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MAGAZINE



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PAGE
30



Tracy K. Smith

NATHAN PERKEL

A NOTE ABOUT OUR COVER The caduceus has been widely used as a symbol of medicine in the United States ever since the US Army Medical Corps adopted it in 1902. However, the rod of Asclepius, a staff with one snake and no wings, is the classical symbol of healing, and the caduceus is symbolic of commerce and negotiation. Given the intersection between the value of data and society's need to create best practices around its use, especially in the medical field, the editors thought the use of the caduceus offered an interesting subtext.

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SCRABBLE SCRIBBLE

I read Paul Hond's article "Letter Head" in the Winter 2017-18 issue with great interest. My wife and I have played Scrabble regularly for the past sixty years. We stick pretty much to our current vocabularies. We do rely on words with those high-value letters — J, Q, X, Z. In a recent game, we both scored a little over four hundred. We slept well that night.

Roland Kuniholm '51CC
Lititz, PA

As someone who occasionally plays Scrabble with his children and teenage grandchildren, I enjoyed reading about Mack Meller's expertise in this enduring game. But I think you shortchanged Meller with regard to his opening word against Debbie Stegman. As even a casual Scrabble player knows, the J in JOLTY would have fallen on a double-letter-score box, increasing the value of that letter from eight to sixteen points. The double word score that always applies

to the opening word would then have earned forty-six points for JOLTY, not thirty as stated. In addition, your list of highest-scoring two-letter words omitted QI, worth eleven points. These observations notwithstanding, I look forward to reading a follow-up article on Meller's further accomplishments.

Alan H. Seplowitz
'68CC, '72PS
Scarsdale, NY

We got the points right but the sequence wrong: JOLTY was Meller's second play. We regret the error. — Ed.

MEMORIES OF 1968

I read with interest Phillip Lopate's assessment of his experience during the Columbia protests of the 1960s, having experienced the sixties differently myself ("Confessions of a Reluctant Revolutionary," Winter 2017-18). No protest movement is perfect, but that is the nature of protest. Some participants will have an understanding of the varied and competing interests involved, while

others will tag along hoping the cause is right.

Since I had sons of protest age during that time, and since I myself was an active member of an antiwar group, I could only admire and support these young people — especially their efforts to promote voting rights in the South, at great risk to themselves, which led to important changes. I supported my sons' work in Students for a Democratic Society and admired the courage demonstrated by many in their effort to introduce political relevance to the universities.

Now in my ninety-second year, I enjoy reading *Columbia Magazine* since it helps to keep *me* relevant.

Priscilla Ciccariello '81LS
Montauk, NY

During my first year at Columbia Law School, I tried to come to terms with the takeover of the campus by students protesting the Vietnam War. The literature passed out at the many information tables on Morningside Heights attempted to explain

FEEDBACK



Great issue! Loved the articles. Thank you for the hard work of producing a stellar new edition.

Natasha Kern '71GS
White Salmon, WA

This is a wonderful issue.

Janet Healy '78TC
Syosset, NY

Columbia Magazine has transformed over the past year or so, very positively. Keep up the good work.

David Carrow '71GS
Millville, NJ

Fans storm Baker Field in 1988.



A WORTHY GOAL

Your article on the football team's recent wins ("The Thrill of Victory," College Walk, Winter 2017–18) notes that "in 1988, enthusiasts tore down the goalposts to celebrate the end of a forty-four-game losing streak." I was among those happy few. In our well-earned delirium, we did indeed storm the field with the intent of tearing down the goalposts. However, if my memory is correct, the posts proved indestructible: heavy steel pipes cemented into the ground. We soon abandoned our pursuit of this venerable, and certainly appropriate, tradition.

James Mummary '65CC
Nellysford, VA

The photo at left seems to suggest that both memories and goalposts can be shaky. The day after the game, the New York Times reported that Columbia supporters had "brought down the goal posts and carried them around the stadium." — Ed.

the rationale for such action, though it lumped in the so-called land grab for the construction of the gymnasium in Morningside Park. I somewhat reluctantly agreed with the antiwar sentiment, but for a rationale of my own. Having briefly fought in the Hungarian Revolution of 1956, during which we begged the West for help without success, I thought, why should Vietnam get more than we did?

But what still irks me after these many years is the untutored parroting by some students of talking points of communism with very little familiarity with its institutional evolution in Hungary and other countries. Some arguments were erudite, but most were along the lines of comparing the New York City police to the KGB. Having been summoned to the AVO — the Hungarian equivalent of the KGB — when I was ten, I was well aware of how ludicrous the comparison

was, and I could never forgive Students for a Democratic Society for so drastically slowing down my Americanization process and preventing me from putting the maximum distance between myself and my Stalinist birthplace, where thirty thousand people, many of them students, lost their lives.

George Vizvary '72LAW
Palo Alto, CA

I am a Vietnam veteran who attended Columbia Business School in 1972–73. I am also the parent of two children

who subsequently graduated from the business school. I want to register my — and I believe other veterans' — lack of enthusiasm for the Columbia student radicals' antiwar organizations and activities. I served in the US Navy for many reasons, including pride in national service during a difficult period of US history. Following Vietnam combat duty, I attended Columbia Business School to get on with my life. I am particularly resentful,

under these circumstances, to have been deprived of my education when Columbia student radicals periodically shut down the campus.

W. B. Shepard '73BUS
Naples, FL

It saddens me to see in your pages Phillip Lopate's

KEY TO ABBREVIATIONS

CODE	SCHOOL	CODE	SCHOOL
BC	Barnard College	NRS	School of Nursing
BUS	Graduate School of Business	OPT	School of Optometry
CC	Columbia College	PH	Mailman School of Public Health
DM	College of Dental Medicine	PHRM	School of Pharmaceutical Sciences
GS	School of General Studies	PS	Vagelos College of Physicians and Surgeons
GSAPP	Graduate School of Architecture, Planning, and Preservation	SEAS	Fu Foundation School of Engineering and Applied Science
GSAS	Graduate School of Arts and Sciences (Honorary degree)	SIPA	School of International and Public Affairs
HON		SOA	School of the Arts
JRN	Graduate School of Journalism	SPS	School of Professional Studies
JTS	Jewish Theological Seminary	SW	School of Social Work
KC	King's College	TC	Teachers College
LAW	School of Law	UTS	Union Theological Seminary
LS	School of Library Service		

apology for once having been young and bright. Please tell him not to worry; he was on the right side.

The Columbia whose grad school I attended in 1960–61 was a big, famous school that had been coasting on its reputation for a decade or two (or three). Then came 1968: loud voices, signs, demonstrations. Lazy buttocks were kicked, and the gentleman president of the school was told that unless your name was Eisenhower, you were expected to have some intellectual dimension and to take an interest in the school. Radical ideas on the Heights!

Make no mistake, Columbia became a much better place through the efforts of Mark Rudd and other “free radicals.” Neither Lopate nor anybody else should feel too encrusted by embarrassment to admit it.

Calvin K. Towle '61GSAS
Walpole, MA

Phillip Lopate's article is spot-on in many ways, yet it is a view from the outside looking in and misses some key points. The administration was so intent on running a university system that it lost sight of its primary mission: to educate and enlighten its students. It failed to provide a healthy and caring environment for those under its stewardship. It was as stony cold as Low Library.

And it is wrong to say that the students felt immortal and cared nothing for their own safety. I was there the night of the police action at Avery and Mathematics. Most of the occupiers had exited

the buildings to surrender to the police. Then a faculty group, arm in arm, formed a line between the police and the students to prevent any violence. Suddenly, without provocation and without a word, the police attacked, clubs swinging.

We were not fearless; we were naive — naive to believe our rights would be respected. Authority will do what it has to if it is threatened. I was badly beaten that night, and then, days later, the police threatened me with another beating and false arrest if I refused to sign a bogus statement. Weeks later they threatened my father and brother with false accusations. They played for keeps, and we were innocents.

Rob Smith '71CC
Fort Lauderdale, FL

In the spring of 1968, my curiosity drew me to a meeting of the revolutionaries at McMillin (now Miller) Theatre. On our way in, students received armbands identifying with the impending strike. The hall was packed to the gills with 1,500 students, both at floor level and in the galleries, and down on the stage the professors — our moral mentors — were preaching fire and brimstone about the University and its wicked ways.

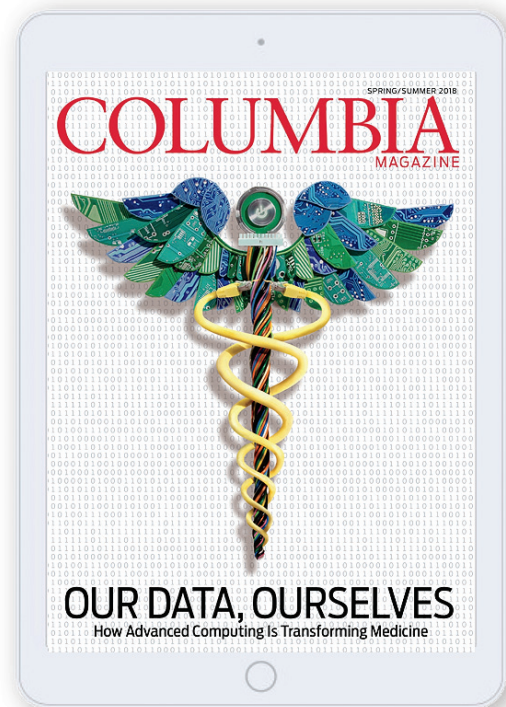
At each climax the crowd rose to its feet as one, and all the assembled students and faculty thrust their arms forward rhythmically, fists clenched, shouting, “Strike! Strike! Strike!”

As I looked about me at the outstretched arms and listened to the raucous



Notice To Our International Readers

Effective June 1, alumni who live outside the United States will continue to receive print copies of the summer and winter issues, while the spring and fall issues will be accessible online and through our free mobile app at magazine.columbia.edu/app.



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shouts of this mass of people — my friends and colleagues — entranced by a messianic hysteria, I quietly removed my armband and slunk out of the hall, cured forever, having learned a lesson that an entire university education and a lifetime of reading about the incomprehensible rise of Nazism could never have taught me.

Harvey Bordowitz '69GS
Avichayil, Israel

FIGURES OF SPEECH

Those who oppose provocative speech on campus because it “serv[es] no valid academic purpose” should think twice (“Speech Therapy,” College Walk, Winter 2017–18). First, speech should not have to serve a purpose. Second, any invited speakers *are* serving someone’s purpose, or else they wouldn’t have been invited. No one should assume they can be objective arbiters of what serves a purpose. Besides, the only speech that needs to be protected is unpopular speech.

College campuses must lead, not follow. As laboratories for ideas, they are where bad ideas should go to die, but they should die of starvation, not execution. Suppressing bad ideas doesn’t kill them; it makes martyrs out of them. Let history be our guide, and let’s err on the side of free speech. The alternative is worse.

Rahul Deshmukh '13SPS
Brooklyn, NY

Columbia, like other educational institutions, will indeed have to draw lines regarding speech on campus.

That will mean considering whether it makes more sense to have hate speech and its ilk out in the open so its pernicious nature can be seen and addressed. It will also mean dealing firmly with those who would take it into their own hands to shut down speech to which they object, as some tried to do to the self-proclaimed “alt-right” leader Richard Spencer when he spoke last year at the University of Florida.

It is well said that the answer to disagreeable speech is not suppression but more speech.

Donald Nawi '61LAW
Scarsdale, NY

Sixty-five years ago, when I was a General Studies student, Wisconsin senator Joseph McCarthy — as provocative and ubiquitous in 1953 as President Trump is today — was making headlines warning that the words of writers and thinkers he judged as subversive were dragging the nation into communism.

In a European poetry class, Professor Babette Deutsch began reading lines from Pushkin when a young student leaped to his feet and shouted that he would report her to University officials for quoting “a Red.” This was not an idle threat for Deutsch, a poet whose early work celebrated the Russian Revolution. Her husband, born in Ukraine, was in the midst of translating Boris Pasternak’s novel *Dr. Zhivago*.

Suddenly, without any coordination, about six of us, all veterans of the Korean

War, stood and called upon Deutsch to continue reading. We said that after Pushkin, we were looking forward to discussing Lermontov and, yes, Pasternak.

The young man who attempted to stop the reading looked around at the former paratroopers, pilots, sailors, and Marines staring at him and sat down as Professor Deutsch returned to Pushkin.

None of us who stood in that classroom would ever say we fought for free speech. You fought for the men in your platoon, on your plane or ship. But I’m very proud of the twenty-two-year-old who, in that long-ago classroom, understood that free speech was worth standing up for.

Robert W. Goldfarb '54GS
Boca Raton, FL

BA(N)D BEHAVIOR

It is with great pride that I have watched the Columbia football team mature and play with enthusiasm, class, and a winning attitude (“The Thrill of Victory,” College Walk, Winter 2017–18). Over the years I have noted the quirkiness of the band that

“plays” at the football games. I never particularly

**QUESTIONS?
COMMENTS?**

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Letters may be edited for brevity and clarity.

found them humorous, but they seemed to pair with the futility of the football team. With the push over the last several years for athletic excellence, I believe it is time for the accompanying band to mature as well.

I had the pleasure of watching Columbia beat Cornell in Ithaca on Saturday, November 11, and I was absolutely mortified at the performance of the Columbia band. I was among other alumni, parents, and coaches’ spouses who felt the same. Wrapping oneself in bedsheets and toilet paper, banging on toilet seats, and running around like immature children is not in keeping with the highest traditions of Columbia University.

John Gadjó '86SEAS
Fair Haven, NY

LEAGUE OF THEIR OWN

It was exciting to see the big news about the women’s cross-country team winning the Ivy heptagonal championships, their first team title since 2005 (“Women’s cross-country team claims Ivy title,” Bulletin, Winter 2017–18). What a disappointment not to get any further details about our female athletes’ achievements, but rather to read about the men’s team placing second and a specific male athlete’s accomplishments instead. Your editors may want to consider the subtly sexist message sent when the achievements of women at Columbia are not treated as standalone news in your magazine.

Katherine Anderson '99PS
Brooklyn, NY

“My mom has made so many sacrifices for my education. I still get emotional when I remember telling her that not only had I been accepted, but also that I’d received a scholarship that meant I could say yes to Columbia, my dream school.”



Indira Martinez

Columbia School of Social Work,
Class of 2019



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COLLEGE WALK

NOTES
FROM 116TH
STREET AND
BEYOND



FOOD FIGHT

Tablesides at the Battle of the Dining Halls

The lights are dimmed, and the crowd sits in hushed anticipation. On a large stage, a dozen chefs dressed in paper toques stand grouped according to their red, baby blue, and navy T-shirts. One member of each group holds a tray covered by a shiny silver dome. All eyes are focused on the table in front of them, where Marcus Samuelsson, an Ethiopian-born, Swedish-raised celebrity

chef, waits to judge their interpretations of global street food.

One of the chefs steps forward and presents her dish: a Dominican-inspired brisket slider with pickled red onions, arugula, and cilantro-jalapeño *crema*. Instead of bread, the beef is sandwiched between two *tostones*, or bright-yellow fried plantains. She steps back, and Samuelsson takes a bite.

If you've ever watched a cooking contest on reality

TV, you know this moment. The judge chews thoughtfully and makes notes on a scorecard. He might take another bite; he might whisper to another judge. The tension builds. And finally he speaks.

"This dish is clearly all about texture, with the crispy *tostones* complementing the slow-braised meat," says Samuelsson. "*Tostones* can be difficult to do well, but these are executed perfectly. The dish is well-balanced and flavorful. Well done, chef."

The chef exhales, and the crowd erupts in applause.

It's a routine that Samuelsson knows well. In addition to working as a chef and restaurateur — he is the owner of Harlem's Red Rooster and Streetbird, as well as nine other restaurants worldwide — Samuelsson is a regular judge on the Food Network's *Chopped* and *Iron Chef America*. But today at Columbia he is evaluating an unusual group of contestants: the chefs at the University's three residential dining halls.

This is the inaugural Battle of the Dining Halls — a Food Network-style competition held earlier this academic year in the auditorium at Lerner Hall. Vicki Dunn, the executive director of Columbia Dining, says that the rivalry between Ferris Booth Commons, John Jay, and JJ's Place is not new.

"It started three or four years ago at a meeting with our student advisory committee," Dunn says. "The kids were getting fired up about their favorite dining halls. So we thought,

let's try to encourage that friendly competition."

Their first idea was to give away T-shirts advertising hashtags that students could use to promote #TeamJohnJay, #FerrisForever, and #JJsFam on social media. At the same time, Columbia was also bringing in celebrity chefs for "meet and eat" events with students. Using cookbooks written by the guest chef, Columbia Dining would recreate some of the chef's famous dishes to serve to students.

Dunn was pleasantly surprised by the enthusiastic feedback from the guest chefs — Robert Irvine, the notoriously cranky host of several Food Network shows, lavishly praised the dining staff's rendition of one of his dishes — but when it came time to pick a judge for the Battle of the Dining Halls, they knew it had to be Samuelsson.

"We've had a relationship with Marcus Samuelsson for several years. He's a fixture in the neighborhood. We actually share vendors with him and sometimes even buy cornbread from his restaurant," Dunn says. "Plus, the students love him."

That much is clear as the competition reaches its climax. Samuelsson works the audience, slinging Red Rooster hats and jumping off the stage to pose for selfies with students. But he also takes his job seriously, carefully tasting each entry — the brisket slider from JJ's Place, a Caribbean jerk-chicken pita sandwich from John Jay, and a pork-belly pho gyro from Ferris.

"I'm always happy to do events in the community," Samuelsson says between bites of gyro. "Also — no lie — this is good food. Columbia should be proud of what they're doing here."

When it comes time for the formal evaluations, Samuelsson is joined onstage by a panel of five students, who were selected by video application to serve as his co-judges. Together, they'll each take another taste of the entrées, confer, and agree on a winner.

Before the grand prize, Samuelsson announces the audience-choice award (everyone at the event has had the opportunity to vote for this honor via text message). It's JJ's Place, by a landslide. The crowd in front of the JJ's booth cheers, hoping that it's a harbinger of the grand prize, and the other teams fidget nervously.

Everyone looks to Samuelsson. He consults with one of the student judges one last time, and she confirms it: the winner is JJ's Place.

On stage, the spotlight narrows on the crew from JJ's, who whoop and holler and pat each other on the back. Christina Appollonio, the chef and general manager, steps forward and accepts the sort of ornate championship belt more associated with boxing gloves than oven mitts.

"Respect!" yells someone from John Jay, as their team shuffles off the stage and starts packing up. "But don't worry. We'll get you next year."

— Rebecca Shapiro

THE SHORT LIST

EXPLORE Share science with the kids at the Columbia Alumni Association's **Family STEM Day**, featuring hands-on science activities and a talk by Columbia astronomer David Kipping. June 10 at Dodge Fitness Center. Register online at caafamilystemday2018.eventbrite.com

LISTEN The **Harlem Chamber Players** close out their tenth-anniversary season with a gala concert at Miller Theatre, with performances of excerpts from opera classics, including Bizet's *Carmen* and Mozart's *Le Nozze di Figaro*. June 1 at 7 p.m. harlemchamberplayers.org



A video still from *Water and Dreams*, 2014, by Caribbean artist David Gumbs.

SEE The Wallach Gallery presents **Relational Undercurrents**, a major survey of twenty-first-century Caribbean art. Curated by Tatiana Flores '95CC, '03GSAS. June 1–September 23. wallach.columbia.edu/exhibitions

VISIT The **Rare Book and Manuscript Library** in Butler Library presents two exhibitions: "1968: The Global Revolutions," on view until June 4, relates the Columbia campus protests to political upheaval worldwide, and "Yiddish at Columbia," open until June 15, showcases Yiddish memorabilia from the University's archives. library.columbia.edu/locations/rbml.html

REUNITE Graduated in a year that ends in a 3 or an 8? Alumni from select schools are invited to attend a reunion and walk down memory lane with classmates. Visit your school's website for dates and activities.

WHO'S AFRAID OF THE BIG BAD NEURON?

A Presidential Scholar draws science into friendlier territory

Matteo Farinella was torn. Growing up in Italy, he was crazy for science. He also loved to draw, filling sketchbooks with autobiographical comics in the manner of his favorite graphic novelists, like Art Spiegelman, Daniel Clowes, and Chris Ware.

But in high school, Farinella had to choose: science or art?

"A false dichotomy," he says.

Farinella chose science, earning his PhD in neuroscience at University College London in 2013. But he never stopped drawing. One day, a research fellow in his lab, Hana Roš, made

a suggestion: why not create a comic about neuroscience?

Farinella was skeptical. Although graphic novels like *Maus* and *Persepolis* had taken on weighty topics of history and politics, most people associated comics with kids' stuff. Certainly a lot of scientists did, Farinella felt. But Roš pushed him, and the two began collaborating on a book, *Neurocomic* — a kind of guided tour of the brain for the layperson.

Published in 2013, *Neurocomic's* enthusiastic reception affirmed Farinella's belief that storytelling involving human protagonists who find themselves flung into the surreal

recesses of the brain would be more alluring than simply a textbook done in comic form. "When you apply narrative structure," says Farinella, who is thirty-three and has dark, wavy hair and a six-day beard, "the information is much easier to remember, more vivid, more interesting, more engaging."

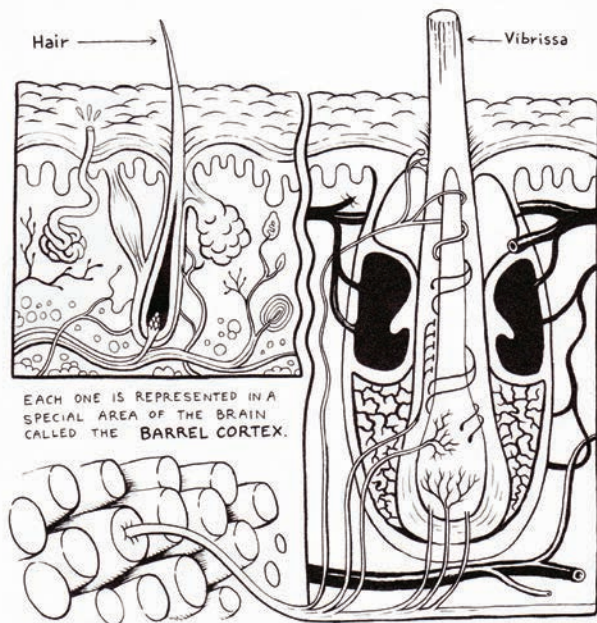
Farinella and his wife, Pamela, a native New Yorker, moved to the city in 2015, and Farinella began looking for ways to pursue his dual interests. He heard about a three-year research program at Columbia called Presidential Scholars in Society and Neuroscience, dedicated to

studies in mind, brain, and behavior. Intrigued by the program's cross-disciplinary approach — the postdoctoral scholars and their faculty mentors come not only from the natural sciences but also from the social sciences, the arts, and the humanities — Farinella wrote "the proposal of my dreams," he says. He included excerpts from *Neurocomic*.

