

WINTER 2019-20

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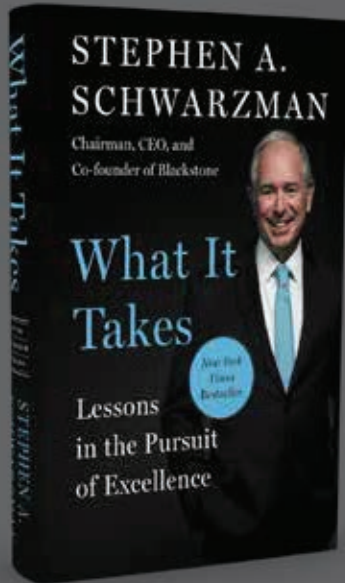
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COLUMBIA

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OBAMA ORAL HISTORY

Nothing would have delighted my father — Allan Nevins '60HON, who founded Columbia's Oral History Research Office in 1948 — more than the glorious news of the Columbia Center for Oral History Research (CCOHR) undertaking the Obama oral-history project ("Lift Every Voice," Fall 2019). It has to be, from all standpoints, one of the richest and most complex areas of research in the past fifty years.

As an outlander (Barnard '47) it was only by chance that I came upon your excellent article detailing this enterprise. In it you make vividly clear the importance of oral history in preserving "memory, experience, and shifting values," to quote CCOHR director Mary Marshall Clark. Congratulations!

Meredith Nevins Mayer
'47BC
New York, NY

Your article notes that the Obama oral-history project will include interviews with

critics of the administration. But it pulls its punches when delineating topics of interest.

As someone who knocked on doors in Ohio for the 2008 Obama campaign and jumped for joy when he was elected for precisely the reasons you start the article with — e.g., his historic candidacy and his rhetorical links to the civil-rights movement — I hope the project will address the administration's heartbreaking conservatism and extremism in its use of drones to kill people merely accused of crimes (and in the case of Anwar al-Awlaki, his teenage son as well). I hope it will address the fact that Obama left office with the most spied-on constituency in history, which we know thanks to Edward Snowden. I suggest Cornel West as a "narrator" to describe such contradictions.

Joel Whitney '02SOA
Brooklyn, NY

Most of the four hundred people chosen to be interviewed for the Obama oral-history project will undoubtedly

sing his praises. But serious historians should be willing to interview at least some people who can shed light on Obama's Stalin-like use of the CIA, FBI, and IRS to wage war against his political enemies. The perspective of former US attorney general Michael Mukasey '63CC would be valuable.

Objective historians should also probe Obama's Benghazi narrative, his many arbitrary amendments to the so-called Affordable Care Act, his providing aid and comfort to Iran, and his doubling of the national debt from \$10 to \$20 trillion in just eight years.

It would also be fascinating to hear from any of Obama's classmates and professors who may remember him. What classes did he attend, and what were his grades? Why doesn't he release his transcript? Once a person has been elected president twice, why would he care if the public learned that he flunked geology in 1983?

Jim O'Brien '66CC
Maitland, FL

FEEDBACK

MOST POPULAR STORIES ONLINE IN 2019



1. "Radical Solutions for Baldness"
SPRING 2019



2. "Plastic, Plastic Everywhere"
SUMMER 2019



3. "Let's Talk about Obama"
FALL 2019

Our next issue won't be published until May 2020. But no fear, we'll be posting fresh articles every month at magazine.columbia.edu



From the poster collection of Dwight Cleveland '82CC, clockwise from left: *Goldfinger* (Japan, 1964), *Rocky* (Poland, 1976), and *Born to Dance* (US, 1936).

There has been some skepticism about President Obama's time at Columbia. I think that interviews with his friends and professors and the release of his transcript would put to rest lingering questions about his past and where he came from. Without it, the rumors will just start all over again!

Paul O'Connor '71BUS
Milton, MA

Rumors that Barack Obama never attended Columbia began with his candidacy for president in 2007, along with demands that he release his college transcript. The University released an official statement at that time, which we recently reconfirmed. It reads: "Barack Obama applied for and was granted

admission to Columbia College as a transfer student in 1981. He enrolled for the fall term of that year as a political science major. With the conclusion of the spring semester of 1983, Obama completed the requirements for a Bachelor of Arts degree in political science and graduated with his class." — Ed.

COMING ATTRACTIONS

We just happened to be headed to Palm Beach in late September when we read the Fall 2019 issue of *Columbia Magazine*, with the feature about Dwight Cleveland's film-poster collection, selections from which were on display at the Norton Museum of Art ("Poster Pundit," Network). How could we not go see it for ourselves?

It was wonderful! Thank you for printing the article and turning us on to this museum, and thanks to Dwight Cleveland for his generosity.

Jeanne Guglielmo '85NRS
Brookline, MA

MAGNETIC INTELLECT

As a graduate of Columbia College, I am as eager as anyone else to claim credit for its faculty's achievements — as you did when you tied I. I. Rabi's Nobel Prize-winning advances in nuclear magnetic resonance, or NMR, to the development of magnetic-resonance imaging, or MRI ("The Mind Readers," Fall 2019). But it is my opinion that all or

most of the credit for the invention of the concept and instrumentation of MRI belongs to Paul C. Lauterbur, who shared the Nobel Prize in Physiology or Medicine in 2003.

