters, and two brothers.

Carol Perkerson Foster, AM'74, died July 3 in Sidney, British Columbia. She was 69. Foster worked as a cooking instructor in the Pacific Northwest and published three cookbooks, including *365 Main-Course Salads* (1997), part of a popular HarperCollins series. She is survived by a stepson, a sister, and two step-granddaughters.

Charles J. LaGrutta, AM'77, died August 2 in Chicago. He was 73. LaGrutta earned his first master's degree, in English, and worked as a teacher before enlisting in the US Navy and serving in Guam, where he trained in Chinese linguistics. Then, with a master's in library science from UChicago, he became a librarian and training manager, first with the real estate firm Urban Investment and Development Corporation and later at the Chicago Board Options Exchange. In retirement he again took up studying Chinese language and culture. He is survived by his husband, **Stuart Miller**, MAT'72, AM'76.

Timothy J. Nevitt, AB'78, of Red Wing, MN, died suddenly August 24. He was 64. Nevitt received his doctorate in meteorology from Penn State University in 1987 and worked as a staff scientist at 3M in the transportation and electronics business group, coauthoring more than 50 patents and receiving the Circle of Technical Excellence award. Active in the Red Wing community, he coached soccer and hockey, taught in an extracurricular math program, and taught religious education at a local Catholic school. He is survived by his wife, Susan; two sons; a sister; and two brothers, including **Michael Nevitt**, AB'73, AM'78.

Kamyar Jabbari, MBA'79, died of a heart attack April 8 in Northbrook, IL. He was 64. Working at First National Bank of Chicago, Jabbari served as agent, underwriter, arranger, and financial adviser for large-scale utility, oil and gas, and infrastructure projects around the world. He then launched an

academic career as a clinical professor of finance at Illinois Institute of Technology's Stuart School of Business, pursuing his JD at IIT's Chicago-Kent College of Law. Most recently he was a financial representative at the Guardian Life Insurance Company of America. He is survived by a daughter.

1980s

Jeffrey F. Osanka, AB'82, of Alexandria, VA, died on December 26, 2018. He was 58. With degrees in public policy and communications, Osanka taught at the University of Oregon and Lane Community College. After working for the Oregon state legislature and serving on the board of a major public utility, he was appointed to the Department of Health and Human Services during the George W. Bush administration. Later a consultant with the Federal Labor Relations Authority, he also taught at Georgetown and George Washington Universities. He is survived by his mother; two sisters, including **Wendy L. Jones**, AB'86; and two brothers.

Andrew K. Miller, AB'83, of Budd Lake, NJ, died of a heart attack July 17. He was 58. With an MBA from Duke University's Fuqua School of Business, Miller was president of the management consulting firm Milluk. Active in community service, he belonged to the Knights of Columbus and volunteered as a UChicago alumni interviewer for local high schoolers. He is survived by his wife, Mei Hong Yan; two daughters, **Elizabeth R. Miller**, AB'16, and **Olivia A. Miller**, Class of 2022; two sons; his mother; and three brothers.

1990s

Stefan Johannes Krieger, AM'92, PhD'99, of Oakton, VA, died of stomach cancer July 8. He was 52. A theoretical macroeconomist, Krieger taught at Yale University before becoming a hedge fund portfolio manager. He worked most recently at Freddie Mac, developing a house price index that was critical to the corporation's risk modeling after the 2008 housing crisis. He is survived by his wife, Eliza Morss; three daughters; his parents; a sister; and a brother.

Paul M. Gaziano, AM'97, of Minneapolis, died June 23. He was 47. As a Duke University doctoral student, Gaziano studied Italian Renaissance history in Florence and Rome. Pursuing a career outside the academy, he did work for websites, most recently as a research assistant and partner at the medical education company obimages.net. He is survived by his parents and a brother, **Emanuel P. Gaziano Jr.**, AB'92, AM'93.

2000s

Jason A. Yost, AM'02, PhD'11, died of brain cancer June 28 in Kalamazoo, MI. He was 42. A visiting assistant professor of English at Kalamazoo College, Yost taught classes in Renaissance literature and in writing. He is survived by his wife, **Paramita Bhabli Sinha**, AM'02, PhD'06; a son; and his parents.

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THE UCHICAGOAN
Ana Marie Cox

AB'94

*Questions for the political
commentator, podcaster, and 2014
Institute of Politics fellow.*

**What surprising job have you
had in the past?**

During a dry spell between dot-com booms, I was an assistant to a private investigator. I've also been a security guard and done phone polling for Gallup.

**What would you want to be
doing if not your current
profession?**

If we're in the realm of fantasy, where my alternate profession is also guaranteed to be successful: interior design.

**What do you love that everyone
else hates?**

Mass-market chain-store pizza: Domino's, Pizza Hut, etc. It's comfort food from a childhood spent in college towns.

**What person, alive or dead,
would you want to write your
life story?**

Curtis Sittenfeld.

What's your least useful talent?

Extraordinarily good handwriting.

**What did you learn at UChicago
that still benefits you today?**

It may be a cliché, but UChicago taught me how to think and drilled into me the value of understanding why things are the way they are over knowing specific bits of data. As a journalist, knowing how to find information is a much more important skill than mastering any particular field, and I learned that at UChicago.

**What's your most vivid
UChicago memory?**

Sitting in Harper Library on election night in 1992, studying American Civ while also listening (very quietly) to my Walkman (!) when **Carol Moseley Braun** [JD'72] became the first black woman elected to the Senate. I had this quiet sense of the whole flow of history and felt exhilarated by the possibilities.



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