Farinella was one of three postdoctoral applicants selected for the 2016 class, where he joined an Israeli neuroscientist and an MIT-trained historian and filmmaker. His research examines the effectiveness of comics in explaining science.

From
The
Senses

HUMAN HAIR IS QUITE RUDIMENTARY COMPARED TO THE SPECIALIZED HAIR OF MOST MAMMALS, CALLED **VIBRISSAE**. THEY RECEIVE MUCH MORE INNERVATION, ARE MORE MOBILE AND CAN DISTINGUISH MUCH FINER DETAILS IN TEXTURE.



THAT'S A VERY GOOD QUESTION. NO ONE REALLY KNOWS FOR SURE. THERE ARE MANY DIFFERENT THEORIES, BUT THE MOST FANTASTIC ONE CLAIMS THAT DURING EVOLUTION HUMANS WENT THROUGH A SEMI-AQUATIC PHASE AND LOST FUR TO DECREASE FRICTION WITH WATER.



SEE NOTES.

“For communication, science needs different tools,” he says. “There’s a lot of good science writing, but most of it is aimed at an audience that’s already interested in science. Many people think science is too complex, and they shy away. But no one is scared of comics.”

Working with faculty advisers Marguerite Holloway ’88JRN, the director of the School of Journalism’s science and environmental journalism program, and Barbara Tversky, a professor of cognitive psychology at Teachers College, Farinella is designing experiments to test readers’ responses to scientific information presented in different formats: articles and comics. “I think comics can change attitudes about science,” he says, “and as a scientist I’d like some evidence to back it up.”

In *The Senses* (see excerpt at left), which was published last year, the reader takes an Alice-like trip through the neuronal wonderland of the skin, eyes, ears, nose, and tongue, meeting talking proteins and receptors as well as pioneering scientists. No one will confuse it with the *Journal of Neuroscience*, but with such intricate material, it’s not child’s play, either.

“For me, it doesn’t matter if you finish my books and don’t remember the science,” Farinella says. “But if you come away thinking, ‘Science is fun. I want to read more about science,’ then maybe the next time you see a *New York Times* piece about the brain, you won’t just skip it.”

— Paul Hond

THE BOOK OF NOT FORGETTING

Journalist Masha Gessen on memory and Stalin’s Gulag



Revered Russians on a poster in central Moscow: Czar Nicholas II, Soviet secret-police founder Felix Dzerzhinsky, and Stalin.

“I wanted to do a book about forgetting,” Masha Gessen said recently during a talk in Pulitzer Hall. Gessen, a *New Yorker* staff writer, was recounting a meeting she’d had two years ago with Irina Flige, an activist in St. Petersburg working to raise awareness of the suppressed history of Soviet state terror, especially Joseph Stalin’s forced-labor camps. From the early 1930s to 1953, millions of people, many accused of disloyalty to the state, died in the Gulags, sometimes from bullets, but usually from disease, starvation, hypothermia, and exhaustion.

Gessen found that many Russians had lost their taste for introspection.

Flige agreed to speak with Gessen, but she did not accept the premise of a book about forgetting. Forgetting presupposes remembering, Flige explained. And because Russia never fully confronted, historically or legally, the realities of Soviet terror, there was no separation between past and present. Without such a break, there could be no remembering, and thus no forgetting.

That exchange gave Gessen a title for her book *Never Remember: Searching for Stalin’s Gulags in Putin’s Russia*. Featuring essays by Gessen and photographs by Misha Friedman, it is the fourteenth book published by Columbia Global Reports, an imprint devoted to in-depth works of journalism on topics often neglected by budget-squeezed American news outlets.

In Pulitzer Hall, Gessen, who emigrated from Russia to the US with her parents in 1981, sat between Friedman and Columbia journalism dean emeritus Nicholas Lemann, director of Columbia Global Reports. Behind them, on a screen, floated Friedman’s haunting black-and-white panoramas of abandoned camps: watchtowers, gloomy forests, wooden barracks, barbed wire, overgrown fields marked with crosses.

In 2016, Gessen and Friedman traveled to Gulag sites (the word “Gulag” is an acronym for the government agency that ran the camp system), starting with places that Gessen had visited twenty years before, when it seemed that burgeoning memorialization efforts would lead to a meaningful reckoning with the past. But Gessen found that many Russians had lost their taste for introspection. She attributed this to a

COLLEGE WALK

kind of “memory fatigue,” a result of President Vladimir Putin’s stoking of nostalgia for past imperial glories and his ambiguous stance toward Stalin — what Gessen calls Putin’s “desire to turn memory to mush.”

Some in the audience objected to Gessen’s critique of the Russian state. One self-identified Soviet-born man accused Gessen of peddling “hysteria” and “half-truths” to advance an “extreme anti-Russian agenda.” He said that Russians would never view Gessen and Friedman, who are Jewish, as Russians (“I’m a Jew,” he added); that Russians see the Gulag system as having been set up by Jews; and that Gessen’s “propaganda” was not “conducive to any kind of political diplomacy.” Gessen declined to respond.

Afterward, while attendees lined up to get their books signed, a Russian woman took issue with Gessen’s assertion that public debate in Russia has been “destroyed.” She said this portrait of her country was “unfair” and “painful,” and that if free speech was dead anywhere, it was dead in New York City.

These disputes underscored the conundrum of historical memory that Gessen presented at the outset: the domestic nature of Stalinist terror, and how it pitted Russians against Russians. That makes it impossible to tell stories, said Gessen, “because how do you tell a story about how we did this to ourselves?”

— Paul Hond



Earlier this year, Ruth Bader Ginsburg '59LAW, '94HON held court at the first Columbia University women’s conference, a three-day gathering where Columbia alumnae celebrated, networked, and honed their leadership skills. The name of the conference, “She Opened the Door,” honored Winifred Edgerton Merrill 1886GSAS, the first woman to receive a Columbia degree.

Justice Ginsburg, the first female full professor at Columbia’s School of Law and the second woman to be appointed to the US Supreme Court, was the keynote speaker. Known for her women’s-rights advocacy, uncompromising dissents, and lace jabots, Ginsburg talked with CNN anchor Poppy Harlow '05CC about life on and off the bench, handing down some choice opinions.

ON EQUAL PAY

“I was the law school’s representative on the University Senate. [There] was a commission on the status of women, and the first thing we wanted was the pay figures. The University was very reluctant to come forward. But we wanted it just to ensure that the women were getting the same pay for the same work.”

ON SOCIAL PROGRESS

“When I talk about my mother, I sometimes ask the question, ‘What is the difference between a bookkeeper in the Garment District and a Supreme Court justice?’ [The answer:] One generation.”

ON ARGUING HER FIRST CASE BEFORE THE SUPREME COURT

“I was terribly nervous; I didn’t dare eat anything for lunch. But then I looked up at that bench: the nine most important judges in the United States. I had a captive audience. They had no place to go. They had to listen to me. Then, suddenly, instead of feeling nervous and inadequate, a great feeling of power came over me.”

ON CONQUERING INSECURITY

“My first day in law school, there was someone in the class who volunteered to answer the professor’s question. He was brilliant. I came home at the end of the day and said to my husband, ‘If they’re all that smart, I’ll never make it in this place.’ Then I decided that this person would be my model, that I would speak in class as often as he did. This brilliant person was Tony Lewis, who among other things reported on the Supreme Court for the *New York Times*.”

ON THE COURTEOUS COURT

“Although the press tends to play up the 5–4 divisions, we are unanimous much more often than we divide 5–4. There is a collegial spirit that prevails; the Supreme Court is more collegial than any other place I’ve ever worked.”



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from code to figure

By David J. Craig \ Portraits by Jörg Meyer

Armed with enormous amounts of **clinical data**, teams of computer scientists, statisticians, and physicians are **rewriting the rules of medical research**

The deluge is upon us.

We are living in the age of big data, and with every link we click, every message we send, and every movement we make, we generate torrents of information.

In the past two years, the world has produced more than 90 percent of all the digital data that has ever been created. New technologies churn out an estimated 2.5 quintillion bytes per day. Data pours in from social media and cell phones, weather satellites and space telescopes, digital cameras and video feeds, medical records and library collections. Technologies monitor the number of steps we walk each day, the structural integrity of dams and bridges, and the barely perceptible tremors that indicate a person is developing Parkinson's disease. These are the building blocks of our knowledge economy.

This tsunami of information is also providing opportunities to study the world in entirely new ways. Nowhere is this more evident than in medicine. Today, breakthroughs are being made not just in labs but on laptops, as biomedical researchers trained in mathematics, computer science, and statistics use powerful new analytic tools to glean insights from enormous data sets and help doctors prevent, treat, and cure disease.

"The medical field is going through a major period of transformation, and many of the changes are driven by information

technology," says George Hripacsak '85PS, '00PH, a physician who chairs the Department of Biomedical Informatics at Columbia University Irving Medical Center (CUIMC). "Diagnostic techniques like genomic screening and high-resolution imaging are generating more raw data than we've ever handled before. At the same time, researchers are increasingly looking outside the confines of their own laboratories and clinics for data, because they recognize that by analyzing the huge streams of digital information now available online they can make discoveries that were never possible before."

To date, the most dramatic achievements of data science in medicine have been in the realm of genomics. Physicians at many leading health-care organizations and medical schools, including Columbia's, now routinely analyze the DNA of their patients, parsing the millions of chemical units that make each one of us unique, in order to more precisely diagnose illness. This has enabled physicians to craft personalized treatments for many forms of cancer, as well as for certain cardiovascular, neurological, pulmonary, and ophthalmological disorders.

But the use of data science in medicine extends far beyond genomics. Today, researchers at CUIMC are using the power of data to identify previously unrecognized drug side effects; they

are predicting outbreaks of infectious diseases by monitoring Google search queries and social-media activity; and they are developing novel cancer treatments by using predictive analytics to model the internal dynamics of diseased cells. These ambitious projects, many of which involve large interdisciplinary teams of computer scientists, engineers, statisticians, and physicians, represent the future of academic research.

"Our ability to collect, analyze, and interpret more and larger data sets is infusing new ideas and energy into virtually every academic field today — from data-rich disciplines like astronomy, biology, and climate science to increasingly data-driven professions like law, business, and journalism," says Jeannette M. Wing, director of Columbia's Data Science Institute, which supports collaborations between data scientists and researchers in other fields across the University. "Since data is everywhere, data science is applicable everywhere. What's happening at the medical campus right now represents a kind of collaboration we're bringing to every corner of Columbia."

NEW INSIGHTS ON DRUG SAFETY

For CUIMC researcher Nicholas Tatonetti, any sizable collection of digital medical records represents a treasure trove of potential discoveries.

Consider, for example, what the young computer scientist has been able to accomplish in recent years by mining an FDA database of prescription-drug side effects. The archive, which contains millions of reports of adverse drug reactions that physicians have observed in their patients, is continuously monitored by government scientists whose job it is to spot problems and pull drugs off the market if necessary. And yet by drilling down into the database with his own analytic tools, Tatonetti has found evidence that dozens of commonly prescribed drugs may interact in dangerous ways that have previously gone unnoticed. Among his most alarming findings: the antibiotic ceftriaxone, when taken

tions run in families,” says Tatonetti, noting that the results could help researchers identify genes that contribute to disease.

A thirty-five-year-old with a neatly trimmed beard and tattoos on his forearms, Tatonetti is part of a new wave of tech-savvy medical researchers who have largely bypassed traditional investigative approaches, such as observing patients firsthand in clinical studies, in favor of sifting through piles of existing medical data in search of scientific gold. The potential for this kind of research, its proponents say, has grown dramatically in recent years as the health-care industry has fully embraced digital record-keeping: whereas ten years ago the majority of US health-care institutions still relied on paper files to track their patients’ medical care, today only a small percentage of them do.

“The shift toward electronic record-keeping has just totally blown open the possibilities for what you can do as a medical researcher,” says Tatonetti. “A few years ago, if I’d told epidemiologists that I was planning to investigate how a person’s birth month relates to her health, they would have laughed me out of the room.”

Tatonetti came to Columbia, he says, because CUIMC was one of the first medical centers to adopt electronic record-keeping and therefore possesses

such data — both to improve patient care and to advance scientific knowledge. On the clinical side, they have developed artificial-intelligence systems that can analyze a patient’s entire medical history within seconds and then alert a CUIMC physician if, for instance, the patient is due for an immunization, is allergic to a medication that he or she is about to be prescribed, or is showing early signs of difficult-to-diagnose conditions like chronic kidney disease. To support new kinds of research, they have created special database-management tools that enable CUIMC officials to share patient data with researchers at Columbia and beyond in ways that protect the patients’ privacy.

“A big priority within the research community right now is figuring out how scientists from different medical centers can pool our data, so that we can all conduct more powerful studies,” says George Hripcsak, the chair of the biomedical-informatics department. He says that CUIMC is at the forefront of efforts to meet this challenge. “We’ve organized a number of national and international consortiums that expand scientists’ access to medical data while at the same time protecting patient privacy.”

The most ambitious of these initiatives, the Observational Health Data Sciences and Informatics program (OHDSI), has created a data-sharing network that

racial disparities in health-care access, country-by-country differences in how physicians treat common diseases, and problems that arise when children are prescribed adult medications, to name a few. Hripcsak himself is using the archive to assemble what will be a first-of-its-kind catalog revealing the rates at which people who take any of thousands of prescription drugs experience side effects. He says that physicians currently have no way of knowing how frequently many drug side effects occur, because the clinical trials conducted by pharmaceutical companies prior to releasing new drugs — which remain a primary source of scientific information about drug safety today — are too small to accurately assess their prevalence. But Hripcsak believes that by documenting all the health problems that millions of people have experienced shortly after starting on prescription drugs, and then using a number of analytic tricks to weed out incidental correlations in the data, he will be able to provide solid estimates for the prevalence of many drug side effects for the first time.

“Does a particular medication carry a 20 percent chance of causing a seizure or a 0.2 percent chance? That difference might determine whether or not you prescribe it to somebody,” he says. “But today, physicians are often in the dark when trying to make these kinds of judgment calls. They’ll read the list of potential side effects on a drug’s label but have little idea what real risk they pose.”

In addition to containing enormous amounts of information of value to physicians and patients, the new catalog could also be a boon for researchers.

“One of the things I’ll be using the catalog for is to spot more dangerous drug combinations,” says Tatonetti. “Knowing the rates at which certain side effects occur will provide us clues as to which pairs of drugs — among the thousands of pairs that may at first glance appear to be troublesome — are the most important to investigate.”

None of this is to say that data mining is going to replace traditional forms of medical research. Both Hripcsak and Tatonetti acknowledge, for example, that



“The shift toward electronic record-keeping has just totally blown open the possibilities for what you can do as a medical researcher.”

one of the richest patient databases in the world. Today it contains tens of millions of hospital intake forms, lab results, X-ray reports, prescription orders, immunization records, echocardiograms, vital signs, doctors’ and nurses’ notes, and discharge summaries. Faculty in Columbia’s Department of Biomedical Informatics have pioneered innovative ways of using

enables researchers at academic institutions in twenty-five countries to study the medical records of some four hundred million people, drawn from eighty health-care organizations around the world. Researchers participating in the network, of which CUIMC is the coordinating center, are now mining the records for insights into any number of topics:

the only way to evaluate the safety of new drugs is to see how they work on small numbers of people in closely monitored clinical trials. But they predict that as the insights of big-data analytics are gradually integrated into routine medical practice, with data scientists tapping into the rivers of digital information flowing out of doctors' offices and sharing their insights with practitioners in real time, a fundamentally different kind of health-care system will emerge.

"This will create what data scientists like to call a 'learning health system,' where medical treatments and procedures can be continuously monitored and tweaked, in accordance with how they're performing," says Hripcsak. "Eventually, we'll also have massive quantities of data coming in from mobile monitoring devices, like smart watches that record your vital signs. By analyzing that data, we could enable a physician to provide you individually tailored medical advice without you even stepping into his or her office."

USING DATA TO PREDICT EPIDEMICS

Every year, in the fall or winter, a wave of influenza hits the United States. And every year, health officials struggle to respond, because they don't know when the flu will strike or what parts of the country will be hardest hit. In a typical flu season, tens of thousands of Americans are killed by the virus, but if the timing and severity of outbreaks could be anticipated, then health officials could respond more effectively and save lives.

Jeffrey Shaman '03GSAS, an associate professor of environmental health sciences at Columbia's Mailman School of Public Health, has found a way to predict flu outbreaks using big-data analysis. Originally trained as a climate scientist, Shaman has for the past several years been developing computer systems that can anticipate the timing and magnitude of flu epidemics by analyzing many different types of data, some of which pertain to actual incidences of influenza and others to conditions in which the virus generally likes to spread. A typical



JEFFREY SHAMAN

forecast produced by his team might declare, for example, that there is a 60 percent chance of the city's flu season peaking in intensity in five weeks.

"That can give health-care workers more time to prepare," says Shaman, whose team currently publishes weekly flu forecasts for eighty-one US cities and all fifty states on its Columbia website. "They can stock up on medications like Tamiflu, assign more staff to emergency rooms, and launch public-awareness campaigns to maximize their impact."

Predicting flu outbreaks has long been a dream of public-health researchers, but until recently scientists knew too little about how influenza spreads. Even the most obvious feature of influenza's global migration cycle — that it emerges in

temperate regions in both the Northern and Southern Hemispheres during cold months — had been difficult to explain.

Shaman achieved a major breakthrough in this area when, in 2008, he discovered that the flu virus is adept at spreading in conditions of low humidity, such as those that prevail in North America during the winter. "No one's sure why this is, but there are a number of theories that attempt to explain why the flu virus, when expelled from a host as tiny airborne droplets, would be sensitive to ambient humidity," he says. "Some scientists have speculated that when it's less humid, chemical changes occur in the droplets that may protect flu viral particles trapped inside and make them more likely to infect people who inhale them."

Shaman, who studied hydrology and atmospheric sciences for many years before turning his attention to influenza, made this discovery by reanalyzing data that a group of Mount Sinai Hospital virologists had collected in a series of lab experiments that assessed the impact of humidity and temperature on the flu's transmissibility. The virologists had concluded that these factors had only a modest impact on flu transmission; Shaman, who as an environmental scientist was accustomed to dealing with such data sets, showed that humidity was, in fact, a very important factor.

"Whereas the original authors had looked at the effects of *relative* humidity, or the amount of water vapor in the air as a percentage of what it can hold at a given temperature, my team looked at the effects of *absolute* humidity, which is a more straightforward, mass-based measure, and we found that its effects were pronounced," he says.

Armed with this insight, Shaman and his colleagues began work on a flu forecasting system that was one of the first of its type. In order to train their computer to predict future epidemics, they first downloaded and studied information about every case of influenza reported to the US Centers for Disease Control and Prevention (CDC) since 2003, along with detailed climate data covering the same

numbers of people searching for flu-related keywords.

"The Google data stream was vital because it gave us nearly instantaneous knowledge about what was happening on the ground," says Sasi Kandula, a Columbia computer scientist who has contributed to the project. "Traditional epidemiological data, which consists of doctors' reports of flu cases, is typically a week or two old by the time an organization like the CDC releases it."

In 2012, after nearly four years spent developing their system, Shaman and his colleagues began releasing real-time flu predictions. The next year, CDC officials evaluated the Columbia team's predictions along with those produced by five other research groups, and they declared the Columbia team's the most reliable.

Since then, Shaman and his colleagues have been refining their models. By studying the pace at which influenza spreads through populations of varying densities and cities with different types of infrastructure, for example, they've improved the geographic resolution of their predictions to the point where, last winter, they developed a new forecasting system able to specify where in large cities the flu would hit first, down to the level of individual neighborhoods.

At the same time, the researchers have taken their work to the international

engineer, and computer scientist who is working on the project.

In the US, meanwhile, Shaman's team is attempting to plug some major gaps in our knowledge of how influenza spreads from person to person. One possibility that has long kept epidemiologists awake at night, Shaman says, is that some people carrying the flu virus may not develop symptoms and therefore go about their days blithely infecting others. The winter before last, Shaman and his colleagues, as part of a federally funded study, began collecting nasal swabs from large numbers of people in schools, daycare centers, and other public places in New York City.

"We're on the lookout for people who aren't visibly sick, yet are shedding the virus," says Shaman.

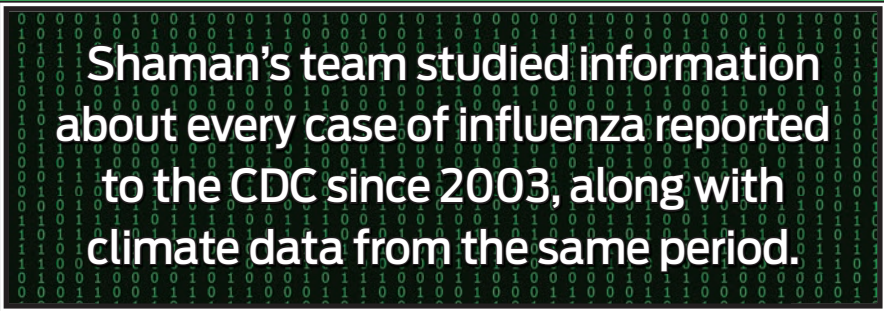
He says that if significant numbers of asymptomatic people are found to be contagious, this might prompt city health officials to proactively screen people for influenza. No matter what he and his colleagues discover through swab sampling, Shaman says, the study will move them one step closer to their ultimate goal, which is gaining a comprehensive understanding of how influenza moves through populations.