My first university faculty position was at the State University of New York at Stony Brook, at whose brand-new campus Paul and I arrived simultaneously. We had adjacent offices, and because we both worked on magnetic resonance (he in NMR and I in electron spin resonance, or ESR), we shared a magnetically shielded laboratory room. Therefore, we not only discussed the methodology he had in mind at the time, but I saw him carry out some of his earliest experiments on biological tissues.

Due to the size of the containers for samples to be studied with the NMR instruments of those days (they were thin glass tubes), he was forced to use tiny creatures such as mosquitoes or whatever other varmints, or pieces thereof, were available. Later he designed and built modified instrumentation that allowed for larger research samples. Unfortu-

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	SIPA	School of International and Public Affairs
HON	(Honorary degree)	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		

COURTESY OF DWIGHT CLEVELAND

nately for the purpose of this story, I lost track of him and his exciting experiments, because I moved to Brookhaven National Laboratory, where I spent my time in X-ray and neutron-diffraction studies. The rest is now in the history books.

Ivan Bernal '63GSAS
Houston, TX

SPREADING THE WORD

David J. Craig's interview with Shahid Naeem, the chair of Columbia's Department of Ecology, Evolution, and Environmental Biology, does a great job of highlighting the issues we face as a result of biodiversity loss ("Life on the Brink," Fall 2019). When

asked about solutions, Naeem focuses on education and changing behaviors — namely those of farmers, both locally and on an industrial scale.

I think the idea that education can make a difference can be extended beyond agriculturalists. In the same way that broadly educating the global community has elevated climate change to one of the primary issues of our day (think Greta Thunberg), I think that helping everyday people understand how loss of biodiversity directly impacts their lives will begin to bring the issue the attention it needs.

When I turned the page and read about Tamar Mitts's research into the data

behind ISIS recruitment on social media ("How ISIS really recruits its members," Explorations, Fall 2019), it occurred to me that there were lessons to be drawn from this research that might be applied to educating people about biodiversity.

I think it's a relatively straightforward exercise to make people understand the threat the world faces from the loss of species and ecosystems. The challenge is making people understand the threat's immediacy. If a social-media campaign promising fulfillment of basic needs can cause them to join ISIS, could one also convince the global community to fight to preserve what eco-

systems still can be saved? Maybe social media, data science, and human social behavior hold the answer to saving the planet.

Haig Buchakjian '17BUS
Franklin Lakes, NJ

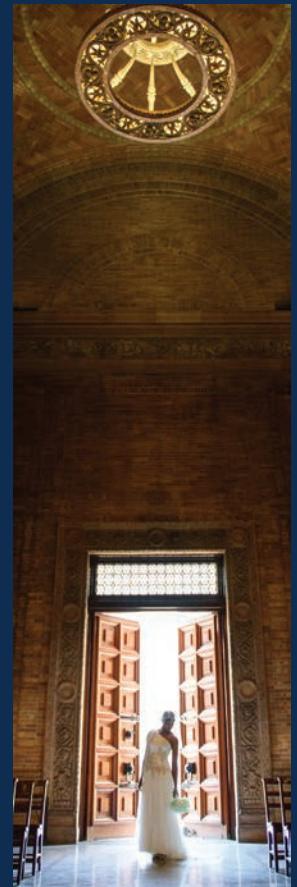
Regarding your Explorations article about research led by Columbia political scientist Tamar Mitts into ISIS recruitment strategies, I can certainly understand the need to research the characteristics of social-media messages that radical groups use and which are the most effective. However, doesn't publicizing the results of such studies help educate the very people that we are working against? Yes, there

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FEEDBACK

is freedom of speech. But I am sure there is information much less sensitive than this that is being kept out of the public domain.

Ed Gerstenhaber '68SEAS
Murrysville, PA

Tamar Mitts responds:

This is an important ethical consideration. Propaganda has long been the focus of academic research, but there is also a compelling public-policy justification for studying the effectiveness of ISIS online propaganda. Governments and technology companies are currently grappling with what sort of content to prohibit on social-media platforms. Policymakers have primarily focused on violent content or content produced by extremist actors that might incite offline violence. Our research highlights the need to consider other types of appeals, as these seem to be no less (and possibly even more) effective at attracting support for extremist groups.

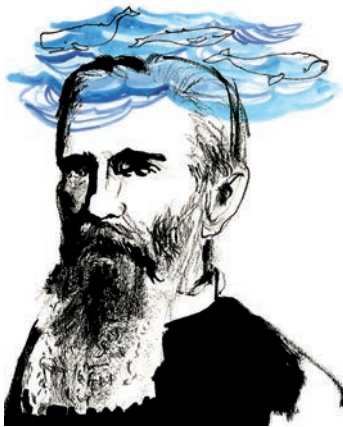
EXPERIENCE REQUIRED?