"Right now, flu forecasting is probably at the point where weather forecasting was fifty years ago," says Shaman, who notes that his forecasts are used only informally by health officials. "But as we develop better, more sophisticated influenza surveillance, and as we're better able to assimilate all the available data, that situation is going to change very quickly."

UNLOCKING THE POWER OF CITIZEN SCIENTISTS

A woman who complains to her doctor about extreme menstrual pain is likely to be told, *It's a normal part of being a woman, so tough it out.*

And yet, too often, the pain is not normal: it's the result of a disease called endometriosis, which occurs when uterine cells migrate outside the uterus, forming lesions that glom onto other organs. Experts say that this condition, which can damage the reproductive system if



Shaman's team studied information about every case of influenza reported to the CDC since 2003, along with climate data from the same period

period. The researchers then developed a computer model capable of making probabilistic predictions based on a steady stream of flu data it would receive from a number of disease-monitoring organizations, including the CDC, and climate data. They also taught the system to incorporate data that Google had just begun releasing daily on the locations and

stage, collaborating with scientists in Hong Kong and several other cities in Southeast Asia to build flu-prediction systems designed specifically for that region. "Forecasting flu outbreaks in this part of the world is important, since new and dangerous strains of the virus often emerge there," says Wan Yang, a Columbia epidemiologist, environmental

left untreated, often goes undiagnosed, because its primary symptom is an intense pelvic pain that occurs around the same time as a woman's period. According to many women's health advocates, the tendency of physicians to dismiss this pain as ordinary menstrual cramps has perpetuated a cycle of misinformation about endometriosis, with the medical establishment viewing it as an uncommon disorder and therefore investing little money in its research.

Three years ago, Noémie Elhadad '06SEAS, a Columbia medical researcher who suffers from endometriosis, decided to take matters into her own hands. A computer scientist who specializes in wresting insights from messy data sets, like collections of doctors' notes or patients' comments in online forums, she figured that if no major funding was available for a study on endometriosis, she'd come up with a technological hack to conduct one on the cheap. And one night while participating in a patient support group with fellow "endo" patients, as women with the disease call themselves, she had an idea for how to do it.

"I noticed that a lot of women were using smartphone apps that track your menstrual cycle, based on information you enter about any cramping, bloating, or bleeding you experience each day," says Elhadad. "And I thought, why don't we design a similar tool for women with endometriosis? Then they can document the nuances of their condition as citizen scientists."

Elhadad realized her vision last year, launching a crowdsourcing project called Citizen Endo. At the heart of the effort is a smartphone app, Phendo, that Elhadad developed with a \$50,000 grant from the Endometriosis Foundation of America. The project has already amassed the largest collection of clinical data about endometriosis in existence. Nearly three thousand endometriosis patients in sixty-five countries have used the app on a daily basis, some for several months at a stretch, to document their pain, energy levels, moods, diet, physical activities, medications, and pain-management strategies. The data is then transmitted to a com-



NOÉMIE ELHADAD

puter in Elhadad's office at CUIMC, where she and the members of her research team analyze it for insights into how the disease manifests in different women.

"A lot of the women choose to participate simply because they're passionate about helping to push the science forward," says Elhadad.

The goal of the project, Elhadad says, is to describe the full range of endometriosis's symptoms, and thereby help physicians diagnose and treat more cases. (The disease is typically treated with laparoscopic surgery to remove the lesions and hormonal therapy to prevent their regrowth.)

"Today, a doctor who's trying to diagnose endometriosis doesn't have a lot of information to go on," says Elhadad,

noting that previous studies on the disease have been too small to provide a proper accounting of its symptoms. "And plenty of the information that *is* available, we're finding out now, is just plain wrong."

Consider, for example, what the current medical literature says about the pain endured by endometriosis patients. A seminal paper on the topic, published by Harvard scientists in 2002, suggests that the pain is restricted to the pelvic region. But that's not true, according to Elhadad. She says that her data indicates that more than half of all women with the disease have pain that radiates down their back, arms, or legs — sometimes in combination with pelvic pain and sometimes without it. And while the

Harvard paper states that endometriosis pain always strikes women in sync with their periods, Elhadad's data reveals that many endometriosis patients suffer chronic pain that can persist for months or even years.

"It's actually been common knowledge for quite some time now among women with the disease, and some savvy gynecologists, that the pain can persist outside of a woman's period," she says. "But ours is the first study to document it."

Other findings were completely unexpected. After asking to see their subjects' medical histories, for example, Elhadad and her colleagues, who include biomedical informatics PhD candidate Mollie McKillop '14PH, discovered that many of the women had a history of urinary problems, such as incontinence or painful urination, not previously linked to endometriosis. The researchers are now scouring the data they received via the smartphone app to determine, for example, if a history of urinary issues may be linked to the severity of the disease, responsiveness to certain pain-management strategies, or a woman's chances of suffering what is perhaps the most feared outcome of the disease: infertility.

"We know already that about half of all women with endometriosis lose their ability to have children, often at a very

share that information and help them make better choices."

The Columbia researchers say they're still at the beginning of their evidence-gathering journey. Later this year, they will enroll an additional seven thousand women in Citizen Endo. They are also planning to expand the scope of their project to eventually incorporate analyses of their subjects' hormonal profiles, which they would acquire by having women submit blood or saliva samples. There's no end to the discoveries this effort could yield, the researchers say, since scientists currently know so little about endometriosis. Among the questions they hope to investigate are what causes the disease; whether it might be treated without surgery; and how prevalent it is (some gynecologists have estimated that 6 to 10 percent of all women may have endometriosis, although they say this assessment is very speculative).

"Just about anything we learn is going to be valuable, because we're starting from a place of such ignorance," says Elhadad, noting that women with the disease currently go an average of seven years before being diagnosed.

Elhadad suspects that women are enthusiastic about participating in Citizen Endo because they're grateful that medical professionals are now

communicate back and forth in ways that benefit everybody," she says. "I mean, sure, I now have access to huge amounts of information about these women's daily lives. But I need to give them back something in return. And what I'm going to give them should be the most personalized, intimate, and timely health advice they've ever received about their condition."

COMPUTING VS. CANCER

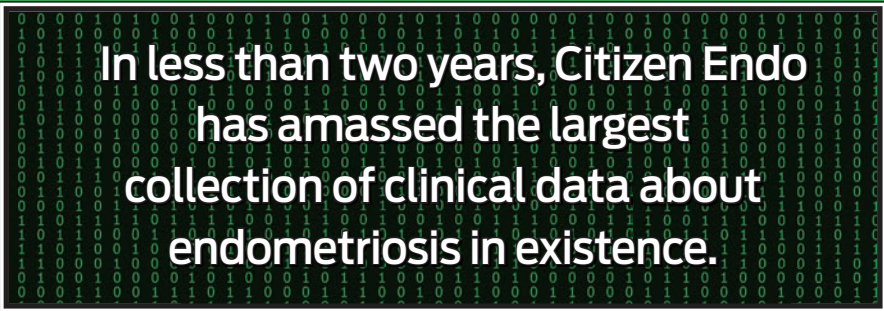
It has been nearly forty years since scientists discovered that cancer is caused by flaws in our DNA, and that insight still guides most oncology research today, inspiring scientists to hunt for cancer-causing genes and to search for drugs that help people with particular mutations.

Andrea Califano, the founding director and chair of CUIMC's Department of Systems Biology, has taken a different approach to studying the disease.

Rather than relying on genetic mutations as signposts in his quest to understand cancer, Califano has plunged headlong into the messy interior dynamics of cancer cells, attempting to determine how the tens of thousands of proteins operating inside cells can conspire to make them divide uncontrollably. It is an approach that has required him to build one of the most complex, data-intensive mathematical models of cellular activity in existence — yet it is revealing that cancer may be a simpler and more treatable disease than we first thought.

"What my team is doing is akin to dismantling a car that's broken down and then rebuilding it, one piece at a time, in hopes of diagnosing the problem," says Califano, a former theoretical physicist who worked for several years as a computational biologist at IBM's Thomas J. Watson Research Center before coming to Columbia in 2003. "We think this may be the only way we'll ever truly understand how a cancer cell works."

Califano set out on this path about ten years ago, when cancer researchers were beginning to realize, after years spent hoping that the Human Genome Project would produce a clear road map



In less than two years, Citizen Endo has amassed the largest collection of clinical data about endometriosis in existence.

young age, but we can't predict who this will happen to," Elhadad says. "I've heard twenty-two-year-old women say things like, 'Well, I don't really *want* to have a child right now, but maybe I should start trying before it's too late.' That's a horrible situation to be in. But if we can identify those patients who are likely to become infertile, we could

listening to them. And she says that she hopes to make their efforts more rewarding by eventually adding new features to her smartphone app to give women individualized tips on how best to manage their condition.

"One of the wonderful things about mobile technology today is that medical researchers and study subjects can com-

for fighting cancer, that the disease involves far more genes than anyone had previously imagined. Although a handful of genetic mutations wield a strong influence in causing some types of cancer — thereby giving researchers clues to developing new, personalized treatments — most forms of the disease turn out to involve dozens, or even hundreds, of mutations, each contributing a small portion of a person's overall risk. To make matters more confusing, the genes at the roots of cancer vary considerably from one person to the next, even among people whose tumors start in the same organ and otherwise look identical.

“So this raised the question: is cancer not one disease but actually thousands of different diseases that we'd have to cure individually?” says Califano. “My hunch, and my hope, was that this wasn't the case. I still believed there had to be some common cellular mechanisms shared by many cancers that we just hadn't noticed yet. And I thought to find them, we'd have to look beyond genes — straight into the guts of the cell.”

To many biologists, this seemed like an exercise in futility. No practical methods of studying the inner dynamics of entire cells existed at the time; biologists who studied interactions among proteins therefore restricted their analyses to small groups of molecules extracted from cells. Moreover, many biologists thought that diseased cells would be especially difficult to study, since their interior mechanics were going haywire.

“I never bought that idea,” says Califano. “Maybe it's my background as a physicist, but I tend to assume that nature is operating as efficiently as possible unless evidence tells us otherwise. I saw no reason to suspect that cells with virtually identical capabilities of spreading rapidly throughout your body aren't operating in an extremely orderly and consistent manner.”

It turns out that he may be right. In a series of stunning papers published over the past few years, Califano and several members of his lab have identified dozens of proteins that they say act as “master regulators” in cancer cells,

seamlessly orchestrating the activities of hundreds of other proteins, which, in turn, force the cells to divide and persist in a malignant state. Califano's team has accomplished this using a sophisticated investigative strategy, which involves measuring the activity levels of all the proteins in large numbers of healthy and cancerous cells; determining which proteins are capable of binding to one another; mapping out all their potential relationships in gigantic sunburst-shaped charts; and then training a computer algorithm to identify which proteins are most influential in making a cell cancerous. It took one of the largest supercomputers in the world, built under Califano's oversight at CUIMC in 2008, to perform the calculations.

The therapeutic implications of these discoveries could be profound. Califano says that the cancer-driving proteins that he and his colleagues have identified are active in certain subsets of people with many different types of cancer — an assessment based on their analysis of cells drawn from more than twenty thousand patients from across the United States. The researchers have also conducted experiments on mice to determine which of approximately 120 FDA-approved drugs and 340 experimental compounds are most effective against cancer cells that contain heightened levels of these proteins; based on the results, they've developed a computer-based diagnostic system that recommends treatment strategies



ANDREA CALIFANO

for cancer patients who test positive for the proteins.

“Often, the recommendations are for drugs that no physicians would have ever even thought to use for a certain kind of cancer,” says Califano. “The system can reveal that someone with brain cancer needs the same medication as someone with lung cancer or someone with leukemia. This is because some of the master regulators we’ve identified crop up in all sorts of cancers that nobody knew had underlying similarities.”

To date, Califano’s diagnostic technology has been used in only a handful of cases, when terminally ill cancer patients in the final stages of the disease sought experimental treatments. But the results have been so promising — with some patients having had their lives extended by six months or longer — that the FDA recently approved a clinical study in which dozens of men and women with pancreatic cancer will have their protein levels assessed by Califano’s team during their initial phase of treatment. Califano and his colleagues will then identify a handful of drugs that might help each patient and then work closely with scientists in the laboratory of CUIMC pancreatic-cancer specialist Kenneth Olive to test their effectiveness in mice that have been injected with the patient’s own cancer cells.

“While we’re performing these individually tailored experiments on mice, the patients will receive traditional care,” Olive says. “And then, based on the response of a person’s mouse avatar, we will select which one, among a dozen additional drugs, should be given to the patient.”

Califano hopes the technology, if it proves successful, will be widely used one day in conjunction with DNA tests — thus marrying the best cancer diagnostics of the genetics era and the emerging age of high-powered protein analysis.

“The best cancer care is going to result from bringing together genetics, proteomics, and other novel approaches like immunotherapy,” Califano says. “We must embrace cancer as a highly complex disease and throw everything we have at it.” 🐾

USING DATA FOR GOOD

So what does it take to be a data scientist? Advanced skills in computer science, statistics, or math is a sound start — but it’s only a start. Intellectual versatility is essential, since data scientists often collaborate with experts in fields as varied as business, medicine, law, finance, journalism, and urban planning. And then there is the need to navigate the tricky ethical implications of one’s work. Are data scientists prepared to ensure the responsible use of data through the entire data life cycle, from collection to analysis to interpretation? Or might a project jeopardize people’s privacy, as occurred when the political-consulting firm Cambridge Analytica misused data from tens of millions of Facebook profiles in the lead-up to the 2016 presidential election?

Jeannette M. Wing, the director of Columbia’s Data Science Institute, says that she came to Columbia last year in part to promote discussion among faculty and students about these types of complex issues. A former corporate vice president of Microsoft Research, she notes that the nascent field of data science, which she defines elegantly as “the extraction of value from data,” has yet to establish best practices for handling such challenges. And she thinks that Columbia, which created its Data Science Institute in 2012 — years before similar research centers began to pop up at other universities — is poised to lead the conversation.

“In addition to being five years ahead of the curve in promoting interdisciplinary data-science projects, Columbia has an advantage in that lots of our scholars in the social sciences and humanities want to be a part of this dialogue,” she says. “And if the field of data science is going to evolve in a socially responsible way, you have to include their perspectives.”

Wing has certainly succeeded in raising the visibility of data science at Columbia since arriving here. The Data Science Institute, initially based in the engineering school, has been elevated to a University-wide research center; its 250 affiliated faculty and researchers are engaged in projects that touch

nearly every academic discipline. Wing has also launched a postdoctoral fellowship program in data science, an undergraduate research program for promising young talent in the field, a seed-grant program to support new research collaborations, and a fundraising initiative aimed at creating new data-science faculty positions.

In all of her efforts, Wing says, she is guided by a simple mantra: “data for good.”

“I always say that at Columbia, we are harnessing the power of data science across all fields to drive exploration, provide insights, and make predictions to inform better decisions,” she says. “‘Data for good’ means using the power responsibly and ethically to tackle society’s greatest challenges.”



JEANNETTE M. WING





How a \$25-per-week songwriter became
the world's most influential record executive

By Paul Hond \ Illustrations by Michael Cho

"I know who I am, I know what I do, and I'm not interested in showing off."

You get past that quick," says Doug Morris '60CC, seated ankle-over-knee on the taupe-and-cream sofa in his office on lower Madison Avenue. "I'm interested in doing a good job, and that's about it. That's really the truth."

Morris, seventy-nine, compact, barrel-chested, dressed in an impeccably tailored dark suit and striped tie, his brow grooved like a musical staff, his head hedged with combed-back white, is the jukebox hero you never heard of. As the only person to run each of the "Big Three" record companies — Warner, Universal, and Sony — Morris has presided over rosters of artists whose gazillion-selling records are the soundtrack of modern life: U2, Stevie Nicks, Led Zeppelin, Phil Collins, Foreigner, Dr. Dre, Tupac Shakur, Snoop Dogg, Eminem, Mariah Carey, Jay-Z, Beyoncé, Adele, Lady Gaga, Kanye West, Taylor Swift, and many more, including his favorite act, the Rolling Stones, which Morris pronounces with an emphasis on the first word. His delivery of retro syllabic stresses (Broadway is *Broadway*) and dropped Rs is classic "New Yawk"; U2's Bono is said to do a spot-on imitation.

Morris got his start in the "rekkid business" in the early 1960s, in the tiny, cigar-stained offices of those Brill Building-era music factories near Times Square. His current office is more ample. In 2011, at age seventy-three, Morris became chairman and CEO of the Sony Music Group and led Sony to six straight years of increased profit and market share before handing off day-to-day operations last year. He was named chairman in 2017 — a mostly ceremonial position, as Morris would be the first to tell you.

Ensclosed in a sunny chamber with high ceilings, a baby grand piano, and an uptown view of the Chrysler Building, Morris is surrounded by mementos: a painting by Bono that Morris bought to benefit the Irish Hospice Foundation ("not only is Bono brilliant, he is so generous and nice it defies anything"); a signed Robert Rauschenberg Earth Day poster from Morris's late friend and colleague Ahmet Ertegun, founder of Atlantic Records ("the most remarkable, brilliant person you could ever meet"); and, on the table, a circa 1995 photo of Morris with Tupac, Snoop, and Suge Knight.

Morris, a family man with a wife, two sons, and six grandchildren, has never been fodder for the tabloids. Elegant and understated, he rejects the cultural stereotype of the debauched record mogul hoovering cocaine off his desk. "There are a lot of lovely, lovely people in the business," he says. "It's a business for people who love music. That's what it is."

Morris began his career as a musician. At age ten, he was writing songs at the family piano, back when the year's chart-topper was Dinah Shore's "Buttons and Bows." Then, in 1955, at seventeen — *A-wop-bop-a-loo-bop-a-wop-bam-boom!* The seminal cry of rock 'n' roll buzzed Morris's ears. "Little Richard, Chuck Berry, Fats Domino — it was a revolution in music, and I loved it," he says.

Morris's parents were concerned. His father, Walter Bernard Morris '21CC, '23LAW was a lawyer; his mother, a ballet instructor. They lived in Woodmere, Long Island, one of the Five Towns, where generally the notion was that your son would go to college and enter an established, stable profession, not one that involved plunking out three-chord ditties about girls. "The big question in my family," says Morris, "was, 'Who's gonna take care of Doug?'"

At Columbia, Morris, handsome and charismatic, majored in sociology and economics. By his own account "a terrible student," he was a member of the glee club ("it was an honor to be included") and even crooned once or twice at the Friday Night Dance in John Jay Hall. "I had one goal in college," says Morris, "and that was to get ahead in the music business."

Between classes, he'd take the subway to the record-factory mecca of Midtown and show his songs to Lou Levy, a Tin Pan Alley-era music publisher whose catalog included "Strangers in the Night" and "The Girl from Ipanema." Levy offered Morris twenty-five dollars a week to write for his company, Leeds Music. Levy then shared one of Morris's compositions with Jim Fogelson, "a famous A&R man who signed me, believe it or not, to Epic Records," now a division of Sony. The song, a piano-banger with Elvis-like vocal reverb called "Frigid Digit," got a brief notice in the October 29, 1960, issue of the music-industry magazine *Cash Box*, which called it "a rocker of questionable taste." Morris reports that a friend just sent him a copy. "He got it for five dollars on eBay."

Morris smiles. He can poke fun at himself, but at his core, never far from the surface, lies the mettle and command of the nine-figure dealmaker. A soft-spoken leader ("I hate screamers"), he's also a sensitive listener: Ertegun called him "the finest record man I ever worked with," and Grammy-winning singer Mary J. Blige, at the unveiling of Morris's star on the Hollywood Walk of Fame in 2010, called him "my father in the music business."

But what really distinguishes Morris from many record executives is his firsthand knowledge of the creative side. "I know what it feels like when a record does well, and I know what it feels like when it bombs," he says. "I know the anticipation and excitement, and I know the disappointment. I think understanding how artists feel when they put out a record has helped me in my career."

Morris's first big smash came in 1966,

while working as a songwriter and producer for Laurie Records, whose top act was the Chiffons, known for hits like "He's So Fine" and "One Fine Day." Morris spent a week writing a new song for the group called "Sweet Talkin' Guy." The record, which Morris also produced, reached number ten on the *Billboard* charts.

Shortly afterward, Morris was promoted to executive vice president of Laurie. An A&R man now, his job was no longer to *write* songs; it was to *find* them.

Identifying a hit song requires intuition and intellect, which for Morris translates to a simple, binary question. "Either you like it or you don't," he says, with a wave of his hand.

Morris isn't being glib. He speaks in essences, like some inverted Dylan, all enlightened literalness instead of riddles. For Morris, the secret of the record business isn't very complicated at all.

"It starts with the song," he says. "If you don't have a song, you have nothing."

This lesson was brought home in the spring of 1967, when Morris was at Laurie Records. A band from Ohio, the Music Explosion, sent Morris a song called "Little Bit O' Soul." Morris liked it and bought the master for five hundred bucks. Laurie released the record, catalog number 3380. This would be Morris's case study for deciphering the music business.

Morris hadn't thought much about what actually happens to a record once it goes out into the universe. Then one day, seated at his desk behind the sales executive, Murray Singer, Morris saw, on Singer's desk, an order for three hundred copies of Laurie 3380. His first order! And a big one, too. Excited, Morris asked

The insight emboldened Morris to start his own label, Big Tree Records, in 1970. "We didn't have very much money, and I didn't know anyone," he says. "I just thought I would know how to make good records. And we got hits right away." In 1971, Lobo's "Me and You and a Dog Named Boo," a strummy ode to itinerant road life, peaked at number five. Two years later, Morris cowrote and produced a song buried on the B-side of an album by the hard-rock trio Brownsville Station. Few listeners would have guessed that the song, "Smokin' in the Boys' Room," with its musk of lavatory stalls and juvenile rebellion, was the brainchild of a thirty-five-year-old Ivy League graduate. Still, Morris thought it was too close to "Jailhouse Rock" and didn't release it as a single. Yet magic happened: "A DJ in Portland, Maine, started playing it, and in two days it was the most requested song in the city," Morris says. So, following the formula for "Little Bit O' Soul," Big Tree got behind the song, and it climbed to number three in the country, an anthem for long-haired teenage boys.

Morris says that this sort of radio-based grassroots miracle — the local DJ who starts a wildfire with a single spark — still happens, as in the case of 2015's "Fight Song" by Rachel Platten, which went to number one on the adult charts. "A small station in Baltimore played it, and two days later people had bought five hundred copies," Morris says. "We picked up the record and sold several million."

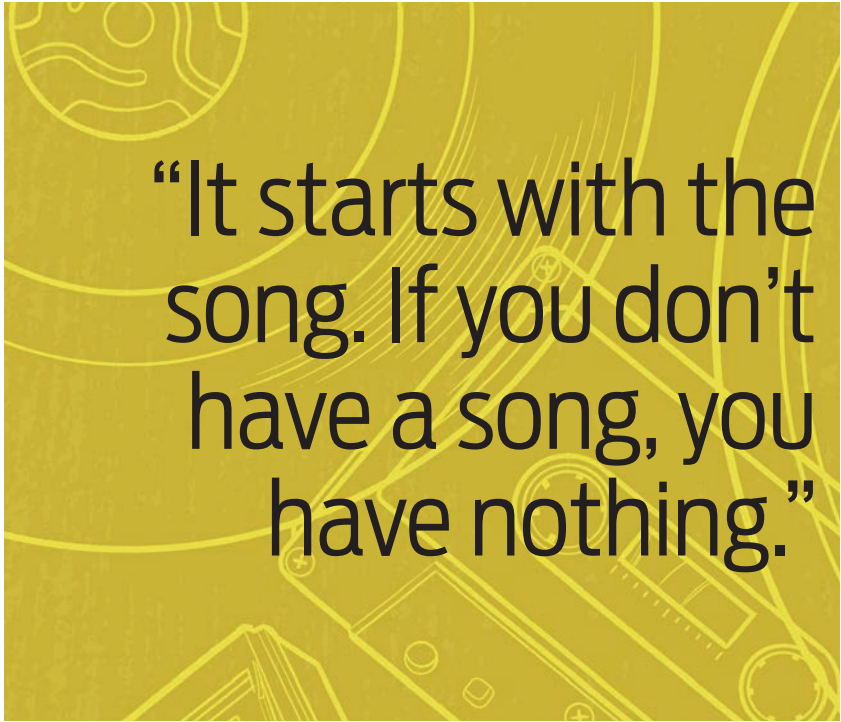
At Big Tree, Morris put out other million-sellers: the dance-floor pop-funk of "You Sexy Thing" by Hot Chocolate (number three) and the mellow mustache-and-heartstring longings of "I'd Really Love to See You Tonight" (number two) by England Dan and John Ford Coley.

Big Tree was bearing fruit, and in 1978, Morris got a phone call from Jerry Greenberg at Atlantic Records. Greenberg said that his boss, Ahmet, would like to talk.

Ahmet Ertegun: the bald, bespectacled, worldly, earthy, neatly goateed son of the Turkish ambassador to the US, devotee of Black American music, signer of Ray Charles and Aretha Franklin, illustrious *bon vivant*, and the subject, in 1978, of a thirty-five-thousand-word

profile in the *New Yorker*. "I was beyond excited," Morris says. "I went to Ahmet's office at Atlantic, and he said he liked what we were doing and that he wanted to buy Big Tree and have me run the Atlantic sub-label Atco, which had, believe it or not, Swan Song Records — Led Zeppelin's custom label — and Rolling Stones Records."

Morris was going electric. From England Dan to England Mick. It was radical. He had always been a songs guy, a singles guy, but this scene was the *album*, that ambitious, unified musical statement, requiring long-term commitment and cultivation. "I grew a beard and got a gold watch," Morris says with a chuckle. "I signed Stevie [Nicks] from Fleetwood Mac and Pete Townsend from the Who." Morris and Ertegun worked in adjoining offices, and "we began each day with a high-five and ended it with a hug." In 1980,



"It starts with the song. If you don't have a song, you have nothing."

Singer who placed it, but Singer, busy, dismissed it as a blip, not worth pursuing. So Morris investigated. He traced the order to two stores in the town of Cumberland, Maryland. Morris had never heard of the place. He called the stores and asked the clerks what was going on. They told him that a local disc jockey played the record and started getting requests from all over the state. Now the discs were flying off the shelves.

Morris told his bosses at Laurie, and they began promoting the record. The song charted in June, and by July 1967, "Little Bit O' Soul" was number two in America.

That's when Morris realized: you don't *manufacture* a hit, simply by playing it over and over. People have to ask for it. They have to *want* it. And if a record sparks, you fan that little flame with all you've got.

Ertegun made Morris president of Atlantic. One of Morris's first tasks was to find a producer for Nicks.

He called Jimmy Iovine, a skinny twenty-six-year-old kid from Red Hook who produced Patti Smith's single "Because the Night" and Tom Petty's album *Damn the Torpedoes*. "He was just so smart and talented," Morris says. "You couldn't stop Jimmy with a machine gun." Iovine agreed to produce Nicks's album *Bella Donna*, which hit number one in America.

Morris's stock continued to rise, and in 1990 he was named co-chairman and co-CEO, with Ertegun, of Warner Music Group, Atlantic's parent company. That year, Morris, in a move that would have enormous global impact, put up half the money for Iovine's new label, Interscope.

Morris was taken with Iovine's "ability to see around corners," and when Iovine told him that hardcore West Coast rap, still a niche genre, was going to go mainstream, Morris listened. In 1992, the pair flew to post-riot Los Angeles to meet with Marion "Suge" Knight, the imposing three-hundred-pound cofounder, with Dr. Dre, of Death Row Records, and a reputed member of the LA gang the Bloods. Knight agreed to a distribution deal with Interscope. Death Row, home to Dre, Snoop, and Tupac, entered the Warner fold.

The West Coast style, known as "gangsta rap," indeed blew up, and Warner was red-hot. Morris was named chairman and CEO of Warner Music US. But trouble was around the corner. Rap had come under scrutiny. People like former US drug czar William Bennett and US senator Robert Dole sounded the alarm about the effects of albums like *Doggystyle* on America's youth. Along with activist C. Delores Tucker, chairwoman of the National Political Congress of Black Women, they prevailed upon the Time Warner board to stop distributing rap music with violent or misogynistic lyrics.

Morris, congenitally averse to censorship, stood by the rappers, whom he saw as vital artists channeling their own experience. Rifts opened in the company over what to do. In June of 1995, Morris's boss, Michael Fuchs, the former chief of HBO and head of Warner's worldwide music division, summoned Morris to his office. Warner was having its best year ever, so Morris expected a positive encounter. It was an incredible shock, then, when Fuchs fired him. "Thrown out the window and splat on the pavement" is how Morris puts it. "The whole thing was very painful. But what I learned is that it's not how you go down, it's how you get up."

Hours after his firing, Morris got a call from Seagram's CEO, Edgar Bronfman Jr., who owned MCA Music Entertainment, an ossified outfit known in the industry as Music Cemetery of America. Bronfman wanted Morris to raise the dead. Morris accepted. When Fuchs, to complete the rap purge, cut ties with Interscope, Morris pounced: he called Iovine and convinced him to sell 50 percent of Interscope to MCA for \$200 million. Morris and Bronfman renamed the company Universal Music Group, and Morris assembled a hit squad: U2, Mariah Carey, Snoop,




Tupac, Eminem. CD sales soared, and by the turn of the millennium, Universal's market share peaked at nearly 40 percent, with profits of more than one billion dollars — the biggest record company in the world.

It's not for nothing that Bono once called Morris "a character who has risen several times from the ashes."

In his excellent 2015 book *How Music Got Free: A Story of Obsession and Invention*, Stephen Witt '11JRN tells how the record industry, personified by Morris at Universal, was nearly consumed by the flames of digital technology.

In 1996, a highly compressed audio-coding format called MP3 was patented in the US. This innovation allowed people to store songs on their computers and transmit them online. Soon, digital-audio exchanges like Napster (launched in 1999) appeared, attracting millions of erstwhile CD purchasers who could now download music for free.



“File sharing,” they called it. Morris preferred “stealing.” In Witt’s account, record executives, attached to the lush margins and unmatched profits of the fourteen-dollar compact disc, were slow to respond to the digital revolution. Piracy spread, CD sales plunged, and the industry was upended. Thousands of jobs were lost.

At first, Morris wasn’t sure what to do. He wasn’t a tech guy. He knew rhythm and blues, not algorithms and bytes. He also knew ledger balances and copyright law. And he took it personally when artists got cheated. It was Morris who, through the Recording Industry Association of America, brought the legal fight to Napster (shuttered in 2001) and LimeWire (found liable for copyright infringement in 2010). And it was Morris who got pilloried in the tech press for suggesting that the record industry, made up of music lovers and not technologists, was naturally unprepared to adapt quickly and efficiently to the Internet. Tech pundits derided him as a relic, out of touch, the face of an outmoded industry.

“What people don’t realize,” says Morris, “is that there were huge companies that tried and failed to monetize digital music. Microsoft, Sony. People said, ‘Why didn’t you guys do it?’ Because we’re musicians, we don’t know how. ‘Why didn’t you hire someone?’ Well, if Microsoft and Sony couldn’t do it, we weren’t going to do it.”

The guy who did it was Apple cofounder and CEO Steve Jobs. In 2001, Jobs came to Morris’s office and “articulated a clear thought that went from buying songs on iTunes to downloading them onto the iPod — it made a lot of sense,” Morris says. Though his bosses fretted because the new scheme would “unbundle” the album — letting consumers buy individual songs for ninety-nine cents apiece — Morris reasoned that most of Universal’s music was being stolen anyhow. And so he licensed all of it to Apple.

Today, in the post-CD era, the American record industry generates about half of the fifteen billion dollars it earned in 1999. But revenues are rising. “We’re coming back slowly,” says Morris, pointing to popular streaming services like Spotify and Apple Music and to the online music-video platform Vevo, which Morris cofounded in 2009 with the idea that if you sifted out the premium music videos from the junk-filled seas of the Internet and gathered them in one place, you could sell ads, licensing rights, and subscriptions.

Vevo now gets twenty-five billion views per month, and grossed \$650 million in 2017, breaking even for the first time, with profits expected in 2018.

“I don’t know anything about technology,” says Morris, his arm stretched out on the sofa back. “I know common sense.”

The phone rings. Morris picks up.

“Good morning, Jimmy,” he says, breaking into a warm, bright smile. Morris and Iovine still speak every day, a habit of thirty-five years. “I just read the article. I thought it was terrific.”

Morris is referring to a *Billboard* piece in which Iovine, now the head of Apple Music, disputes what he sees as a too-optimistic Wall Street report on the economics of music streaming. “It’s interesting,” Morris tells him, “because you’re going against all the conventional wisdom. It’s gonna cause some controversy, Jimmy.”

As Morris talks, it’s plain that his magnetism is bound up in his lively interest in others, in the refined pleasure he takes in their gifts. “Really smart, Jimmy,” he says. “Really, really smart. All right, kiddo. See ya later, pal.”

Iovine calls Morris “one of the greatest executives *for* executives ever,” and Morris is as esteemed in the industry for his recruitment and nurturing of executive talent as he is for his hit-making. In 1990 he hired Sylvia Rhone to run Atlantic’s East West Records — the first Black woman to head a major label and soon the most powerful woman in the business (she now runs Epic Records). There’s Craig Kallman, CEO of Atlantic Records (“I knew who he was and what he would become”), Monte Lipman, CEO of Republic Records (“I met him and knew he was something special”), and many more. “It’s all about recognizing the brilliance in other people,” Morris says.

This spirit extends to his management philosophy, which he sums up in two words: *be nice*. “Everyone has feelings and the need to feel included, and that’s what I always did. I never wanted anyone to leave the office and have a bad night. Everyone likes to be respected, paid well, appreciated for what they contribute. And when you do that day in and day out, people start believing in you.” Morris gives a verbal shrug. “I like to be treated nice, and I figure everyone else does. It’s not rocket science.”

Not for Morris, it isn’t. You like it or you don’t. It’s not how you go down, it’s how you get up. And if you don’t have a song, you have nothing.

Morris has songs. Again.

Shortly after speaking with *Columbia Magazine*, Morris, never down for the count, announces a new venture. He has secured the funding for an independent record company called 12 Tone. Nearly fifty years after founding Big Tree, Morris is getting back to his roots: heading up his own label.

This time, however, there won’t be vinyl or CDs. With streaming, you don’t need any sort of disc. Technology has changed, but music is still music. And Morris is still a passionate suitor.

“The one thing I learned is, no matter how you push to do other things, *fight* to make a living doing what you love,” he says.

Of all Morris’s maxims, this one carries the full weight of a sixty-year career.

“I’m telling you,” he says, like a songwriter reworking a line, finding the kernel, the universal vein. “If there’s something you love, you fight for it.” 🎵





POET IN MOTION

US POET LAUREATE
TRACY K. SMITH '97SOA
GIVES WINGS TO WORDS

BY PAUL HOND
PHOTOGRAPHS BY NATHAN PERKEL

In the fall of 1995, Tracy K. Smith '97SOA sat in a classroom in Dodge Hall at Columbia University, listening to the poet Lucille Clifton talk about her late husband. Clifton, a visiting professor and one of America's most beloved poets, often spoke about the interplay of her personal life and her writing, but one story was of particular interest to Smith: after Clifton lost her husband, strange poems began coming to her, as if from outside her own mind — poems that were telling her about the future.

At the time, Smith, a young graduate student, was still mourning the loss of her mother, who had died the year before of cancer. Kathryn Smith had been a devout Christian, proper and gracious, the backbone of the family, and she and Tracy, the youngest of five children, had had an intense bond.

Now, at age fifty-nine, she was gone.

Yet here was Clifton, in class, intimating that her dead husband was not exactly dead. "I remember her saying that there is energy all around us, communicating with us — if only we could listen," Smith says.

Smith has been listening ever since, her crystal-clear receptiveness and hunger for contact leading to four books of emotionally potent, revelatory poetry. She won the 2012 Pulitzer Prize for her collection *Life on Mars*, and her coming-of-age memoir *Ordinary Light* was a finalist for the 2015 National Book Award. Last year, Smith attained one of poetry's highest honors when the Librarian of Congress, Carla Hayden, acting on the consensus of more than a hundred poetry authorities nationwide, named Smith the US Poet Laureate for 2017–18. This past March, Smith was appointed to a second term.

In her work, Smith hurls herself through the weather of human feeling: love and loss, desire and need, dread and awe. Whether contemplating the worm inside the mescal bottle ("Its last happy exhalations, / Lungs giddy, mouth spilling / A necklace of minuscule bubbles") or deep-space images of dust funnels and stars ("We saw to the edge of all there is / So brutal and alive it seemed to comprehend us back"), there is always some underlying ache for "those moments

where you don't have control, where you wish something could overtake you, which I think is a big part of what being alive is about," she says. Lately her mind has been on the idea of compassion, and she is using her pulpit as poet laureate to bring the Word to places on the map often overlooked by the culturati: a church in South Carolina, an opioid treatment center in Kentucky. She wants people outside of cities and college towns to get the chance to talk about, as she says, "the big questions of feeling and experience that poetry puts us in mind of."

Smith writes mostly in free verse (unrhymed, unmetered), with the occasional formal composition — a sonnet, a villanelle — stitched neatly into the fabric of her slender books. Each poem begins its life as "an anxiety, some sort of unrest, good or bad, something I'm unsettled by or worried about, something I don't have a grasp on," Smith says. "A poem allows me to wrestle with these ideas and inklings and get somewhere with them." As she works, her ear gets busier, "listening to the sounds of words, and the images that emerge organically, and the ideas that those things give way to."

"I find poetry lifts us out of our conscious concerns and helps us think in different ways. You're playing with form, you're listening to strange associations, and something you didn't know you knew comes out. That fascinates me. It's one of the things that made me want to write poems: teaching myself something I didn't think I knew."

Smith first encountered the power of language through nursery rhymes and the Bible, and from the locutions of her Alabama-born parents. She grew up in Fairfield, California, halfway between San Francisco and Sacramento, and one town away from Travis Air Force Base. It was the 1970s, when, as Smith writes, "everything shone bright as brass": there were Saturday-morning cartoons, sprawling family breakfasts. Outside, a flowering yard hopped with finches that "scattered like buckshot" at human approach, and roads led to pastures where unsaddled horses came to your hand for apples.



Smith's father, Floyd William Smith, was a patriotic, sci-fi-loving Air Force avionics engineer who, after retiring from the military, worked on the Hubble Space Telescope. Her mother ran the household, went to church, sewed dresses and quilts, made a heavenly Alabama lemon-cheese layer cake, and later taught school.

But beneath the surface of family life and the Smiths' poised adherence to a code of excellence that was their answer to the assumptions of the white world around them, Smith, at age ten, lived with "a vague knowledge that pain was part of my birth-right." There was this unspoken thing whose presence she felt in her Southern-raised parents — what Smith memorably calls "the pain we hate most because we know it has been borne by the people we love."

Floyd Smith found comfort in books, and whenever his daughter complained of boredom, he encouraged her to read. At the house, titles by Sir Walter Scott and Edgar Allan Poe shared shelf space

with paperback mysteries, *National Geographic*, and *Yes I Can*, by Sammy Davis Jr. But the literature that made the biggest impression on young Smith came from school. She recalls being at home at age eleven, in the blue-velvet chair, book open, and reading the words:

I'm Nobody! Who are you?
Are you — Nobody — too?

"I thought: *she's talking to me*," Smith says. "*Someone's talking to me*."

The poet, Emily Dickinson, made Smith feel understood. "I wanted to be able to think and communicate in that way," she says.

After her high-school and Bible-school years, Smith, who had always dreamed of moving east, went to Harvard, where she indulged her love of those other prophets, the poets. She fell hard for the work of Elizabeth Bishop, Rita Dove '98HON, Philip Larkin, Seamus Heaney (one of her professors), Yusef Komunyakaa, and

William Matthews, and was drawn to the Spanish concept of *duende*, the mysterious, frenzied soul-force that seizes the artist and drives creativity.

During Smith's senior year of college, her mother fell ill. After graduation, Smith moved back to California to be with Kathryn, who, as her condition worsened, never lost faith in her deliverance — or in Smith's. In *Ordinary Light*, Smith recounts being in a room with her mother, who, delirious from medications, emerges from her fog into a perfect lucidity, speaking with unseen companions. Smith is startled: it's as if her mother "can see through this world to the next, to the places where ghosts and angels sit and walk and gesture unseen among us." When Smith asks her who's there, Kathryn says, clearly, "There are two angels sitting here, Tracy, and one of them just told me you're going to become a writer."

"I find poetry lifts us out of our conscious concerns and helps us think in different ways."



Weeks later, Smith, her siblings, and her father stood at Kathryn's bedside, saying "I love you" and "Goodbye," when they heard "a sound that seemed to carve a tunnel between our world and some other . . . an otherworldly breath, a vivid presence that blew past us without stopping."

For Smith, the death of her mother was "a huge loss that changed everything," she says. And so when she entered Columbia to study poetry, she had her subject.

Smith lives with her husband, literary scholar Raphael Allison, and their daughter and twin sons in a one-story house of wood beams and high windows on a pinecone-strewn street near Princeton University, where Smith directs the creative-writing program.

Inside, the house is open, light-filled. Crayola art covers the fridge. Books line the hall. In the living room, on a white sofa, Coco, a chocolate Labrador retriever, is hunched expectantly, a toy bone in her jaws. The muted trumpet of Miles Davis purrs from a small speaker. On a table sits an eye-grabbing artifact: a late-1950s green-gray typewriter that belonged to Kathryn Smith.

As Allison herds Coco out of the room, Smith looks back on her time at Columbia, "running around New York with my classmates, going to parties, meeting in cafés at night to workshop poems." Her

two years in the MFA program were both grounding and transformational. She remembers Clifton, who died in 2010, talking in class about the prophetic poems she wrote after her husband's death, but Smith wouldn't see them for another decade.

"Finally, in her last book, *Mercy* [2004], those poems appear, in a series called 'the message from The Ones (received in the late 70s),' " Smith says. "I use those poems now to say to my students, 'Write some poems that are not in your own voice, that are coming from a body of knowledge you don't have, that are prophetic, that come from outside the human.' For them it's probably going to be an exercise, though for Clifton it was real. But I think we can teach ourselves to imagine differently by moving in these directions."

Smith also studied with Lucie Brock-Broido '82SOA, former director of Columbia's MFA poetry program; Linda Gregg, later a colleague of Smith's at Princeton; and poet and memoirist Mark Doty.

Almost all the poems that Smith wrote in her two years at Columbia "were engaged with trying to resolve the fact that my mother was dead," Smith says.

While *Ordinary Light* and *Life on Mars* reflected the loss of her parents (Floyd Smith died in 2008), Smith's new work, *Wade in the Water*, winds its way through the idea of America itself.

At the heart of the collection lies a series of "found poems," existing documents that Smith has rendered into lines and stanzas. These historical texts include letters from Black soldiers of the Civil War and their loved ones.

A letter from Bel Air, Maryland, in August 1864 reads,

Mr. president It is my Desire to be free
to go to see my people
on the eastern shore my mistress
wont let me you will please
let me know if we are free and what i
can do

Smith has been thinking about America's "anxiety about welcoming strangers, and not just strangers but people who are from here who we're not willing to welcome," she says. "I thought maybe these letters were where I needed to start. There was a kind of disregard in the attitude toward these Black citizens, who were not considered citizens fully at that point, yet who were serving the nation in war.

"I want to find out what our anxiety is about. Poems help me ask these questions of myself, guiding me toward a better clarity around questions of compassion."

In *Wade in the Water*, Smith artfully interrogates racism, sexism, xenophobia, and environmental destruction (the poem "Watershed" blends the text of a *New York Times Magazine* exposé on chemical dumping with testimony of near-death experiences, to remarkable effect), but she does not read as a "political poet" in the doctrinaire sense. She's a seeker, an asker of questions at a moment when empathy is often politicized. Smith plays with this idea in "Political Poem," a title that "makes you expect something dogmatic," Smith

says. Instead, you get a dreamlike vision of two mowers in a field, a mile apart, and the poet imagining what would happen if they saw each other across that distance and waved — how their work would “carry them / into the better part of evening, each mowing / ahead and doubling back, then looking up to catch / sight of his echo, sought and held . . .”