I was perplexed about why Columbia's administration would select a candidate to lead the School of Social Work who has neither an advanced degree in social work nor extensive experience in the field ("Melissa Begg named dean of School of Social Work," Bulletin, Fall 2019).

I graduated from the School of Social Work in 1984 and spent the subsequent decades in a variety of positions in the field. What I valued at Columbia was the mentorship of professors

who had education and direct experience in social work, who understood its real-world complexities well enough to prepare me for the road ahead. This expertise can only come from having trained and worked as a social worker.

Maxine L. Angell '84SW
Saint Helena, CA

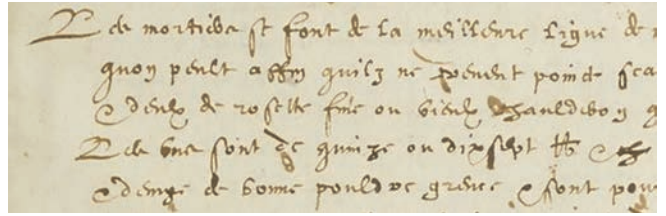


MELVILLE'S FRESHMAN YEAR

Thank you for your article about Herman Melville and the part that Columbia English instructor Raymond Weaver played in rescuing his reputation ("Melville at 200," College Walk, Fall 2019).

You may be interested to learn that there is another Melville connection to Columbia: the scholar John P. Runden wrote an article for *Melville Society Extracts* in 1981 that established that the author, along with his brother Gansevoort, attended Columbia Grammar School for a year beginning in 1829, when he was ten years old. According to school records, he was pupil number 162.

Arthur Fell '68LAW
Montpellier, France



This sixteenth-century script suggests a male author.

MAN-USCRIPT

The Fall 2019 issue was a wonderful read as always! Kudos from a disinterested rival alum. One quick question about the College Walk article "Try Burnt Oysters," about an effort by Columbia's Making and Knowing Project (based in the Center for Science and Society) to publish a digital edition of an anonymous French artisan's manuscript from around the year 1500: if the name of the artisan is unknown, how did the researchers discern that the person was male? Weren't many of the preparers and handlers of artistic materials at that time female household or hired workers?

Barbara Irving
Monsey, NY

Naomi Rosenkranz,
assistant director of the Making and Knowing Project, responds:

During this period, men and women were taught different scripts; the specific Middle French script used in the document is a male script. Additionally, details, descriptions, and references given in the manuscript strongly suggest that the author-practitioner was traveling across parts of Europe. Travel of this kind would have been highly unlikely for a woman at this time.

GRAMMAR SCHOOLED

Each season I look forward to the thoughtful and engaging articles in *Columbia Magazine*. This past issue felt like a special surprise, because when I read the Feedback section, I was treated to a full half-page rebuttal by the editor regarding the decision to go with a singular verb rather than a plural one in a sentence on the prior issue's cover.

Not only was the response entertaining, but it was educational as well, with myriad examples. It also revealed the depth of care that goes into producing the magazine. People will get worked up over the silliest things, but your thoughtful answer was a useful reminder that often the best response is a thorough one.

Tzvi Sherman '17GS
New York, NY

**QUESTIONS?
COMMENTS?**

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Letters may be edited for brevity and clarity.



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—JOOYUN “JULIE” OH YBARRA '98BUS,
1754 SOCIETY MEMBER


THE 1754 SOCIETY
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A savvy businesswoman plans for the future

Julie saw her Apple stock surge from \$13 to \$170 a share. Instead of cashing it in, she used it to fund a **charitable gift annuity** at Columbia. This let her avoid capital gains tax on the appreciation — and make a bigger gift. She also deferred receiving the annuity payments, ensuring future income at a more attractive rate.

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COLLEGE WALK

NOTES
FROM 116TH
STREET AND
BEYOND



The Conversion of St. Paul's

Scaffolding around Columbia's most breathtaking structure comes down — and all eyes look up

St. Paul's Chapel, designed by I. N. Phelps Stokes in a mix of Byzantine and Italian Renaissance styles, was dedicated in 1907 and was one of the first buildings in New York to be landmarked. Stained-glass scenes of the apostle Paul preaching in Athens, by the painter John La Farge, adorn the apse; cherub heads by sculptor Gutzon Borglum, who later designed Mount Rushmore, greet visitors from atop the columns of the portico. More than a century of homilies and melodies have echoed beneath the chapel's ninety-one-foot-tall tiled vault, often accompanied by the breathy rumbling of the pipe organ (since 1938 an Aeolian-Skinner). The decades have seen dozens of professors honored and hundreds of couples wed.

The chapel, welcoming and nondenominational, is cherished space. But with the terra cotta roof long past its seventy-five-year expected lifespan, white streaks of salt, called efflorescence, had appeared on the tile walls of the interior. The sight raised alarms for

Elizabeth Ramsey '10SPS and Sung "Sunny" Kim, project managers for historic preservation at Columbia. Efflorescence — the residue of evaporated moisture — indicated a leaky roof and potential structural damage. With the weight of the chapel's history on their shoulders, Ramsey and Kim began what became a two-year restoration.