And then there are angels: the pair of bikers, all leather jackets and corroded teeth, in “The Angels”; and the celestial associations of the title poem, “Wade in the Water,” named for a spiritual sung along the Underground Railroad as a reminder to people escaping slavery to take to the water, to throw the dogs off the scent.

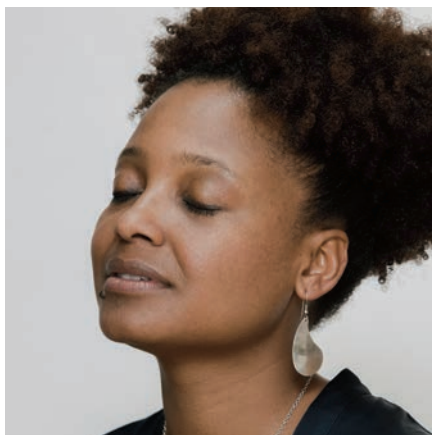
These elements link Smith’s personal history to America’s, and to the ever-rushing current that runs through all things, from the river to the stars.

“I think my work is motivated by a wish to connect to something outside of what we can see and understand,” Smith says. “Something that might help us to deal with what we’re confronted with — the real.”

The position of poet laureate was established in 1985, a revision to the title of consultant in poetry, which dates to 1937. In total, forty-eight American poets, including Bishop and Dove, have served as America’s official bard. Smith is the third Columbia graduate to hold the post, along with Daniel Hoffman ’47CC, ’56GSAS (1973–74) and Anthony Hecht ’50GSAS (1982–84).

The poet laureate opens and closes the Library of Congress’s annual literary series with a reading and a lecture, gives readings and interviews, and generally serves as a national consciousness-raiser for the art form. Shortly after Smith’s appointment, Senator Tom Udall of New Mexico, a poetry lover, invited her to his state. Smith visited Cannon Air Force Base, and at night she gave a reading of her own poems and those of other poets. “Some people wanted to read some of the poems I had read, in their own voices,” Smith says. “It was another way of sharing these texts — almost as offerings to each other.”

She also visited the Santa Fe Indian School, which the US government



“I think my work is motivated by a wish to connect to something outside of what we can see and understand.”

founded in 1890 with the goal of acculturation, and which gained autonomy in the 1920s. “It’s a beautiful place, where students are so mindful of their own culture and language, of the ways language is vital to identity, and of the threats that put language at peril. There was a sense of the living word, sacred and religious, which relates to poetry in many ways.”

On a trip to South Carolina, Smith went to rural sites: a church, a school involved in the *Brown v. Board of Education* Supreme Court cases. Congressman Jim Clyburn joined Smith and framed his introduction around Black history, “which was perfect, because so much of the poetry in my readings is drawn from history, or from thinking about the connection between current events and the history of civil rights and the Civil War,” Smith says. “I met a lot of people who were happy and proud. A woman told me, ‘I brought my daughter here because I wanted her to see that someone who looks like her can do what you’re doing.’ There was a motivation that had to do with selfhood and offering role models for a new generation of Black kids. It was a really special trip.”

If being a poet is to ask questions, being poet laureate is also to field them. People at Smith’s readings usually want to know where poems come from and how they’re made, while the press makes its perennial demand that poetry justify itself. “Why bother being a poet?” a reporter from *PBS NewsHour* asked Smith, naming runaway technology and political strife as possible disincentives. “What kind of impact could you possibly have amidst all that?” On *CBS This Morning*, an anchorwoman noted to Smith that many people find poetry “difficult” and “boring.”

But Smith says poetry is necessary in twenty-first-century life, “because it rewards us for naming things in their complexity. It creates a vocabulary for our difficult-to-name feelings; it brings us in touch with the quiet voice of the inner life, which most facets of consumer culture are drowning out. I think poetry is one way of saying, ‘None of that’s important. There’s something quiet that I house that’s worth contemplating.’” 📖

I went to a ring shout in Darien, Georgia, on a research trip. We were staying on a plantation, and we visited the Midway Museum, a replica of an 18th century coastal cottage, with exhibits rooted in the plantation owner's perspective. I had been dealing with a lot of big emotions as a result of the history we were observing, and then on the last night we went to the ring shout.

WADE IN THE WATER

for the Geechee Gullah Ring Shouters

One of the women greeted me.
I love you, she said. She didn't
Know me, but I believed her,
And a terrible new ache
Rolled over in my chest,
Like in a room where the drapes
Have been swept back. I love you,
I love you, as she continued
Down the hall past other strangers,
Each feeling pierced suddenly
By pillars of heavy light.
I love you, throughout
The performance, in every
Handclap, every stomp.
I love you in the rusted iron
Chains someone was made
To drag until love let them be
Unclasp and left empty
In the center of the ring.
I love you in the water
Where they pretended to wade,
Singing that old blood-deep song
That dragged us to those banks
And cast us in. I love you,
The angles of it scraping at
Each throat, shouldering past
The swirling dust motes
In those beams of light
That whatever we now knew
We could let ourselves feel, knew
To climb. O Woods—O Dogs—
O Tree—O Gun—O Girl, run—
O Miraculous Many Gone—
O Lord—O Lord—O Lord—
Is this love the trouble you promised?

The people who still practice this tradition see themselves as educators and cultural stewards, and also, I guess, conduits for that beautiful feeling of love.

I was singing "Wade in the Water" when I got home, and playing all these different versions of that song. Finally I said, I need to write a poem and dig into this.

"For an angel went down at a certain season into the pool and troubled the water. Whosoever then first after the troubling of the water stepped in was made whole of whatsoever disease he had."
—John 5:4

The ring shout is such a beautiful tradition. There's a lot of resemblance to West African percussion and song, because the people who were enslaved on the Sea Islands off Georgia had a geographic autonomy: the plantation owners would leave in the summertime because of the mosquitoes, and so the people who were working the land could preserve their practices.

One of the performers greeted every single person with the words "I love you," which I felt was this huge gift that activated these other feelings.

SUPER FREAK

Stephen Dubner '90SOA, coauthor of the mega-popular *Freakonomics* books and host of two hit podcasts, wants to tell you a few things you don't know

By Rebecca Shapiro

IT'S

a Saturday night in New York, and best-selling author Stephen Dubner '90SOA is onstage at Joe's Pub with Columbia linguistics professor John McWhorter and Columbia engineering professor Mike Massimino '84SEAS, discussing a delicate matter: how does an astronaut on a six-hour spacewalk go to the bathroom?

The conversation is a part of Dubner's podcast *Tell Me Something I Don't Know*, which is taped in front of a live audience at different venues around the country. For each episode, Dubner chooses a cohort (this week it's McWhorter) and a professional fact-checker (the *New York Times* opinion editor and writer Bari Weiss '07CC). Then, in a twist on the usual quiz-show format, Dubner challenges his guests to tell *him* an interesting fact or idea on a topic of their choosing. At the end of the night, the audience votes for their favorite contestant based on three criteria: whether the



information was something they really didn't know, whether it was worth knowing, and whether it was demonstrably true, as affirmed by the guest fact-checker.

The stakes aren't terribly high: there's no prize money, so the winner only takes home bragging rights. Still, the guests are impressive — a mix of academics and professionals, all experts in their fields — and they present a pleasing potpourri of miscellanea. CUNY history professor Jordi Getman Eraso tells the story behind Spain's wordless national anthem. Carol Willis '79GSAS, the curator of Manhattan's Skyscraper Museum, talks about the "skinny skyscraper," a kind of building unique to New York. Harvard researcher Georgios Pyrgiotakis, who works in nanotechnology, explains how water can be used to fight bacteria. And Massimino, a veteran of two space-shuttle missions, takes the audience through the intense training regimen required for

LEFT: RT IMAGES / ALAMY STOCK PHOTOS; RIGHT: AUDREY BERNSTEIN



a spacewalk — including how to pee in a spacesuit (the answer: a sophisticated diaper, known at NASA as a Maximum Absorbency Garment).

Integral to the show's quick, informal style is Dubner, an affable, inquisitive host, who banters with his guests in a way that makes their often esoteric knowledge seem entirely relatable. It's clear that this isn't for show — offstage, too, Dubner is chatty and always eager to learn more, the kind of person you might initially dread as a seatmate on a long plane ride, before inevitably succumbing to his charms.

"I actually came up with the idea for the podcast on a plane," Dubner says. "I was traveling a lot and would get to chatting with the people sitting next to me. I found that asking a simple question — what's something I don't know about what you do? — yielded the best conversations."

Dubner has built a brand around his ability to ask the right questions. Along with University of Chicago economist Steven Levitt, he is the coauthor of the wildly successful *Freakonomics* books and the host of the *Freakonomics Radio* podcast, all of which use data and economic theory to explain everyday phenomena. As of 2017, the three *Freakonomics* books had sold over seven million copies worldwide (or as Dubner says, "more than one copy per every thousand people on earth"), and the podcast gets eight million downloads per month. If Levitt is the mad scientist of the operation, Dubner is his translator, a journalist uniquely gifted at breaking down complex information.

Dubner says that curiosity has been a constant in his life, though his natural proclivity for probing questions wasn't always encouraged, especially in an unconventional family with an unusual past.

Dubner grew up the youngest of eight children in a small town in rural upstate New York. His parents, born Solomon Dubner and Florence Greenglass, were both raised in pious Jewish households in Brooklyn. As young adults, though, each converted to Roman Catholicism.

Such conversion was basically unheard of in the postwar Jewish diaspora, but the Dubners approached it with rigor.

Florence — who was a first cousin of executed spy Ethel Rosenberg — changed her name to Veronica; Sol morphed into Paul; and all eight Dubner children were named after saints. The family never missed Mass at their local church, and they kept a shrine with a wooden crucifix on top of the bookshelf. But their Christian piety also meant fully relinquishing their Jewish past; Dubner's maternal grandmother visited occasionally, but his father's parents had disowned their son when he converted, even sitting shiva for him.

"As the youngest of eight children, I naturally knew the least about my family's past," Dubner says.

His father died when Dubner was a teenager, and once his brothers and sisters had left for college, he grew especially



close with his mother. He excelled at math and science and also worked on his high-school newspaper, but he was more focused on writing music for his rock band. When his mother suggested selling their old farmhouse and moving to North Carolina, Dubner was happy to follow, and he earned his undergraduate degree at Appalachian State University.

After college, Dubner toured briefly with a band called the Right Profile — "a sort of mash-up of blues and Rolling Stones-style rock and punk — this was the early eighties, after all." The band was moderately successful and even wound up getting a record deal with Arista. But Dubner realized the lifestyle wasn't for him; he decided to quit music and go

to graduate school. "I loved music, but I didn't like touring or making records," he says. "Writing always came naturally to me. So I figured I should take the thing that I was good at and get better."

Dubner applied to Columbia's MFA program in fiction, initially thinking he wanted to write novels ("top-tier education wasn't really a part of my early life, so I was just knocked over and thrilled when I got in," he says). For his thesis, he started work on a novel based on his family's unusual religious path. But as he started doing research, his journalistic instincts kicked in.

"I kept wanting more facts, more information," Dubner says. "So I started interviewing my mom, and my dad's estranged family. And I realized that I was good at getting stories out of people."



Dubner completed his MFA but abandoned his novel, and eventually got a job writing for the *New York Times Magazine*. In 1996, he published a feature on his family and his subsequent decision to return to Judaism. Two years later, he turned the article into his first book, a memoir called *Turbulent Souls*. Then he got an assignment that would change the course of his career: a profile of Steven Levitt, a young economist who had recently made waves for a paper linking legalized abortion and decreased crime rates.

"I went to Chicago intending to meet with him for three hours," Dubner says. "I ended up staying three days."

Dubner found that Levitt was looking at economics in an entirely new way, using

his research to ask questions about everyday life. How does a baby name affect that child's future career? Do real-estate agents have their clients' best interests at heart? Is sumo wrestling fixed?

"I remember calling my wife from the hotel room and telling her, 'I have no idea if anyone's going to be interested in these things — in sumo wrestling and baby names,'" Dubner says. "But I didn't care. Every time I asked a question that I thought I knew the answer to, Levitt would totally upend the way I thought about it."

As it turned out, people did care. The article got an overwhelming reader response, and Dubner's literary agent

explains the success in a way that feels plucked from the pages of the book.

"It's called the blockbuster effect," he says. "It's impossible to go from small to big. But to go from big to really big is not actually that hard with something like a book, which thrives on word of mouth."

In other words, the book went viral. Dubner's publisher, William Morrow, was one of the first to tap into the blogosphere, circulating galleys to bloggers and other people who might be inclined to spread the word on social media — people who would today be called "influencers."

Dubner and Levitt picked up on that digital success and launched a website.

Dubner says that he's been pleasantly surprised by the direct impact that some episodes have on people. After an early episode called "The Upside of Quitting," for example, Dubner started hearing from listeners who had finally quit a bad job or left a toxic relationship and credited the show for giving them the final push. A story about Al Roth '71SEAS, a Stanford economist and Nobel laureate who is using an economic principle called market design to help people who need a kidney to match with a donor, has inspired several organ donations.

"I had people coming up to me for years telling me that they got a kidney because

"THERE'S SOMETHING ABOUT THE LIVE FORMAT THAT JUST ENCOURAGES GOOD CONVERSATION."



suggested that he and Levitt collaborate on a book.

"I was actually hesitant at first," Dubner says. "This is not how book deals usually emerge — I was the journalist, and he was the subject. But we worked well together. Levitt has this incredible way of looking at the world, and I was able to frame that in a way that people could really grasp."

The original *Freakonomics* book was published in 2005, debuting at number two on the *New York Times* bestseller list. But while plenty of books have a stint as a bestseller, momentum for *Freakonomics* built exponentially. By 2009, when Dubner and Levitt published the sequel, *Superfreakonomics*, sales of the first volume were over four million. Dubner

Then, in 2010, long before podcasts had become mainstream, they started *Freakonomics Radio*. For the last eight years, it has consistently ranked as one of iTunes's most downloaded podcasts.

"I've always liked radio. Growing up in a small town in upstate New York, it felt like a connection to the broader world," Dubner says. "I'm sure Levitt won't mind me saying that the podcast is really my project; he does it as a favor to me. But I do think that it's given us room to tackle so many more things than we'd be able to do in books, which can be very slow."

Over the course of 314 episodes, the podcast has examined everything from the economics of sleep (people who sleep better make more money), the question of tipping in restaurants (what happens when you eliminate tipping and raise menu prices?), and whether boycotts actually work. They've had an economist edit the online-dating profile of a hapless twentysomething and tried to determine the most efficient way to exercise. Some topics expand on concepts introduced in the book ("people are always very interested in baby names," says Dubner), but most are new, and the podcast format allows them to tackle more timely issues, like what Uber can teach us about the gender pay gap.

of that show," Dubner says. "I'm a pretty analytical guy, but the mushy side of me was very moved by that."

While each episode of *Freakonomics* is scripted, with a hefty dose of reporting involved, *Tell Me Something I Don't Know* is far more casual, which Dubner welcomes. "I think there's something about the live format that just encourages good conversation," he says. "People are spontaneous. When it works well — as it did in the episode with Mike Massimino — people forget that we're recording a podcast. It's like a great dinner party, without the dinner." Still, he hopes that listeners leave the episodes having learned something and curious to learn more.

And if Dubner were a guest on his own show and had to tell you something you didn't know about being one of the world's most successful authors, it would likely be the same thing he would say about being a podcast host or a magazine journalist.

"I've been surprised to find that whether I'm writing an article or a book or hosting a podcast, for me the work is actually very much the same," he says. "You find interesting people to talk to. You don't ask any yes-or-no questions. And you don't try to pretend that you're smarter than you are or that you know more than you do. It's that simple." 📖

The Politics Of Eating Well

Former *New York Times* columnist and best-selling cookbook author Mark Bittman is a lecturer in health policy and management at Columbia's Mailman School of Public Health. A leader in the progressive food movement, Bittman examines the intersection between food, public health, and social justice. We asked him to explain why he thinks our food system is flawed and how he recommends fixing it.

By Rebecca Shapiro



Columbia Magazine: For most of your career, you were primarily a cookbook author. When did you become interested in food as a public-health issue?

Mark Bittman: It was gradual. In the 1990s, I saw that there were big problems with the ways we produced and consumed food, and that those problems were getting worse. I saw the decline of small farming, the beginning of the obesity epidemic, and the surge in cases of diabetes that followed. I saw the increased reliance on hyper-processed food. And more. So I started gradually incorporating environmental and social issues into my food writing. As a first step, I started working on a comprehensive vegetarian cookbook, *How to Cook Everything Vegetarian*, and I began to encourage people to incorporate more plants into their diets.

Then a couple of critically important books came out — *Fast Food Nation*, by Eric Schlosser, and *The Omnivore's Dilemma*, by Michael Pollan '81GSAS — and I realized — rather late, upon reflection — that I, too, could be tackling these issues more aggressively. I had been writing for the *New York Times* for over a decade at that point, so I began with periodic pieces in the Sunday Review. Eventually I went to the Opinion section and became the first food opinion writer for a major paper.

You joined the Mailman School in 2016. What drew you to academia?

I felt I had accomplished all that I could as a columnist. I wanted to work collaboratively on these issues with like-minded people who shared my concerns. For the most part, it's been an inspiring and productive environment.



Your first major initiative at Columbia was hosting a free weekly lecture series. Why did you choose that public format?

Just before I started teaching at Columbia, I lived in Berkeley for a year. In California there's a near constant public conversation about how to remake the food-production system. I wanted to continue that conversation on the East Coast, while shifting the focus away from agriculture. There's more agriculture on the West Coast, and so there's more opportunity for agricultural change there, but there was definitely still room for a broader conversation here.

We have a public-health crisis related to food production, and while much of that has to do with agriculture, it also has to do with labor and immigration

and race and environmental policy. I wanted to focus on the ways these issues are interconnected.

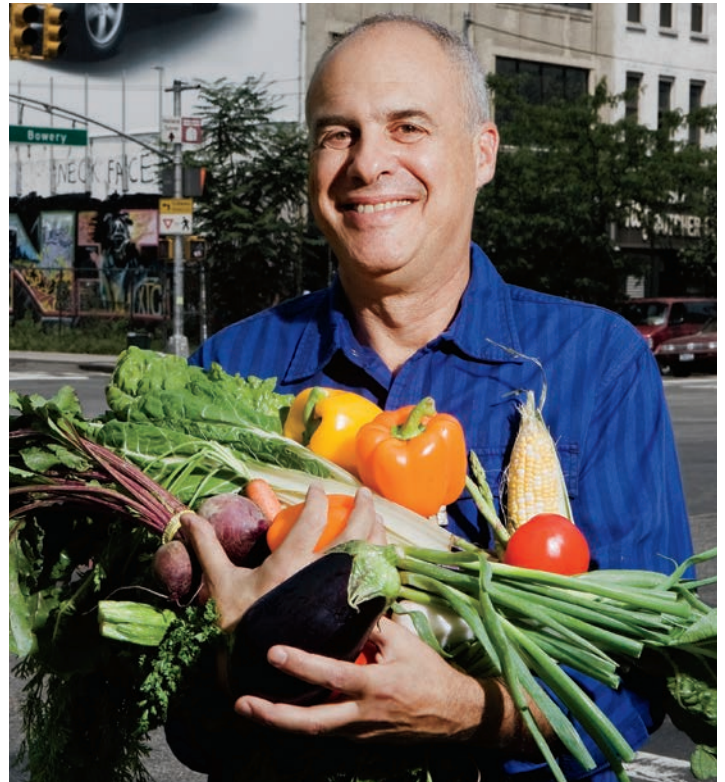
Let's start with labor.

Well, the plight of most food workers today resembles that of industrial work-

ers a hundred years ago. Eight of the ten worst paying jobs in America are in food production or are related to food. That means that the people who are bringing us food, who arguably have the most important jobs in the United States, often can't afford to feed themselves.

How can we address that problem?

The fast answer is with organization and, well, rabble-rousing. But on a basic level it starts with empathy. Most people in the United States could afford to pay more for food as a percentage of their income, and a small increase in food



costs could make a big difference in the lives of food workers. The best example of a program putting this principle into practice comes from the Coalition of Immokalee Workers, an advocacy group in Florida that launched the penny-a-pound tomato campaign. They used protests and boycotts to basically shame fast-food companies and retailers — including Walmart — into paying a penny per pound more for tomatoes at the wholesale level. The cost passed on to consumers was minuscule, but it translated into higher wages for pickers.

Many low-wage food workers are immigrants. How have recent changes to immigration policy affected food production?

The more President Trump limits immigration, the harder it is for American

agriculture to function; we don't yet have enough data to know for sure, but it can't help but have an impact. These are jobs that are almost universally taken by immigrants, both legal and undocumented. And it's not just the policies but also the rhetoric, which has been racist and anti-poor and generally discouraging to immigrant workers.

What other proposed policies could impact the food landscape?

Trump made a number of promises on the campaign trail that could drastically affect how we produce and consume food. Luckily, he hasn't gotten around to many of them yet, but most of us are concerned about environmental deregulation, school food, health care, and of course continued unqualified support for industrial agriculture with continued ignorance of the better alternatives. One very concrete threat is to

Sixty percent of government-subsidized agriculture is going to fund crops like corn and soy, which are mostly used to feed animals or fuel cars. The fewer regulations we have, of course, the easier it is for industrial agriculture companies to continue these damaging practices. It also makes it easier for them to make money and encourages their dominance in American food production.

In your first *New York Times* column, you issued a food manifesto, outlining your priorities for the future. One of the focal points was promoting small farmers. Right. Small farmers are crucial for the environment and for our health. We need the kinds of farmers that

onerous student-loan obligations often prohibit people from going into or staying in agriculture. We need legislation that adds farmers to the Public Service Loan Forgiveness program.