"The laying of a terra cotta roof is intricate and methodical," says Ramsey, "and we knew it would take time, especially given the steepness of the dome." They knew, too, on account of the building's curves and angles, that encasing St. Paul's in scaffolding would be a costly, labor-intensive affair. They wanted to take advantage of this rare access. "We thought, 'If we're spending this time and effort to scaffold, let's see what else we can do,'" says Kim. On the roof, they discovered more features in need of care: the sixteen stained-glass windows encircling the dome. These panels, which honor such luminaries as DeWitt Clinton 1786CC, a New York

governor and US senator, and Philip Van Cortlandt 1758KC, a Revolutionary War commander and New York congressman, were faded and thick with soot.

And so the project was expanded to include the windows and the tiled vault. The chairs in the nave were moved aside to accommodate another scaffold that ascended vertiginously to the upper dome. Workers took breaks during religious services, but other chapel business — lunchtime concerts, fellowship meetings, visitor tours — went on as artisans cleaned the ceiling, replaced flawed tiles, and removed the sixteen windows, the stained-glass fragments of which were dislodged from their lead frames and spirited to Pennsylvania to be scrubbed and delicately recolored. “Instead of painting on top of the original glass, they laminated a very thin piece of new glass, then applied it, so they didn’t touch the original paint,” says Ramsey.

Choosing the roof tiles was a project unto itself. The original tiles, made by Ludowici Roof Tile in Ohio, had fared poorly through the freeze-thaw cycle and were

removed shortly after the building opened. Now the Columbia team saw a chance to revive the initial design. Fortunately, Stokes’s plans were in the archives of the Avery Architectural and Fine Arts Library, along with notes that helped determine the precise shade of green that had graced the roof in 1907. “And Ludowici was still in business,” says Kim. “They even had the original mold.”

This past fall, the scaffolding came down. In the nave, visitors looked up at the refreshed ceiling tiles and the vibrant stained-glass windows and could see, at the dome’s highest point, the oculus — a circular window surrounded by filigree that was black before the restoration.

“We cleaned the filigree and had it regilded,” says Ramsey. “Now when the light comes through, it kind of glows; it gives a finishing touch that you couldn’t see before.”

That glow will fall on generations of guests, worshippers, and celebrants. Full activities have resumed, and four weddings are already planned for 2020. — *Paul Hond*



THE SHORT LIST

LISTEN Miller Theatre goes for baroque with Bach from the Piano, a concert series presented by celebrated pianist **Simone Dinnerstein**. Hear a selection of sonatas on January 30, concertos on February 13, and other highlights from Bach’s canon on March 12. millertheatre.com/event-series/bach-from-the-piano

PROMOTE Published a book? Submit the news to the **Alumni Bookshelf**, an online index of fiction, nonfiction, and poetry from Columbia authors. alumni.columbia.edu/content/alumni-bookshelf-home-page

STREAM Because you can’t be at every campus event, visit the **Columbia Alumni YouTube channel** to watch speeches from the latest Columbia Alumni Leaders Weekend and more. youtube.com/user/ColumbiaAlumni/videos

SEE A striking wall installation by mixed-media artist Adama Delphine Fawundu ’18SOA is on display in Miller Theatre’s lobby through June 2020. The work, titled **Tales from the Mano River**, is inspired by Fawundu’s ancestral homeland of Sierra Leone. millertheatre.com/about/news/tales-from-the-mano-river

APPRENEZ Scholars, Francophiles, and history geeks are encouraged to attend “**New Political Economies of the French Empire, 19th–20th Centuries**,” a seminar on the socioeconomic legacies of French colonialism. Free and open to the public at Columbia’s Maison Française on February 28. heymancenter.org/events/



TOP: LISA MARIE MAZZUCCO; BOTTOM: LEN SMALL



When Lions Become Vegans

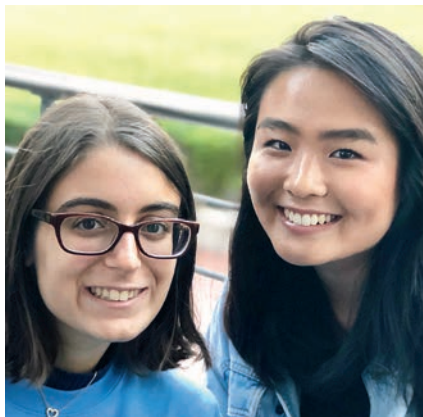
The Columbia Vegan Society says you can have your dairy-free, egg-free cake and protect the planet, too

Free food is probably the best way to get a student's attention, and Zoe Elison's bait was brownies.

As president of the Columbia Vegan Society, Elison, a sophomore, had baked enough of the dairy-free, egg-free treats to withstand the crush of Activities Day, and after four hours behind a brownie-stacked table, Elison saw more than two hundred people — vegans, vegetarians, and the vegan-curious — sign her e-mail list. That was a record, and a week later, as the club's first meeting overflowed with dozens of students, it was clear that food wasn't the only attraction.

Energized by the wave of world events that rolled in with the academic year — the burning of the Amazon rainforest for cattle ranching, a UN climate report calling on humans to reduce meat

consumption, Burger King's debut of a plant-based Whopper, and a *New York Times* column, written by an omnivore, titled "Stop Mocking Vegans" ("They're right about ethics and the environment") — people were eager to get



Zoe Elison and Sorah Park

together, share stories, ask questions, and debate.

Elison, the moderator, wanted to know: what sort of challenging comments do vegans hear? "How do you get protein?" a woman in a Columbia sweatshirt volunteered, to knowing chuckles. "When you're vegan," she said, "everyone wants to be your dietitian." A Barnard first-year suggested comic Ellen DeGeneres's rebuttal: "What do you care where I get my protein from? Where do you get your riboflavin?" Students from Italy, Romania, and Ukraine described the incomprehension of folks back home, who viewed a plant-based diet as an affront to tradition. Students from Nebraska, Mississippi, and Wisconsin could relate.

But in New York, where veganism is well-established, Columbia students have plenty of options, on campus and off. "Columbia and Barnard have stepped it up," said Barnard sophomore Sorah Park, who has written a downloadable guidebook to dining halls and area eateries called *Your Guide to Vegan Bites at Barnumbia*. Park loves the curry with tofu at the Diana Center, the no-cheese bruschetta pizza at Ferris, and the vegan pho she once had at John Jay. "John Jay's vegan station is pretty good," said Elison. "They have a big salad bar with lots of grains and vegetables. Non-vegans eat at the vegan station all the time — they have Beyond Sausage, and people like the plant-based stuff more than the meat."

At the meeting, students loaded up on brownies and oat-milk ice cream using bowls and spoons brought from home (Elison, who studies computer science and sustainable engineering, tries to avoid disposables). There would be a catered vegan-cheese night later in the semester — an event that stirred great anticipation, since for many aspiring vegans, cheese is the hardest habit to kick. While vegan cheeses don't contain the milk protein casein, which produces opiate-like effects, cheesemakers using cashews, almonds, coconut, and potatoes are concocting equally addictive alternatives light years

beyond the soy cheddar of yore. One student mentioned the brand Miyoko's, which drew murmurs of approval. "I'm picky with my cheese," said the Wisconsinite, "but that one slaps."

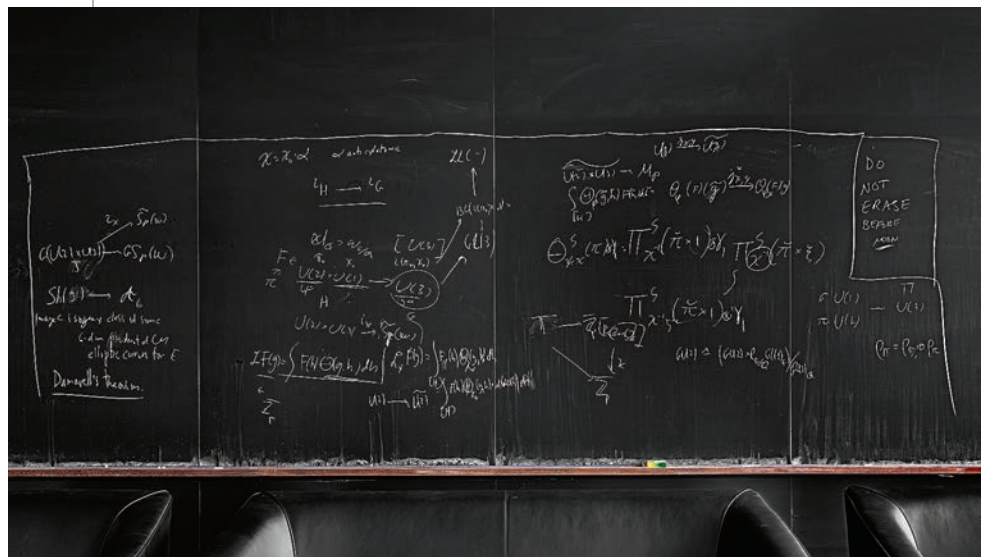
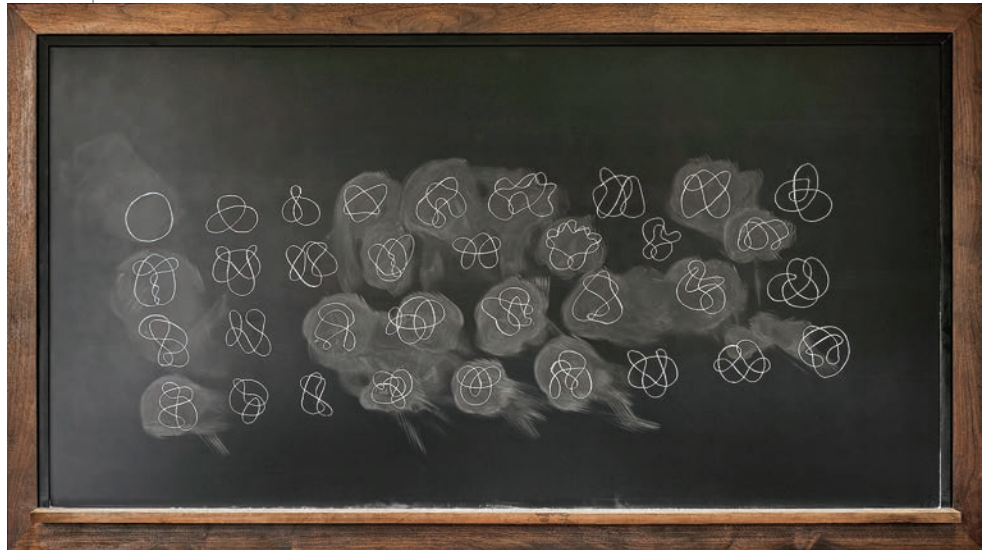
Elison solicited ideas for future discussion topics. "What about dating a meat-eater?" one student said. "Deal-breaker," said another. The Nebraskan said, "Short-term, yes. Long-term, no." A woman stirring her melted ice cream announced that condoms aren't vegan, since they are processed with casein to make them smoother.