Finally, small farmers need better access to markets. The majority of our produce is purchased in huge quanti-

“It’s a happy coincidence that eating what’s better for your body is also better for our collective body.”

the Supplemental Nutrition Assistance Program (SNAP) — commonly called food stamps — which will come up for a vote in 2018 as a part of the farm bill. SNAP is an entitlement program. If we make qualifying for it more difficult, and knowledge about it harder to come by, it will fundamentally limit access to food for millions of Americans.

Can you talk a little about how environmental regulations affect food production?

Food production and the environment are inextricably linked. Our current agriculture system is responsible for more greenhouse-gas emissions than any other sector of our economy, aside from energy.

are growing nourishing food for people, instead of commodity crops that are intended for animals or cars or processed junk that makes us sick.

So, first of all, we need to get land into the right hands. Are there people who want to farm and grow good food? I think there are, but many can't afford land. There are credible solutions — land trusts for preserving farmland, farm business incubators, and federal and state programs — but the barriers remain high. There's also been a shift in the farming population — a recent survey by the National Young Farmers Coalition found that a majority of new farmers don't come from farming families, and have college educations. But

ties and plugged into a system geared to them. Someone that has three acres might have trouble breaking into that system and finding a market for their products. So they need to be near cities that have policies for buying from small farmers — that can figure out how to aggregate enough broccoli from local farms, for example, that it equals a shipment from California.

What other countries should we look to as models for food policy?

I'm spending the next six months traveling in the hopes of figuring out exactly that. It's a tough question, because governments are constantly changing, and that can curtail progress. Brazil



JOSHUA ROBER / ALAMY STOCK PHOTO

has really been a front-runner in terms of progressive food policy — it adopted a national food policy in 2003, which proved to dramatically reduce poverty and child mortality. Some of the policies there, like mandating that a percentage of school lunches be sourced from local farmers, are things I'd like to see here. But the government changed hands in 2016, and a number of the policies stalled or were reversed.

You've written extensively on obesity and how the American diet has declined. How do you think the government should legislate these kinds of issues?

follow. Our current dietary standards are hundreds of pages long, and they focus on minutiae — how much of individual nutrients people should be getting. Instead, we need to prioritize some big-picture messages: a plant-based diet, reduced calorie consumption in general, less sugar, and real, unprocessed foods.

What about things like food labeling?

Under the Obama administration, we made a little progress on getting national label enhancements. As a part of the ACA, every chain restaurant nationwide is now required to post nutrition content and calorie counts. We've had a similar policy in New York for several years,

You try to buy real food, and you prepare it yourself, and lo and behold, it's healthy. It takes practice, but it's fun.

There are, of course, things we can do policy-wise to make it easier for everyone to have access to good, real food. But we also need to encourage the kind of culture that values cooking and making good food decisions. Even if you live in what people call a food desert, with a limited budget and no access to a fancy farmers' market, you can make better choices. Rice and canned beans, with onions and peppers or carrots, is cheaper and much more nutritious for a family than getting McDonald's. We just need to make that the norm. If you spend a lot of time around public-health people, you start to hear the mantra, "We have to make the healthy choice the easy choice."

You're known as a fierce advocate for a plant-based diet, though you're not a vegetarian yourself.

The personal decisions we make are important, and this is an area where we can encourage people to make reasonable changes. Our current diet is killing us individually, and it's environmentally unsustainable. It's a happy coincidence that eating what's better for your body is also better for our collective body. I wanted to help people see that there's a very manageable way to do that. For many years I've adopted what I call the "vegan before six" diet — I avoid meat and dairy products during the day (before 6 p.m.) and relax about it at night. But that's only one way to address the issues, and it might not be the most practical one for a lot of people.

What else can people do to be responsible food consumers?

Well, what I've tried to do with my lecture series and my columns is to help people understand how all these issues are connected. This is about every aspect of democracy, and I believe that we need to be a more engaged citizenry. I don't care whether you organize around labor or the environment or race. Almost every issue affects food, and vice versa. It's all the same struggle. 🍌

The obesity epidemic is dire and is single-handedly reversing a hundred years of progress in public health. For the first time in generations, today's children have shorter life expectancies than their parents, largely because a third of them are likely to develop type 2 diabetes.

The Affordable Care Act (ACA) was a step in the direction of an integrated national health-care system, which I think is our only hope for combating problems like obesity and diabetes. But we need national dietary standards that are easy for people to understand and

and while there's no hard science yet on whether it has had an impact on people's choices, I continue to think that it's a step in the right direction.

What do you think is the most important thing people can do to improve their diets?

They can cook more. Home cooking was the foundation of most of my career, and it's something about which I remain passionate. It's an important way forward. The way you control what you put in your mouth and in your body is by cooking.



LEON WERDINGER / ALAMY STOCK PHOTO

EXPLORATIONS

FRONTIERS OF
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Was the Big Bang Really a Big Bounce?

Since the 1960s, most cosmologists have embraced the idea that our universe was born some fourteen billion years ago, when an infinitesimal, ultra-dense speck of matter exploded and eventually became all the planets, stars, and galaxies we see around us today. But not all cosmologists buy this origin story: others have proposed that our universe is eternal, and that it has always been expanding and contracting like a gigantic lung.

Anna Ijjas, an associate research scientist at Columbia's Center for Theoretical Physics, has emerged in

recent years as a leading proponent of this alternative vision, which is known as "Big Bounce" theory. And in a new paper in the *Journal of Cosmology and Astroparticle Physics*, the thirty-three-year-old Hungarian-born theorist offers her most detailed explanation yet for how the universe could undergo such fluctuations. Specifically, her paper addresses how the universe, after a period of contraction, might have reversed course and begun to expand: she hypothesizes that there is an as-yet-unrecognized form of energy that, if squeezed into a small enough space, can suddenly push everything

back outward. (To imagine how this would work, picture an airtight room whose walls collapse inward, like a garbage compactor's, until the air molecules inside build up so much pressure that they cause the now-miniaturized room to explode.)

Ijjas's vision is radical, going against a century's worth of received wisdom among physicists about how matter and energy behave. For example, Einstein's general theory of relativity predicts that if any large celestial object implodes abruptly, it will devour itself, disappearing into an infinitely small and dense point known as a singularity. Astronomers have found evidence of this happening many times when massive stars have died; the result is what's commonly known as a black hole. The idea that our universe could somehow avoid this same fate, if the whole thing were to shrink down to *nearly* a singularity — which is what bounce theorists suggest happened fourteen billion years ago — strikes most cosmologists as far-fetched.

Seemingly outlandish ideas sometimes pay off in physics, though. The Belgian theorist Georges Lemaître was dismissed by his peers when in 1931 he proposed that the universe had sprouted from a tiny "Cosmic Egg"; three decades later, he was vindicated when telescopes found traces of interstellar radiation that could only be remnants from a time when the universe was extraordinarily small, hot, and compact. And today, even physicists who are deeply skeptical of Big Bounce theory concede that Ijjas's latest

version of the idea is among the most sophisticated and mathematically compelling yet dreamed up. With a bit more fine-tuning, they say, her hypothesis could even be testable; this would move the Big Bounce notion out of the realm of pure theory and into that of verifiable science.

To this end, Ijjas is now designing computer programs that simulate what the universe would have looked like in the moment it shifted from a period of contraction to a period of expansion; by studying these simulations, she hopes to determine what evidentiary traces of the event might still be observable.

"It's possible that a bounce could have left a distinct imprint on the Cosmic Microwave Background, which is the ancient light that's still visible from the first moments our universe started to expand," she says.

Ijjas is pursuing this work with a great sense of urgency. Her goal is to develop analytic techniques that will help her search for signs of a bounce in data produced by a new generation of telescopes scheduled to be built in the early 2020s. Such analyses could prove valuable, she says, whether or not she finds evidence of a bounce.

"My goal isn't necessarily to prove my own ideas right, but to learn something fundamental about the nature of the universe," she says. "If my hypothesis turns out to be wrong, this will just strengthen the case for the Big Bang — and for the idea that time had a definite starting point. And that in itself would be quite satisfying."

A prescription for pollution

As Americans take more and more prescription drugs, scientists say that a new environmental threat is emerging: discarded pharmaceuticals are beginning to contaminate our rivers, ponds, and lakes.

Now a study conducted by a team of researchers that includes Andrew Juhl, an aquatic biologist at Columbia's Lamont-Doherty Earth Observatory, has detected sixteen commonly prescribed medications at multiple sites along a 155-mile stretch of the

they took samples, with an average of about eight different medications found in each spot.

"Some levels are high enough that you could be concerned about the effects on fish and other aquatic organisms," says Juhl, whose collaborators on the project include scientists from the EPA, Queens College, and the environmental group Riverkeeper.

Pharmaceuticals can enter waterways, experts say, both as a result of people dumping unused pills down their drains and as a result of them excreting unmetabolized pills they've taken. Because drug molecules are not removed by water-treatment systems, they get pumped out with recycled water.

Juhl and his colleagues found the highest concentrations of drugs not near New York City, as one might expect, but rather near the sewage outfalls of several upstate municipalities, including Orangetown, Kingston, Troy, and Albany. They suspect this is because pollutants in New York Harbor may get diluted by the ocean's tides.

Juhl hopes that his study will prompt other scientists to investigate the effects of pharmaceutical pollution on wildlife.

"Now we have a baseline for conducting toxicological studies that look at how particular species of fish could be affected," he says.



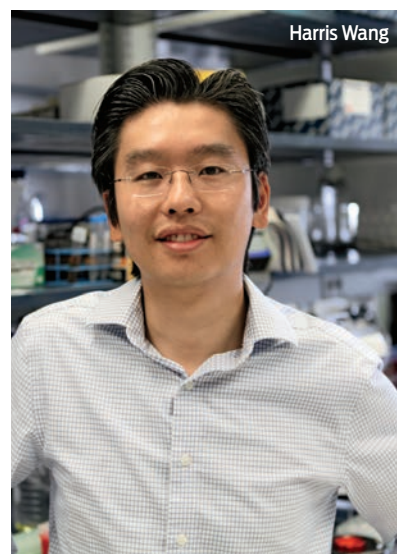
The Hudson River near Peekskill, New York.

Hudson River. The researchers discovered significant levels of drugs — among them antibiotics, pain relievers, and drugs for treating high blood pressure, high cholesterol, epilepsy, ulcers, and heartburn — at all seventy-two locations where

World's smallest tape recorder built from microbes

Through a few clever molecular hacks, researchers at Columbia University Irving Medical Center have converted a strain of bacteria into a microbial "tape recorder" that they say could be used to detect the presence of invasive microbes, or worrisome levels of familiar molecules, inside the human body.

The researchers, led by cell biologist Harris Wang, modified an ordinary



Harris Wang

EXPLORATIONS

laboratory strain of the ubiquitous human-gut microbe *E. coli*, enabling it to record, in its own DNA, information about any microorganisms or chemical compounds with which it interacts. The new, specially engineered *E. coli* can also document the order in which it encounters other substances, thereby time-stamping the events.

“Such bacteria, swallowed by a patient, might be able to record the changes they experience through the whole digestive tract, yielding an unprecedented view of previously inaccessible phenomena,” says Wang, whose paper appeared in the journal *Science*.

To create this tool, the researchers exploited a part of *E. coli*’s immune system that snips out pieces of DNA from invading viruses and then stores the foreign code for the purpose of quickly recognizing and attacking the viruses in the future. (This special immune function, which is found in many bacteria and is known as CRISPR-Cas, has been used by other scientists as a gene-editing technology.) Wang modified CRISPR-Cas to record not only viral DNA but a variety of chemical signals. For example, his engineered *E. coli* could detect the presence of certain sugars in the gut that indicate an infection.



E. coli
bacteria.

“The CRISPR-Cas system is a natural biological memory device,” says Wang, who notes that his technology will need to be made more efficient before it can be used clinically. “From an engineering perspective that’s actually quite nice, because it’s already a system that has been honed through evolution to be really great at storing information.”

Yelp if you’ve got food poisoning



After eating a restaurant meal that makes them ill, many people will go straight to the review site Yelp to voice their complaints rather than alert health authorities. The result is that outbreaks of food poisoning can sometimes go undetected for days or even weeks, leading more people to become sick.

But what if health officials could monitor, in real time, all the comments posted on Yelp for clues about where and when such outbreaks are occurring? A few years ago, a team of Columbia computer scientists led by Luis Gravano and Daniel Hsu developed an artificial-intelligence system that does just that, and they began sharing their results with food inspectors at the New York City Department of Health and Mental

Hygiene. The scientists have now released the results of the experiment. It shows that between 2012 and 2017 their automated system identified 8,523 complaints of food-borne illness and ten situations in which restaurants were later confirmed by authorities to have served contaminated food to multiple customers.

“This represents a nearly 45 percent increase in the total number of complaints we would usually receive in that period,” says city health commissioner Mary T. Bassett ’79PS, noting that her staff investigates all reports of food-borne illness. “These are incidents that might otherwise have gone unreported.”

The Columbia technology is designed to flag any Yelp reviews that contain words like “sick,” “vomit,” and other terms that might indicate a person has experienced food poisoning. City inspectors then contact the author of the review — just as they would contact anyone who files a report of food-borne illness through the city’s 311 complaint line or website — to learn more about what they ate and their symptoms.

Gravano and Hsu say that their computer system has worked so well in New York that they are planning to roll it out in other cities, possibly with a new feature that will scan Twitter for tweets about bad meals and upset stomachs.

“Extracting information from social media is of high importance these days, because lots of people who wouldn’t think to file an official government complaint will nevertheless go online and tell everyone in the world that they’re sick,” says Gravano.

Sticking up for science

Columbia's Sabin Center for Climate Change Law recently launched a website that documents the US government's efforts to suppress the work of scientists working on environmental, public-health, and climate issues. The website, called the Silencing Science Tracker, records attempts by the Trump administration to restrict or distort public

discussion about scientific research. It concludes that the largest number of anti-science actions so far have occurred at the Environmental Protection Agency, followed by the Departments of the Interior and Energy.

A collaboration with the Climate Science Legal Defense Fund, the Silencing Science Tracker also links to legal resources for whistleblowers and scientists.



THE NEXT TREND IN ECO FASHION could be footwear made of kelp, whose fibrous blades a team of Columbia researchers has turned into a strong and supple thread. The researchers, led by Theanne Schiros, who teaches at both Columbia Engineering and the Fashion Institute of Technology, say that algae-based fabric could be used to produce any number of biodegradable types of clothing. The mass harvesting of kelp, meanwhile, would give coastal communities around the world incentive to preserve their local ecologies and provide work for fishermen in the off-season. A startup co-led by Schiros, called AlgiKnit, recently won twenty-five thousand dollars in *National Geographic's* Chasing Genius Challenge to perfect its plans for manufacturing kelp-based sneakers (a prototype of which is pictured above), shirts, and accessories.

STUDY HALL RESEARCH BRIEFS

Weekend ceasefire Gunshot-related deaths and injuries decline 20 percent on the weekend when the NRA holds its annual convention, apparently because its tens of thousands of attendees temporarily holster their weapons. The new study by Columbia economics PhD student Andrew Olenski and Harvard economist Anupam Jena seems to show that experienced gun users, not just novices, are susceptible to firearm accidents.

Risky waters Columbia environmental scientists Upmanu Lall and Haowei Wu '17SEAS have found that between 3 and 10 percent of municipal water systems in the United States are in violation of federal health standards each year. Their study reveals that in 2015, as many as twenty-one million Americans were exposed to unsafe drinking water.

The science of fear A team of Columbia neuroscientists led by René Hen has identified a group of neurons in mice that are at the root of the brain's anxiety response. The scientists hope that by further investigating these neurons they will be able to develop new treatments for anxiety disorders.

Tragic reactions Robin Williams's suicide in 2014 inspired a wave of copycat deaths, according to a new study by Columbia epidemiology PhD candidate David Fink. In the five months following the comedian's death, Fink shows, the suicide rate in the US increased by 10 percent and the number of people who killed themselves by asphyxiation (as Williams did) rose by 32 percent. Fink says that US news organizations contributed to the problem by failing to follow World Health Organization guidelines that suggest reporters avoid detailing the suicide methods of celebrities.

Smog-day blues Air pollution lowers productivity even among white-collar workers who spend their days indoors, say economists Michaela Pagel of Columbia Business School and Steffen Meyer of Germany's Leibniz University. By analyzing the job performance of more than one hundred thousand private investors from 2003 to 2015, the researchers found that the investors took fewer steps to execute trades on days when smog levels spiked.

Time is ticking away A new blood test developed by Columbia epidemiologist W. Ian Lipkin promises to revolutionize the diagnosis of tick-borne illnesses. The test, called the Tick-Borne Disease Serochip, will enable medical workers to distinguish between Lyme disease and seven other conditions spread by tick bites much faster and with greater reliability than is possible with current diagnostic methods.

— Julia Joy

NETWORK

YOUR ALUMNI CONNECTION



Martin Lewison and his wife Cheryl ride Ohio's Woodstock Express (left) and celebrate coaster number 1,600 (inset).

High Roller

Even in the thrill-a-second universe of roller coasters, Taiwan's Gravity Max is unique. The coaster lifts riders 114 feet into the air before bringing them to a lurching stop at what looks like the end of the track. For a few tense seconds, riders have a bird's-eye view of the whole park. Then the world drops away — the track is falling!

Actually, it's just swinging. The section of track — with the train still on it — pivots from horizontal to vertical, leaving riders facing the ground. They contemplate this new perspective for a few moments until — *click* — the cars are released and they plummet downward at fifty-six miles per hour, tearing into a series of loops and tunnels.

Martin Lewison '88CC travels the world for just this sort of terrifying experience. He has ridden 1,665 coasters, including the Gravity Max, mostly with his wife Cheryl. The Lewisons have visited coasters in thirty-two countries. They've

ridden the world's fastest, which is Formula Rossa at Abu Dhabi's Ferrari World; and the world's tallest, which is Kingda Ka, at New Jersey's Six Flags Great Adventure; the longest, which is Steel Dragon 2000, in Japan; and the weirdest, which is without a doubt the Hundeputterutchebane (the word means "dog-fart roller coaster") in Denmark, which entertains riders with the sounds of flatulence.

Lewison has even built his career around roller coasters. As an assistant professor of business management at Farmingdale State College in New York, he researches and teaches the business of amusement parks.

Lewison enjoyed theme parks as a kid growing up in New Jersey, but by the time he entered Columbia in 1984, his interests lay elsewhere — his economics classes, and the fraternity Beta Theta Pi. When he was working on a doctorate at the University of Pittsburgh in the mid-1990s, a friend introduced him to the wonders of Kennywood, a local century-old amusement park with several classic wooden coasters. He met Cheryl in

2007, and she encouraged his burgeoning hobby.

While the Lewisons love the cultural exchanges of foreign parks, he says that their most unusual ride was on a farm in Indiana, where the owner had built a twenty-foot-high corkscrew coaster on top of an A-frame shed behind his house. The car had only one seat, and it came with instructions: lean to the right at the start, lean to the left at the loop.

"Most people don't get to add that one to their list," he says.

Ask Lewison why the couple devotes so much time to roller coasters and he'll talk about the thrill of defying gravity, the intellectual stimulation of learning the technology behind them, the variations in style, size, color, layout, and sensation. He'll talk about the idea of "collecting" rides, of having a reason to travel the world.

"But mostly, not much has changed since I was a ten-year-old kid on the boardwalk," he says. "I like roller coasters because they're fun."

— Alan Wechsler

LEWISON'S FAVORITE AMERICAN RIDES

The Phoenix

Knoebels Amusement Resort
Elysburg, Pennsylvania

Nitro, El Toro, Kingda Ka

Six Flags Great Adventure
Jackson Township, New Jersey

Phantom's Revenge

Kennywood
West Mifflin, Pennsylvania

Frozen Assets

Rachel Drori '09BUS has never had much time for home cooking. As a busy marketing professional turned CEO, she's always appreciated the convenience of frozen food. But finding healthy options in a freezer aisle stocked with microwavable meals isn't always easy. So in 2015, Drori decided to remedy that problem by founding Daily Harvest, a superfood company.

The New York City-based startup offers frozen smoothies, meal bowls, snacks, and desserts made from plant-based ingredients and curated by chefs and nutritionists who look to food trends for recipe inspiration. All items are sold through a subscription delivery service at seven to eight dollars each, and most can be prepared quickly with a blender, stove, or microwave, with the sole addition of water, milk, or another liquid base.

With Daily Harvest, Drori wants to rebrand frozen food as more than just fast and easy. She says that items in grocery-store freezer aisles have changed little since the 1950s — the era of Betty Crocker and TV dinners — and that the category is ripe for innovation: "People have traditionally associated frozen food with things like a bag of chicken nuggets. Nobody has thought much about what it could be."

Drori hopes that people will begin to associate frozen food with healthy eating, and says that the frozen ingredients in her harvest bowls and chia parfaits

are more nutritious than fresh produce because they're picked at peak ripeness. "For example," she says, "frozen blueberries are actually healthier than the fresh ones at Whole Foods, which are harvested while still green and

degrade significantly in nutrient content during their long journey to an end user."

Drori's message is clearly resonating. Over the last three years, Daily Harvest has added over one hundred thousand subscribers and has

attracted celebrity investors like Gwyneth Paltrow and Serena Williams. Last year, the company



Rachel Drori with one of her frozen smoothies.

raised forty-three million dollars in Series B financing.

For promotion, Daily Harvest plays into the aesthetic of "food porn" by posting gorgeous images of their offerings on Instagram. "People eat with their eyes first," Drori says. She adds that the company also sets itself apart from other food startups by reaching customers who, so to speak, have too much on their plates.

"It can be a romantic idea to make things with a delivery

meal kit, but it's also a lot of work," says Drori. "Then there are subscription meals that require less prep time, but they're full of additives and preservatives."

"Everything we do is meant for busy people who don't have time to cook or do research, and who want someone they trust to tell them what to eat," Drori continues. "Convenience without compromising nutrition is where Daily Harvest really stands out."

— Julia Joy



EN POINTE May Kesler '82PS, who laced up her first pair of ballet slippers at age two, has been dancing for over sixty years. Now she appears in several professional productions a year and regularly incorporates dance into her physical-therapy practice near Washington, DC. Kesler was selected to represent the capital city in photographer Jonathan Givens's new book, *Dance Across the USA*, which showcases dancers in front of iconic American landmarks.