Interesting news, but someone said that vegan condoms exist. No one could offer a product review. How about vaccines? "I don't mess around when it comes to medicine," said the Nebraskan, standing firmly on the side of the flu shot. Most everyone stood with him.

And hunting? That one pitted a sustainability vegan ("I wouldn't do it personally, but if hunting is done sustainably and the meat is used to feed people, I have no problem with it") against an anti-cruelty vegan ("Why kill an animal if you don't need to?"). This was big-tent veganism.

The brownies dwindled, and the meeting adjourned. The next day, the students would fuel up at the vegan-friendly stations in John Jay and Ferris or at the local venues highlighted in Sorah Park's guidebook. The zeitgeist, they knew, was at their backs. As Park, plant-based since age eighteen and a varsity swimmer in high school, put it, "If you want to be vegan, now is the time."

— Paul Hond



The Writing on the Wall

For her forthcoming book *Do Not Erase*, photographer Jessica Wynne shot the blackboards of dozens of scholars, including Columbia mathematics professor Michael Harris and physics student Sahar Khan. The formulas on Harris's board (bottom) belong to a branch of number theory called automorphic forms and were the response to a problem posed by a graduate student. Khan's board (top) shows mathematical objects called knots, used in string theory. For Khan, drawing on chalkboards is "a process of understanding or eliminating my own misconceptions or suspicions about a topic," she says.

Harris prefers the old limestone-on-slate technology to whiteboards ("I don't much like the smell of the markers") and electronic boards ("They have a tendency to crash, in my experience"). "I know of no better way to share and discuss complicated information," he says.

But he does not claim the visual flair of colleagues whose boards "can be enjoyed for their pictorial qualities by viewers who know nothing about mathematics. I have never been artistically inclined," Harris says. "My use of the blackboard is purely functional."

THE RIVER LESS TRAVELED

A class encounters Manhattan's neglected waterway

On a recent Wednesday, Scot McFarlane, a Columbia doctoral candidate in history who teaches a course called Rivers, Politics, and Power in the United States, shepherded ten undergrads onto the number 1 train headed uptown. The train emerged above ground in Inwood, rattled across the Broadway Bridge, and discharged McFarlane's class at 225th Street in Marble Hill, the first stop on the other side of the Harlem River. The students were met by Duane Bailey-Castro '17TC, a teacher and photographer whose Instagram photos of Harlem River bridges had caught McFarlane's eye. McFarlane had asked Bailey-Castro to lead the group on a tour.

Wearing a white shirt, dark tie, glasses, and a bulging knapsack, Bailey-Castro, who grew up in the South Bronx, took the class to the nearby Metro-North platform, which afforded a view, on the opposite bank, of Columbia's Baker Athletics Complex. Bailey-Castro explained that this part of the waterway had been unnavigable until the late nineteenth century, when the Harlem River Ship Canal was created to fully link the Hudson and Harlem

Rivers. As a result of the construction, Marble Hill, once attached to Manhattan, is now on the Bronx side of the canal — “the only part of Manhattan that's on the mainland,” Bailey-Castro said.

Bailey-Castro showed drawings and photos of the eight-mile-long Harlem River, which branches from the East River at Randall's Island, curves along the tapering horn of Upper Manhattan, and bends westward at the island's tip in an almost horizontal path to the Hudson. As a commuter train shrieked in the distance, Bailey-Castro held up a 1905 tourist postcard of New York's most wondrous sights: the Statue of Liberty, St. Patrick's Cathedral, the Flatiron Building, and — the High Bridge? “The High Bridge is the oldest surviving bridge in New York,” Bailey-Castro said. “It was completed in 1848, part of the Roman-style Croton Aqueduct, and was the Brooklyn Bridge of its day — an engineering marvel as well as a tourist attraction.”