NETWORK

Trail Head

The term trailblazer is tossed around frequently. But for Paul Stephens '09JRN, the description isn't just laudatory: it's literal.

For the past three summers, Stephens, thirty-six, has been bushwhacking through forests, climbing mountains, and navigating glaciers as he attempts to build the first long-distance hiking trail through the Caucasus Mountains, which divide a portion of Asia and Europe.

An avid outdoorsman who grew up in a small town in Indiana, Stephens first started



Paul Stephens clearing a trail in the Caucasus Mountains.

exploring the Caucasus as a Peace Corps volunteer in Georgia between 2005 and 2007. He returned to the US to study journalism at Columbia, then spent a few years in Yemen, writing about international affairs. In 2011, he moved back to Georgia, where he landed a commu-

nications gig with USAID, the United States Agency for International Development.

"I was visiting these different mountainous regions, and I started thinking that it would be amazing if they were connected," Stephens says.

This idea led Stephens to found the Transcaucasian Trail initiative, which he now directs. His goal is to develop a three-thousand-kilometer-long route, which will link more than twenty existing and proposed national parks across three countries. Such a trail would not only create opportunities for pleasure but bring in much-needed tourist money, says Stephens: "Attracting world-class recreational hiking to the region could dramatically increase economic opportunities for the local people."

The Caucasus — which spans Georgia, Armenia, and Azerbaijan, and parts of Russia, Iran, and Turkey — is one of the most diverse regions in the world. Its Christian and Muslim communities speak more than forty indigenous languages, and its terrain ranges from glaciers and sixteen-thousand-foot mountains to grasslands and subtropical rainforests.

Stephens spends his summers leading teams of volunteers who build the trails, and in the fall he scouts routes for the following year — usually hiking around fifteen miles a day. In the winter, he's more often in his office, fundraising and planning for the next season. He expects the trail will be completed by 2024.

"The same things that drove me to be involved in journalism are driving me in this project: curiosity about other people, commitment to thinking about larger issues in a region, and belief in creative solutions," Stephens says.

While working on the trail recently, Stephens found himself in a village that had been continuously inhabited for thousands of years, before harsh winters and a lack of economic opportunity drove most families away. Over a meal, one of the villagers told Stephens and his crew of volunteers that he hoped the hikers coming through the village might give his grandkids a reason to move back. For Stephens, it was a concrete affirmation of the trail's mission — to ensure that the natural and cultural heritage of the region will be enjoyed by future generations.

"I hope that it helps people appreciate the incredible diversity of the region, and that it gives them pride in their culture and history. And I hope that, as we work to literally connect communities, people will begin to understand each other better," Stephens says. "We're hikers, but we're not just focused on the pretty landscape. There's so much more to this project."

— Kelley Freund

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ASK AN ALUM ON THE RECORD

Francesco Spampinato '06GSAS is a historian of contemporary art and an enthusiast of vinyl records. His 2017 book *Art Record Covers* explores the connections between fine art and mass media through a survey of over five hundred album covers.

COLUMBIA MAGAZINE: How does this book relate to your studies?

FRANCESCO SPAMPINATO: I'm interested in understanding what happens when art and pop culture converge. My book, which is the first to focus specifically on covers by modern and contemporary artists, examines the evolution of the record cover format in relation to artistic movements and styles.



CM: Talk about the relationship between pop culture and art.

FS: In the 1960s, the pop-art movement collapsed hierarchies between highbrow and lowbrow — between paintings and comic books, for example — and, in many ways, art and pop culture have been connected ever since. Musicians were inspired by visual artists to develop a new form of, let's say, avant-garde for the masses. Pop music was no longer just entertainment; it became a way to convey political messages and to reshape society. And musicians started to collaborate with pop artists, like Andy Warhol, Peter Blake, and Jann Haworth.

CM: Most people stream and download their music. Why are physical records still relevant?

FS: I think we somehow need to have a tangible experience with music. The mid-2010s saw a huge revival of vinyl records; US sales have grown every year for twelve years straight. For me, this comeback is about more than just nostalgia. The Internet has caused us to lose some of our previous ways of interacting with reality, and a record is a touchable and relatable thing.

CM: What makes a great album cover?

FS: It should make you stop and think critically about what you're looking at. A great cover by an artist isn't a mere transposition of his or her work but an image that adapts to the rules of media and marketing, and that also echoes the music. It maintains the intellectual dimension of the artist's oeuvre but in a different context.

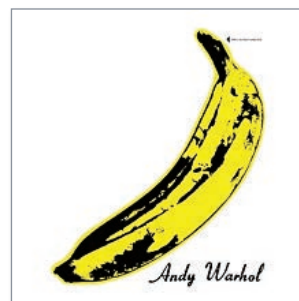
— Julia Joy

5 important album covers worth a second look

Record: *The Velvet Underground & Nico* (self-titled), 1967

Artist: Andy Warhol

"This is one of the most iconic covers of all time. Warhol's artwork suggests that even bananas can be repurposed as mass media — the image on the cover is a sticker that, once removed, reveals a peeled banana underneath. As the band's manager, Warhol also proposed a new role for the artist as a producer of mainstream culture."



Record: *Nervous Breakdown* (Black Flag), 1980

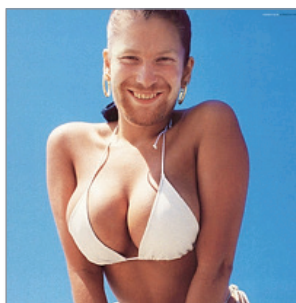
Artist: Raymond Pettibon

"Pettibon is an artist who really understands the relationship between art and music. His cover for Black Flag's first EP reflects the energy of punk and the compelling need of young people to rebel against the society of adults."

Record: *Artpop* (Lady Gaga), 2013

Artist: Jeff Koons

"In the late 1980s and early 1990s, Koons did a series of erotic photos and sculptures of himself with his then wife, the porn star Cicciolina. Gaga approached him to create something similar. She even references Koons in her song 'Applause' with the lyric, 'One second I'm a Koons, then suddenly the Koons is me.'"



Record: *Windowlicker* (Aphex Twin), 1999

Artist: Chris Cunningham

"The cover of this single is derived from Cunningham's music videos for Aphex Twin. I remember the joy of watching his work on MTV and then seeing it at major art shows. It was proof for me that art can originate in pop culture and then be appreciated and acknowledged by the art world."

Record: *Beat Bop* (Rammellzee vs. K-Rob), 1983

Artist: Jean-Michel Basquiat

"This is a fundamental record. First, because this ten-minute rap battle is a hip-hop milestone. Second, because Basquiat made the cover in his neo-expressionist style borrowed from infographics and cartoons. Third, because graffiti artist Rammellzee raps on it. Last but not least, because Basquiat produced it himself."



NETWORK

Show People

Since Richard Rodgers' '23CC, '54HON first teamed up with Oscar Hammerstein II '16CC, '54HON, hundreds of Columbians have performed, written, directed, produced, composed, and choreographed on the Great White Way. Here are seven alumni-affiliated shows in Broadway theaters right now.

Anastasia

Book written by Terrence McNally '60CC, directed by Darko Tresnjak '98SOA

Based on the animated film of the same name, McNally and Tresnjak's musical tells the story of a young amnesiac orphan who turns out to be the Grand Duchess Anastasia of Russia.

Angels in America: A Gay Fantasia on National Themes

Written by Tony Kushner '78CC, '10HON

This Tony Award-winning epic about the AIDS epidemic landed Kushner a Pulitzer Prize for drama in 1993. Now the two-part play is back on Broadway in a production starring Nathan Lane and Andrew Garfield.

Carousel

Music by Richard Rodgers, book and lyrics by Oscar Hammerstein II Rodgers and Hammerstein's musical about a carnival barker in dire straits is widely considered one of the best shows of the twentieth century. This spectacular revival features choreography by former Columbia student Justin Peck.

Frozen

Book by Jennifer Lee '05SOA

This musical fairy tale is the latest Disney phenomenon to make the leap from screen to stage. The show follows a princess as she searches for her sister in a winter wonderland, and features

twice as many musical numbers as Lee's animated film version.

Chicago

Written by John Kander '54GSAS and Fred Ebb '57GSAS

The current production of Kander and Ebb's classic show opened in 1996, making it the longest-running musical revival in Broadway history.

SpongeBob SquarePants: The Broadway Musical

Music supervision by Tom Kitt '96CC

Theatrical magic brings the world's most famous sponge to life as he fights to save the town of Bikini Bottom, accompanied by an impressive array of songs by David Bowie, John Legend, Cyndi Lauper, They Might Be Giants, and others.

Waitress

Directed by Diane Paulus '97SOA

Tony Award winner Paulus directs this feel-good musical about a pregnant waitress who pins her hopes and dreams on a pie-baking contest.

NEWSMAKERS

● Four Columbia alumni worked on a winner of the Grand Jury Prize at the Sundance Film Festival this year. Casting director **Jessica Daniels Schwarz '07SOA**, production designer **Markus Kirschner '09SOA**, post supervisor **Andrew Hauser '12SOA**, and co-producer **Rob Cristiano '13SOA** were all honored for their contributions to *The Miseducation of Cameron Post*. The film, starring Chloë Grace Moretz, is set in a gay conversion-therapy center in the early 1990s.

● **Huck Hodge '08GSAS** won the Charles Ives Living Award, which grants \$200,000 over a two-year period to a promising American composer. Hodge's work, which is inspired by light patterns in nature, has been performed at Carnegie Hall, Lincoln Center, and many festivals. He teaches composition at the University of Washington.

● **Wei Zhang '09GSAS** and **Andrea Young '06CC, '12GSAS** are recipients of 2018 Breakthrough Prizes, a group of awards commonly known as the Oscars of science, which are funded by Mark Zuckerberg's Silicon Valley Community Foundation. Zhang, a mathematics professor at MIT, and Young, a physicist at the University of California, Santa Barbara, each won in the New Horizons category, which recognizes extraordinary contributions by junior researchers.

● *Life and Nothing More*, a feature film written and directed by **Antonio Méndez Esparza '08SOA**, won the John Cassavetes Award at the 2018 Film Independent Spirit Awards. The Cassavetes award is given annually to the best feature made for under \$500,000. *Life and Nothing More* follows a young African-American boy searching for a connection with his absent father.

● **Radhika Jones '08GSAS** has been named editor in chief of *Vanity Fair* magazine. Jones, who has a PhD in comparative literature from Columbia, was previously the managing editor of the *Paris Review* and editorial director of the books department at the *New York Times*.

● *Junk*, a play by **Ayad Akhtar '02SOA**, won this year's Edward M. Kennedy Prize for Drama Inspired by American History. The play, which ran on Broadway from October 2017 through January 2018, explores how the reckless sales of junk bonds in the 1980s transformed our economy. Akhtar won the 2013 Pulitzer Prize for his last play, *Disgraced*.

— Carolina Castro



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“My hope is to help expand access to the study of journalism to those who couldn’t otherwise afford it.”

—DOROTHY BUTLER GILLIAM '61JRN,
1754 SOCIETY MEMBER

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BULLETIN

UNIVERSITY NEWS AND VIEWS

Diana and
P. Roy
Vagelos



VAGELOS GIFT WILL ELIMINATE DEBT FOR COLUMBIA MEDICAL STUDENTS

P. Roy Vagelos '54PS and Diana Vagelos '55BC recently gave \$250 million to the College of Physicians and Surgeons, with a major portion of the gift, \$150 million, funding an endowment that will help Columbia eliminate loans for medical students who qualify for financial aid.

"Roy and Diana Vagelos truly understand that having a scholarship fund of this magnitude puts medical school within reach of the most talented students, regardless of their ability to pay," says Lee Goldman, head of Columbia's medical campus.

Currently, about half of all Columbia medical students qualify for financial aid; many of them take out thirty thousand dollars or more per year in loans on top of

any grants or scholarships they may receive. But within the next five years or so, the new endowment is expected to generate enough income to replace all their loans with grants.

P. Roy Vagelos, a physician, scientist, and pharmaceutical executive who himself attended Columbia on a scholarship, says that his family's gift is intended to ensure that future graduates of the medical school can afford to pursue careers in areas like family medicine, pediatrics, and research, rather than being driven into more lucrative specialties for the sole purpose of paying off student debt.

"We want P&S graduates to be able to do what they really love to do," says Vagelos, who served as the

CEO of Merck & Co. from 1985 to 1994 and is currently chairman of Regeneron Pharmaceuticals.

The remainder of the Vageloses' \$250 million gift will support Columbia's precision-medicine programs, basic medical research, and the creation of an endowed professorship named for the Vageloses' longtime physician and friend Thomas P. Jacobs, who is a professor of clinical medicine at the College of Physicians and Surgeons.

The Vageloses, who met at Columbia in the 1950s, are among the University's most generous and active alumni. Roy chairs the Columbia University Irving Medical Center's Board of Advisors and co-chairs the University fundraising campaign; Diana is the vice chair of the Barnard Board of Trustees. The couple has been giving back to Columbia scholarship funds for more than five decades.

In honor of the Vageloses' lifetime of giving to the medical school — their total gifts now exceed \$310 million — the University recently renamed the school the Roy and Diana Vagelos College of Physicians and Surgeons.

"There are no more fitting names to have affiliated with our medical school than those of Roy and Diana Vagelos, who have made such tremendous contributions to science, medicine, and education," says President Lee C. Bollinger. "Generations of students and patients will benefit from the generosity of their spirit and the sweep of their vision."

"Generations of students and patients will benefit from the generosity of their spirit and the sweep of their vision."

ALEX HALLIDAY TO LEAD EARTH INSTITUTE

Alexander N. Halliday, a British geochemist known for his pioneering research on the origins of our solar system, joined Columbia this spring as director of its Earth Institute.

The current vice president of the UK Royal Society, Halliday taught at Oxford University before coming to Columbia and oversaw Oxford's science and engineering division from 2007 to 2015.



Alexander
Halliday

As the head of the Earth Institute, Halliday will lead one of the world's largest networks of researchers devoted to addressing problems rooted in man's relationship to the natural environment. It comprises thirty Columbia centers and more than five hundred full-time researchers in disciplines as diverse as earth science, climatology, global health, agriculture, urban planning, economics, law, and engineering.

In his own research, Halliday develops analytic techniques for determining

the age and celestial origins of chemical elements found deep within the earth, in meteorites, and on the surfaces of other planets. His work has reshaped scientists' understanding of how our solar system formed and evolved, as well as the natural processes that influence climate on earth. In recent years, it has helped

climate scientists understand the effects of increased carbon emissions; Halliday says that his commitment to climate-change response is part of what drew him to the Earth Institute.

"It is a critical time for us to expand the conversation about climate change and sustainability — not only among researchers in many

fields, but among everyone in our society," says Halliday, who received one of the American Geophysical Union's highest honors, the Harry H. Hess Medal, in 2016. "I could not be more enthusiastic about the opportunity to engage faculty, students, policymakers, and citizens in this work at Columbia."

Members
of the
women's
fencing
team
celebrate
their Ivy
title.



FENCING, SQUASH TEAMS WIN IVY LEAGUE TITLES

The Lions women's and men's fencing teams both topped the Ivies this year, with the women winning the league title outright and the men sharing the trophy with Harvard and Penn. At the Ivy League championship tournament in February, the Lions women swept the competition, winning all six of their matches on the strength of dominant performances by freshman Sylvie Binder, junior Iman Blow, and sophomore Violet Michel. By winning thirteen of her fourteen bouts in the foil division, Binder came home with the 2018 women's foil Ivy League individual championship. Blow went on to capture the NCAA women's title in foil the next month.

The men's fencing team pulled through dramatically in the final match of the Ivy League tournament, beating the formerly undefeated Penn squad to clinch a share of the title. They were led by freshman Sidarth Kumbla and sophomore Nolen Scruggs, both of whom were named first team All-Ivy.

The Columbia men's squash team also had a stellar year, winning its first Ivy League title and finishing the season ranked third nationally — its best finish ever. Led by senior Osama Khalifa, the Ivy League player of the year for the third consecutive season, and freshman Velavan Senthilkumar, who, along with Khalifa, made the All-American first team, the Lions went 16–2 overall and 8–1 in league play.

LISA ROSEN-METSCH NAMED DEAN OF GENERAL STUDIES

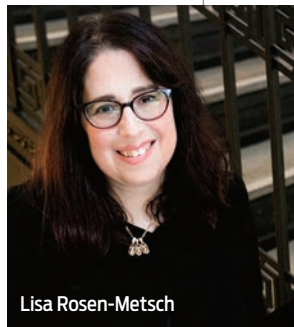
Lisa Rosen-Metsch '90GS, an internationally recognized AIDS researcher who most recently chaired the Mailman School of Public Health's Department of Sociomedical Sciences, has been named dean of the School of General Studies.

She succeeds Peter Awn, who led the School of General Studies for more than twenty years and continues to teach in the religion department.

A Brooklyn native raised by two New York City public-school teachers, Rosen-Metsch is an expert in the treatment and prevention of HIV/AIDS among populations with substance-abuse disorders. Before joining the Mailman School of Public Health in 2012, she was a professor at the University of Miami's Miller School of Medicine.

Rosen-Metsch is herself an alumna of the School of General Studies, which is the University's liberal-arts school for nontraditional undergraduates — those who have taken an academic break before attending college or who are pursuing dual degrees. In 1990, Rosen-Metsch earned dual bachelor's degrees through a joint program between Columbia and the Jewish Theological Seminary.

Rosen-Metsch says that her interest in AIDS prevention arose from her experience at the School of General Studies, where she interned alongside Columbia AIDS researchers. "My years as a General Studies student were transformative and extraordinary," she said. "The potential to help navigate Columbia's future by returning to the school that gave me so much is humbling, exciting, and inspiring."



Lisa Rosen-Metsch

COLUMBIA TO HOST OBAMA FOUNDATION SCHOLARS

Columbia University announced this spring that it has partnered with the Obama Foundation, created by former president Barack Obama '83CC and former first lady Michelle Obama, to host an annual cohort of Obama Foundation Scholars.

"These will be rising leaders from around the world, for whom we will design a special yearlong resident program of education and training, on full scholarship, after which the scholars will return home and continue their work," wrote President Lee C. Bollinger in an e-mail announcing the program on March 23.

About a dozen Obama Foundation Scholars will arrive this fall; in subsequent years, the University will host a larger number of scholars selected through an open application process.

The residency program is part of the Columbia World Projects (CWP) initiative, which Bollinger established last year to support academic endeavors that address pressing global problems.

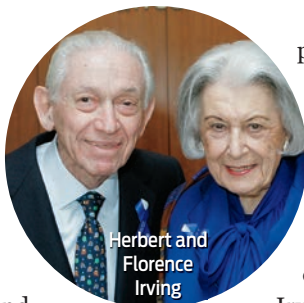
"The Obama Foundation Scholars program will be one aspect of what we hope is a vibrant intellectual life at CWP, with classes, fellowships, conferences, and publications," Bollinger wrote. "Our special area of interest is studying the ways in which academic research is successfully (or unsuccessfully) implemented, so that people outside universities can benefit from this knowledge."

IRVING FAMILY GIVES \$700 MILLION FOR CANCER RESEARCH AND CARE

Columbia University and NewYork-Presbyterian Hospital recently announced that Florence Irving and her late husband, Herbert Irving, have given \$700 million to advance cancer research and clinical care.

The bequest, which includes \$600 million in new funds along with previously announced pledges, brings the Irvings' total donations to Columbia and NewYork-Presbyterian to more than \$900 million over the past three decades. (The medical campus shared by the two institutions in Upper Manhattan was renamed the Columbia University Irving Medical Center in 2016.)

The Irvings' gift is the largest ever to CUIMC; it is expected to have a



Herbert and Florence Irving

profound impact on cancer research and clinical care. The new funds will support the recruitment of top cancer scientists and clinical specialists, as well as the expansion of CUIMC's Herbert

Irving Comprehensive Cancer Center, where more than four thousand new patients are treated each year.

Florence Irving says that she and Herbert, who died in 2016 after a long and successful career at the helm of the food-distribution company Sysco, always took great pride in their association with CUIMC.

"It meant everything to him to be able to support world-class research and caregiving that makes a difference in people's lives," she says.



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BOOKS

Speak No Evil

By Uzodinma Iweala '11PS (HarperCollins)

Thirteen years ago, Uzodinma Iweala '11PS burst onto the literary scene with *Beasts of No Nation*, a daring, gut-twisting novel about a child soldier in an unnamed African country. Written in pidgin English, the book felt so authentic that many wondered if Iweala was writing from his own experience. In fact, Iweala is the son of a prominent Nigerian doctor and was raised in a tony suburb of Washington, DC. The novel emerged not from some unspeakable childhood trauma but from Iweala's senior thesis at Harvard.

Iweala's new novel, *Speak No Evil*, seems to hew closer to the contours of his own life.

It follows a high-achieving Nigerian-American teenager at a Washington prep school through the difficult process of coming out to conservative immigrant parents. Though the novel lacks the freewheeling confidence and bold experimentation of Iweala's debut, *Speak No Evil* showcases the author's adeptness at weaving vivid, emotional stories about coming of age in a world often unsafe for young Black men.

When we first meet Niru, the book's narrator, he is living "an uncomplicated life with my Harvard early admission and two proud parents." But when his friend Meredith comes on to him, Niru shuts down — in

some ways, this is the culmination of a lifetime of unwanted touch: "The white kids used to touch me all the time when I was younger, like they owned me." Meredith's touch is different: Niru *wants* to want it. But finally he admits that, despite every effort, he doesn't: "Meredith, I think — I'm gay."

Meredith is sympathetic to a fault. Trying to give him a helpful push, she downloads the dating app Grindr onto Niru's phone. When Niru's father finds it — and the notifications populating the home screen from men who want to date his son — the confrontation is swift and violent. "You want to go and do gay marriage, is that what you want?" his father

yells, as he twists Niru's ear and slams his head into the kitchen table.