Reopened in 2015 as a pedestrian walkway, the High Bridge was downriver, out of view. But it reminded Bailey-Castro of another Harlem River crossing, long vanished: the King's

Bridge, built during the Colonial period. “During the War of Independence the King's Bridge, which connected Marble Hill to the mainland, was the major artery for the American fighters in Manhattan to escape from the British,” Bailey-Castro said. “On November 25, 1783 — the day the British evacuated Manhattan — George Washington returned to New York City across that bridge.”

As the class walked back to Manhattan over the Broadway Bridge, McFarlane spoke of the rivers of his formative years: the Concord in Massachusetts and the Trinity in Texas, the latter of which is the subject of McFarlane's dissertation. “The Trinity flows from Dallas–Fort Worth through a rural part of the state into the Gulf of Mexico,” McFarlane said. “The growth of the cities made the river towns downstream harder places to live because of pollution and also flooding from runoff. In my work I think about the connection between rivers and the history of both urbanization and slavery: the Trinity starts in the city and flows through former plantations. And of course rivers facilitated the slave trade and also provided escape routes for people fleeing slavery.”

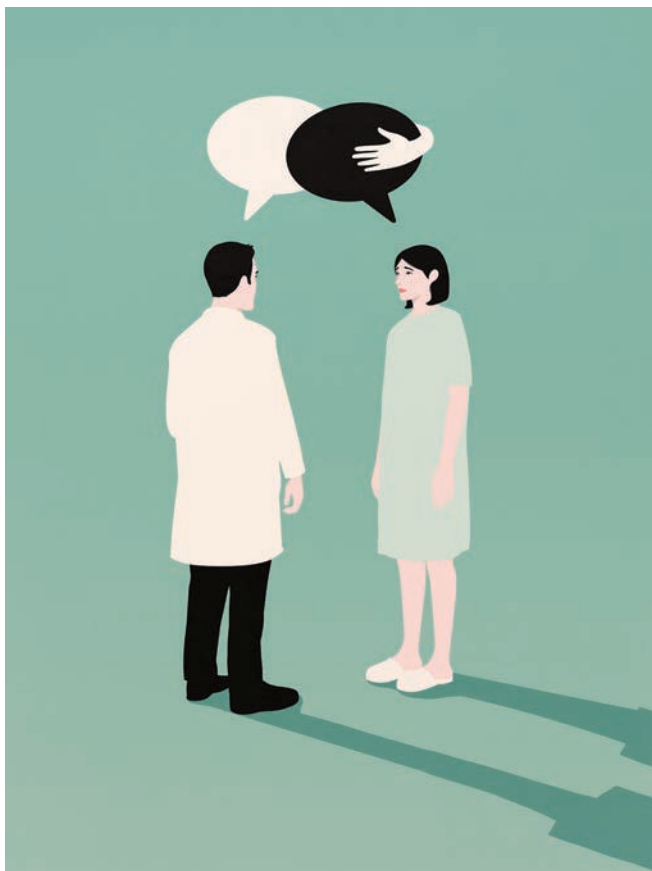
Like all rivers, McFarlane said, the Harlem River reflects larger political dynamics. “In the twentieth century, Harlem and the Bronx became home to Black and Latino communities, and the river was neglected, while the Hudson was opened up for recreation. It's useful to think about these differences and what they say about inequality and the history of racism in New York City.”

The group headed back to the subway. But McFarlane wasn't finished with the mighty Harlem. “Next week, we'll do a canoe trip,” he said. “To understand the river, we have to experience it. We'll put in at Roberto Clemente State Park in the Bronx and go about a mile upriver.

“It's a short trip, but it will give a sense of the river's strength.” — *Paul Hond*



The High Bridge.



Patient Storytellers

A narrative-medicine workshop teaches the art of radical listening

“People need a way to tell and listen to stories at the most difficult points of their lives,” said Lucia Knoles, an English professor at Assumption College in Worcester, Massachusetts.

Knoles was one of over a hundred people from around the country and the world — doctors, social workers, therapists, writers, chaplains — who journeyed to the Columbia University Irving Medical Center campus in October for a three-day workshop

on the rising field of narrative medicine.

Participants filtered through the lobby, coffee in hand, and into a lecture hall, where physician and literary scholar Rita Charon ’99GSAS, a Columbia professor of medicine, expounded on the virtues of what she terms “radical listening.” Charon, who is the inaugural chair of the Department of Medical Humanities and Ethics, established the field of narrative medicine at Columbia in 2000 and directs the University’s master’s program in narrative

medicine — the first of its kind in the nation, and the model for academic programs at other universities.

Narrative medicine teaches that health care is strengthened when practitioners listen to patients’ personal stories and validate the complicated feelings

stories have power and value. Pushing back against impersonal norms of health care, she created what would become a new discipline, one that examines how clinicians, patients, and those touched by illness — inevitably, all of us — can use narrative tools to improve care and nurture empathy.

Charon, who wrote her dissertation on Henry James, recalled the first time she “strayed from medical routine.”

their illnesses bring up. To illustrate the problem that narrative medicine seeks to address, Charon projected two pictures on a screen. The first was of Earth floating in outer space. The second was of a human cell. That huge chasm between the macro and the micro, the general and the specific, is why medicine needs the humanities, she said. “In medicine, we got very good at talking about the human body,” Charon told the crowd. “But we got dumber and dumber about paying attention to the individual.”