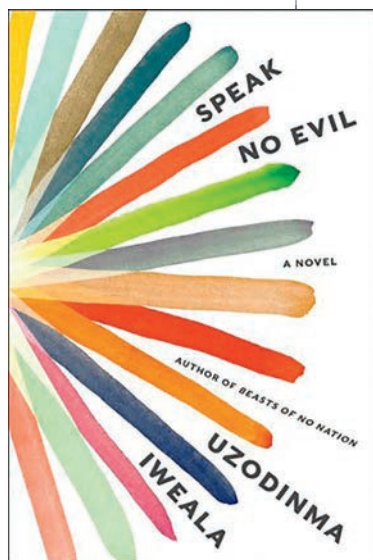
The reaction is shocking, but also complicated. Niru's father has been responsible for teaching his son how to be safe in a country that fears him. He's long told Niru that "the safest place for a man to be, especially in America, is inside his own house." It's no longer clear to Niru if that's true. But Niru doesn't feel at home anywhere else, either — in Meredith's liberal, accepting house, he chokes down turkey sandwiches and longs for his mother's spicy chicken-pepper soup. Later, in bed with a man for the first time, Niru's knees buckle and he bolts, running back to his family's kitchen table.

Perhaps the most illuminating passages come when Niru's father squirrels him away to Nigeria for a horrifying dose of "spiritual counseling and deliverance." It's not Niru's first trip to the motherland, but now he must reckon with the forces that have shaped his father — a "true village boy," who returns home burdened with the pressure of proving that his life in America has been a success (a gay son, clearly, is not part of the plan). Niru's vaunted brother, a medical student, amusingly diagnoses the phenomenon as Nigeriatoma: "an acute swelling of ego and pride that affects diaspora Nigerian men."

The book ends with a twist, narrated not by Niru but by Meredith, a strange choice — in her voice, naturally, the story becomes about her. "I am always someone's accessory, someone's afterthought, the supporting actress in another person's drama," she says. In this case, that's exactly what she is. The drama is Niru's, and the last chapter a sobering reminder that for someone like him, tragedy might be lurking anywhere.

Speak No Evil has been anticipated for over a decade — in between novels, Iweala worked for an NGO in Nigeria and earned a medical degree at Columbia. But though the demons in his new novel are subtler than the gun-wielding warmongers of *Beasts of No Nation*, they are there nonetheless, and equally harrowing.

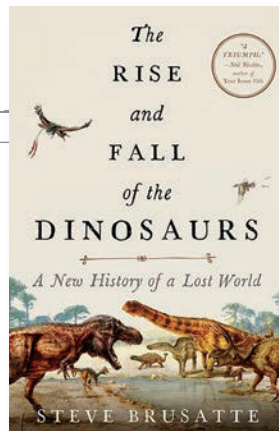
— Rebecca Shapiro



EXCERPT

The Rise and Fall of the Dinosaurs

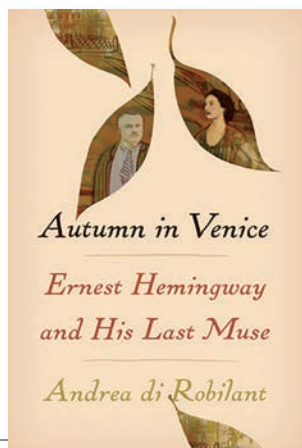
By **Steve Brusatte** '13GSAS A rising star in paleontology, Brusatte has discovered ten new species of dinosaurs and led several expeditions. His first book is a narrative history of dinosaurs — from the earliest vertebrates to the giant asteroid that took out *Tyrannosaurus rex*.



[CAT] scans tell us quite a bit about our patient. First off, Rex had a distinctive brain. It didn't look anything like our brain but was more of a long tube with a slight kink at its back, surrounded by an extensive network of sinuses. It's also a relatively large brain, at least for a dinosaur, which hints that *T. rex* was fairly intelligent. Now, measuring intelligence is riddled with uncertainties, even for humans: just think of all of the IQ tests, exams, SAT scores, and other things that we use to try to assess how smart people are. However, there is a straightforward measure that scientists use to roughly compare the intelligence of different animals. It's called the encephalization quotient (EQ). It's basically a measure of the relative size of the brain compared to the size of the body (because, after all, bigger animals have bigger brains simply because of their body size: elephants have bigger brains than us but are not more intelligent). The largest tyrannosaurs like *T. rex* had an EQ in the range of 2.0 to 2.4. By comparison, our EQ is about 7.5, dolphins come in around 4.0 to 4.5, chimps at about 2.2 to 2.5, dogs and cats are in the 1.0 to 1.2 range, and mice and rats languish around 0.5. Based on these numbers, we can say that Rex was roughly as smart as a chimp and more intelligent than dogs and cats. That's a whole lot smarter than the dinosaurs of stereotype.

Autumn in Venice

By **Andrea di Robilant** '79CC, '80SIPA (Knopf)



Tolstoy famously said it about families, but the observation applies equally to marriages: all the happy ones are alike, but each unhappy marriage is unhappy in its own way. This truth is amply demonstrated in Andrea di Robilant's meticulously

researched account of Ernest Hemingway's years-long obsession with his "last muse," Adriana Ivancich, a beautiful Italian woman he met when she was eighteen and he a month shy of fifty. Theirs was a puerile relationship that was absorbed, enabled, and eventually outlasted by the much more compelling one

between Hemingway and his fourth wife, Mary Welsh Hemingway.

Drawing heavily on personal letters and journals, di Robilant '79CC, '80SIPA, whose great-uncle was part of Hemingway's social circle in Venice, details every corner of the Hemingways' painful fifteen-year union. Mary's miseries are at times almost breathtaking and include a life-threatening miscarriage and near-fatal car and plane crashes, as well as her husband's physical and mental-health crises, infidelity, megalomania, epic self-absorption, violence, emotional abuse, and, finally, abandonment of her through suicide. And nearly all of this behavior is accompanied by the consumption of truly staggering quantities of alcohol.

The couple had been married for two years when, in 1948, they traveled to Venice from their home in Cuba. Widely regarded as past his prime, Hemingway was suffering from writer's block and hadn't published a book in nearly a decade. One day, on a hunting expedition (the writer's notorious love affair with guns and killing animals is on gruesome display throughout this book), Hemingway is introduced to Adriana, the teenage daughter of an aristocratic local family. Described by di Robilant as possessing "jet black hair, beautiful dark eyes, slender legs, and a svelte, youthful silhouette," the girl, naive and not yet fluent in English, almost instantly attracts the attention of the older man.

An aging male artist besotted with a young beauty who

BOOKS

revives his dormant creativity? It's a story as old as the green hills of Africa. Poor Mary, a former globetrotting journalist who gave up her career to be "simply [a] wife," is condemned to watch from the sidelines as her beloved Papa pines after this Botticelli angel — without, in di Robilant's firm opinion, ever consummating the relationship — for the next eight years. Adriana fulfills her designated role, shaking Papa out of his doldrums and inspiring his next book, *Across the River and into the Trees*, whose main female character is a thinly disguised version of her. When Hemingway returns to Cuba, Adriana and her family join him, taking up residence at Finca Vigía, his estate near Havana. There Papa, his creative juices still flowing, thanks to the presence of his youthful muse, cranks out his last great masterwork, *The Old Man and the Sea*.

In between her frequent attempts to keep her husband's cruelty in check, Mary makes a feeble attempt or two to assert herself, writing to Hemingway after a particularly awful episode that she's had enough and wants a divorce. But he easily talks her out of it with a "Stick with me, Kitten." (Other Hemingway biographies have suggested that he feared the cost of divorce, telling friends it was cheaper to stay married.) As mistreated as she is, Mary loves Papa, and she strikes a grim and all-too-familiar bargain: she'll tolerate Adriana's presence and its attendant humiliation because it is "a price she was

willing to pay if it made her husband happy and a nicer person to be around."

Passages like that are not only excruciating to read, but they also trigger a kind of cognitive dissonance from the vantage point of 2018. The Hemingwayesque way of life feels so alien and removed from this #MeToo moment of women's empowerment and the rejection of a host of negative "isms" that the Nobel Prize winner embodies. What can we learn from reading about a macho, egomaniacal, lion-killing entitled white male whose women are relegated to such hoary supporting roles as long-suffering wife and sprightly muse — and who, at fifty, loses his head over the latter like a dopey adolescent?

The answer isn't exactly clear, except that the man's best work, against all expectation, has managed to remain great and serves as an irreplaceable guide to technique for any aspiring fiction writer. And the Hemingway mystique continues to exert a powerful hold on our collective imagination, steadily spawning new biographies, memoirs, and even novels (see the best-selling *The Paris Wife*) — not to mention a minor tourism industry in places as far-flung as Paris, Havana, Key West, and Ketchum, Idaho. *Autumn in Venice*, the latest contribution to this canon, may showcase Ernest Hemingway, at least in his later years, as Exhibit A in the Museum of Lousy Human Beings, but his fans will savor every syllable.

— Lorraine Glennon

The Mars Room

By Rachel Kushner '01SOA (Scribner)

In a recent interview with the *New Yorker*, Rachel Kushner '01SOA said that most incarcerated men and women she has known "go to prison not on account of their irreducible uniqueness as people but because they are part of a marginalized sector of the population who never had a chance, who were slated for it early on." Her third novel, *The Mars Room*, offers a crushing account of one such ordinary life on the margins.



At twenty-nine, Romy Hall is serving two consecutive life sentences at Stanville Women's Correctional Facility in California. Romy — who spent her neglected San Francisco adolescence drinking, stealing, and getting high — grew up to make her living as a stripper at a seedy club that gives the book its title. When a Mars Room regular starts stalking her, Romy kills him in what the courts deem a murder rather than self-defense. Her arrest leaves her

five-year-old son in the precarious custody of her mother, whom Romy detests. Throughout the telling of this bleak backstory, Kushner resists painting her protagonist as singular or special. The book neither flinches nor sensationalizes, guiding us from Romy's past to the darkest corners of the prison-industrial complex with a sure and powerful hand.

Like Kushner's previous novels, *Telex from Cuba* and *The Flamethrowers*, *The Mars Room* takes on multiple voices and perspectives. This variety lends the book, for all its focus on captivity, a tremendous freedom and range of movement. We inhabit the rural landscape surrounding Stanville through Gordon Hauser, Romy's civilian GED instructor; the streets of Los Angeles through corrupt cop Doc Richards, now serving time; and solitary confinement through Sammy Fernandez, a repeat offender and Romy's eventual "cellie." Interspersed with these narratives are excerpts from found documents, appearing without preface or commentary. Lists of visitor regulations — "No high fives . . . Keep crying to a minimum" — appear, as do passages from Ted "Unabomber" Kaczynski's diaries, which Gordon reads while adjusting to the isolated valley. These interludes add texture to the novel, while hinting at questions that vex critics of

the criminal-justice system: Where is the line between policing crime and condemning poverty? What sort of life on the outside is even available to the formerly incarcerated? How do we reconcile the many chances that protect some with the swift penalties for others?

Despite this wide scope, the novel belongs to Romy. Her frank, unsentimental voice renders prison in gut-wrenching specifics: "The clock on the wall had a red wedge . . . for the women who could not tell time," she says. "Everything in prison is addressed to the woman for whom the red wedge is painted on the clock face, the imbecile." Yet Romy's intelligence and humanity — along with those of her fellow inmates — are undeniable. Even as she grows nostalgic, as any caged human might, her memories, laced with irony and self-awareness, never oversimplify the past.

Romy's voice would have carried me easily through a long, uneventful diary of life behind bars. But troubling news about her son soon churns the plot, driving her to urgent action and an ending both jaw-dropping and inevitable. Kushner has written a potent tragedy, not by crafting a heroine who could have gone on to do great things, but by gently insisting on the worth of an unremarkable life. At times Romy appears not only ordinary but even invisible: her victim knows her only by her stage name; Gordon finds no trace of her on Google. But *The Mars Room* places her front and center, someone Kushner's lucky readers can't help but see clearly and won't soon forget.

— *Mia Alvar '07SOA*

READING LIST

New and noteworthy releases

THE WIFE BETWEEN US

by Greer Hendricks '94JRN and Sarah Pekkanen

Don't expect another thriller about a jealous ex-wife. As the jacket copy warns, it's best to assume nothing. Hendricks and Pekkanen first met a decade ago, when Hendricks became Pekkanen's editor at Simon & Schuster. Their first novel as a writing team is a wickedly clever mind-bender, in the tradition of *Gone Girl* and *The Girl on the Train*.

FEAST

by Hannah Howard '09CC Howard is a food writer, a recipe developer, and also a recovering anorexic. In her memoir, she writes about being driven by two competing urges: her insatiable appetite and her desperate desire to stay thin. Howard's account of her time at Columbia, when she was simultaneously in the thrall of her illness and working as a hostess at some of New York's most high-profile restaurants, is particularly moving.

DIRECTORATE S

by Steve Coll Columbia Journalism School dean Steve Coll won a Pulitzer Prize for his last book, *Ghost Wars*, which chronicled US involvement in Afghanistan from the Soviet invasion through September 11, 2001. Here, he picks up the narrative,

writing about our efforts to fight al-Qaeda and the Taliban and capture Osama bin Laden. A feat of both investigative reporting and storytelling, Coll's book is vitally important to understanding America's place in the world in the early twenty-first century.

CENSUS

by Jesse Ball '04SOA Ball's eighth novel is also his most personal. Inspired by his brother Abram, who had Down syndrome, *Census* is the story of a father and his disabled son traveling across the country for the father's job as a census taker. Like Cormac McCarthy's *The Road*, the novel takes place in a futuristic dystopia and is imbued with a dark surrealism. But the focal point is clearly the very relatable love between father and son.

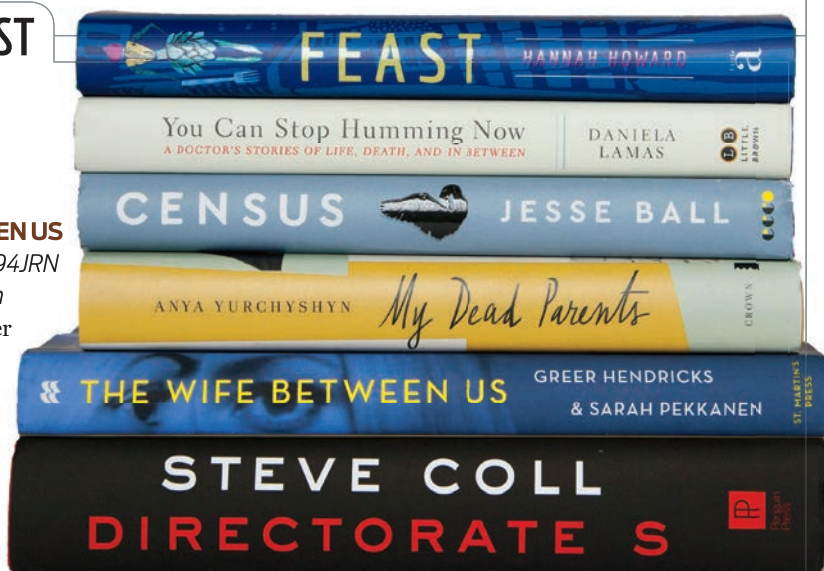
MY DEAD PARENTS

by Anya Yurchyshyn '10SOA When Anya Yurchyshyn was sixteen, her father was killed in a mysterious car accident in his native Ukraine. Sixteen years after that, her mother

also died, of complications from alcoholism. Yurchyshyn wasn't close with her parents — her father was abusive and her mother enabled him — but after they died, she found an illuminating stash of their old letters and photographs. In her memoir, Yurchyshyn traces her parents' lives, trying to understand them better — especially the circumstances surrounding her father's sudden death.

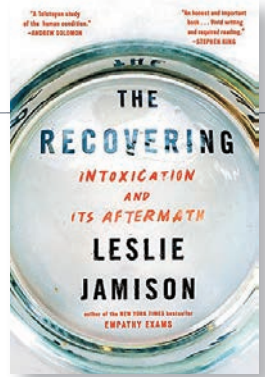
YOU CAN STOP HUMMING NOW

by Daniela Lamas '08PS As a critical-care doctor, Lamas treats people at their sickest. While many medical narratives focus on the ways that technology can save lives, Lamas is concerned with what happens to those patients afterward. With a journalistic flair (Lamas was a reporter before going to medical school), she writes about a salesman who found a kidney donor on social media, an elderly man whose heart was replaced by a battery-operated pump, and other remarkable examples of modern medicine at work.



Sobering Words

In her new memoir, *The Recovering: Intoxication and Its Aftermath*, Leslie Jamison, the director of the nonfiction concentration in the graduate writing program at Columbia's School of the Arts, explores the links between alcohol addiction, recovery, and creativity



Columbia Magazine: Tell us a little about the genesis of the book.

Leslie Jamison: Alcohol was a dominant force in my life for years, and when I stopped drinking at twenty-seven I decided to interrogate and document what addiction and recovery had been like for me. I wanted to bring my story into chorus with the stories of others, so I incorporated academic research on famous writers who had struggled with addiction and also interviewed other men and women in recovery communities.

CM: You say that as a young writer you idolized legendary drinkers like Faulkner, Fitzgerald, and Hemingway and felt quite invested in the relationship between creativity and addiction.

LJ: Yes, in some ways I wrote the book for selfish reasons. I wanted to believe I could be just as creative in my sobriety. The book explores how authors including David Foster Wallace, John Berryman, and William S. Burroughs got sober — or tried to get sober — and how sobriety became part of their creative process. My initial desire was to prove to myself and

to the world that it's all a big myth: that you don't need to be inside a dysfunctionality to access your most creative self. I wanted to uncouple all these links between dysfunctionality and meaning-making, addiction and creativity, darkness and truth, but what I found was something much more complicated and vexed.

CM: In what way?

LJ: Well, Charles Jackson and John Berryman both tried to write from and about sobriety, and neither one fully succeeded; and David Foster Wallace wrote a beautiful book about recovery, but he also committed suicide in his forties. There is a relationship between addiction and creativity; people have created incredible work from that space of thrall and darkness. But that isn't the only way work can be made.

CM: You say that female alcoholics rarely get to strike “the same rogue silhouettes as male ones.” Can you talk about these gender differences?

LJ: Very similar addictions get narrated in very different ways depending on all kinds of variables, like gender, race, and class. Stories of appealing roguishness seem to attach more readily to male addictions. Their drinking is often seen as proof of a certain authenticity or inner depth. Women's addictions are often narrated as a form of hysteria or melodrama, or as an abnegation of their role as caregivers. They are the archetypal bad mothers.

CM: In the book you talk about having to resist your “hunger for a story larger than my own, with taller buildings and sharper knives.” Is there a tendency

toward dramatic inflation when it comes to addiction narratives?

LJ: In the literary world there's a premium put on originality. It's as if you have to up the ante to make your story worth telling. I resist that idea not only because it can lead to exaggeration or fabrication, but also because it implies that only extraordinary lives are worth narrating. Most experiences are very un-extraordinary, but that doesn't mean there's not a meaningful narrative lying inside them.

CM: That belief must be pretty central to your life as a teacher.

LJ: One of the most frequent anxieties students articulate when they write personal essays is that nobody would care about their lives. But I tell them writing doesn't have to be some hubristic act of asserting that your life has been more extraordinary than someone else's. It's about finding the meaning inside the experiences you have at your disposal. In fact, there is something about unoriginality that can be a source of power rather than shame. In recovery communities, storytelling is absolutely central, and the story is seen as a gift or offering. What matters isn't telling a unique story, it's telling a story that has been told before and will be told again. Cliché sometimes exposes us to the truth of our lives, and this book, in many ways, is a celebration of the ordinary story.

CM: Your book has already been highly praised. Have you convinced yourself that you are a better writer without alcohol than with it?

LJ: Well, the book is the artifact of what it's trying to prove. In that sense, I do feel proud of it.

— Sally Lee

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REMODELING AND CONSTRUCTION: Landis Architects/Builders, cofounded by licensed architect Chris Landis '80GSAPP, has been transforming Washington, DC-area homes since 1990. This residential design/build firm believes that a remodeled space should enhance a home's original aesthetic, improve its function, and add long-term value. Whenever possible, the company strives to improve durability and energy efficiency. Consulting via www.landisconstruction.com or call 202-726-3777.

SAT/ACT & SSAT/ISEE TUTORING: Robert Kohen, PhD, Harvard and Columbia grad, provides individualized tutoring for the SAT/ACT and SSAT/ISEE in Manhattan and online. 212-658-0834; robertkohen@koheneducationalservices.com; www.koheneducationalservices.com.

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NEW YORK CITY: 4BR historic townhouse across from Carl Schurz Park on E. 87th Street. Long-term rent or sale. Easy access to FDR Drive and UES private schools. Contact: Robert Meister, 917-992-5195 or ram121@columbia.edu.

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ROME: Spacious, stylish, renovated apartment near St. John Lateran. Two double bedrooms, two baths, Wi-Fi, elevator. \$850/week. lm603@columbia.edu, 212-867-0489. www.casacleme.com.

TUSCANY: Gorgeous apartment in lovely hilltop village of Casole d'Elsa near Siena. 2BR, 1BA, sleeps 4-6. Beautifully appointed. Wi-Fi. Large eat-in kitchen, private garden overlooks 11th-century church. \$650-750/week. Columbia alum owner Lyn '90PH: 404-274-8287, lyn.finelli@gmail.com, or see photos and details at www.imagesoftuscany.com.

BOOKS

CAREER-LAUNCH HELP, ALL MAJORS: *Dean Lazar's Golden Guide*, by Dartmouth and CU/GSAS alum. Go to Amazon or www.lydialazar.com.

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FINALS

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Some college memories are priceless; others end up on eBay. Check out a few of the Columbia collectibles that were recently put up for auction.



- Embroidered pillow that features a sampler of Columbia sites. \$175



- 1967 issue of *Heights*, a campus newspaper that the seller describes as being "suffused with a radical energy and a palpable distrust of the school's administration." \$550



- Beer stein with Columbia's seal on the lid. \$400



- Tobacco silk from 1910 honoring the track team. \$32



- Cheerleading megaphone of the Old Blue, an amateur rugby club founded by Columbia alumni in the 1960s. \$125



- Medal for participation in Columbia's Division of War Research during World War II. \$349.99



- Felt pennant from the 1920s. \$79.99



- Specimens of yellow pond lily and convallaria root preserved by the Columbia College of Pharmacy in 1907. \$55



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