Charon, who wrote her dissertation on Henry James, recalled the first time she “strayed from medical routine,” as she put it. “I asked a patient, what do I need to know about you?” Charon said. “He tells me quickly about being sexually assaulted as a child, and he’s weeping. I ask him why, and he says, ‘No one’s ever let me do this before.’”

That moment of connection would inspire Charon to explore the idea that patients’

Listening to and sharing stories of sickness defies the often hurried, harried world of medicine, Charon said. But the method has proved so promising that all first-year Columbia medical students must now take one narrative-medicine course.

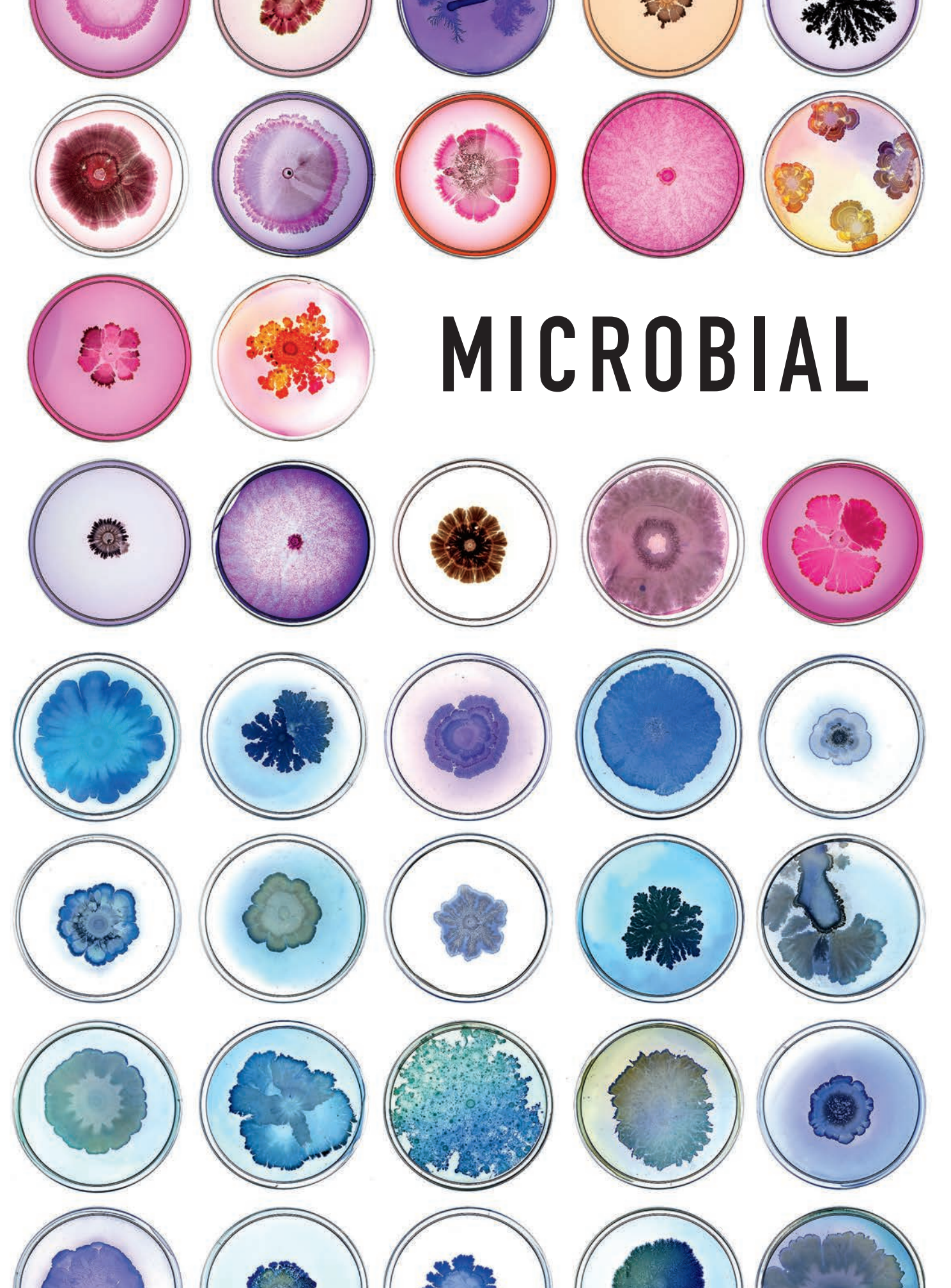
Outside the lecture hall, Knoles, the English professor, explained why she was at the workshop, which included talks, small-group seminars, writing exercises, close readings of short stories, and discussions of paintings and photographs. “Just after college, not having a clue what to do with my life, I spoke with a therapist. He told me to remember two things. One, you can’t solve everyone’s problems. Two, everyone you love will suffer.”

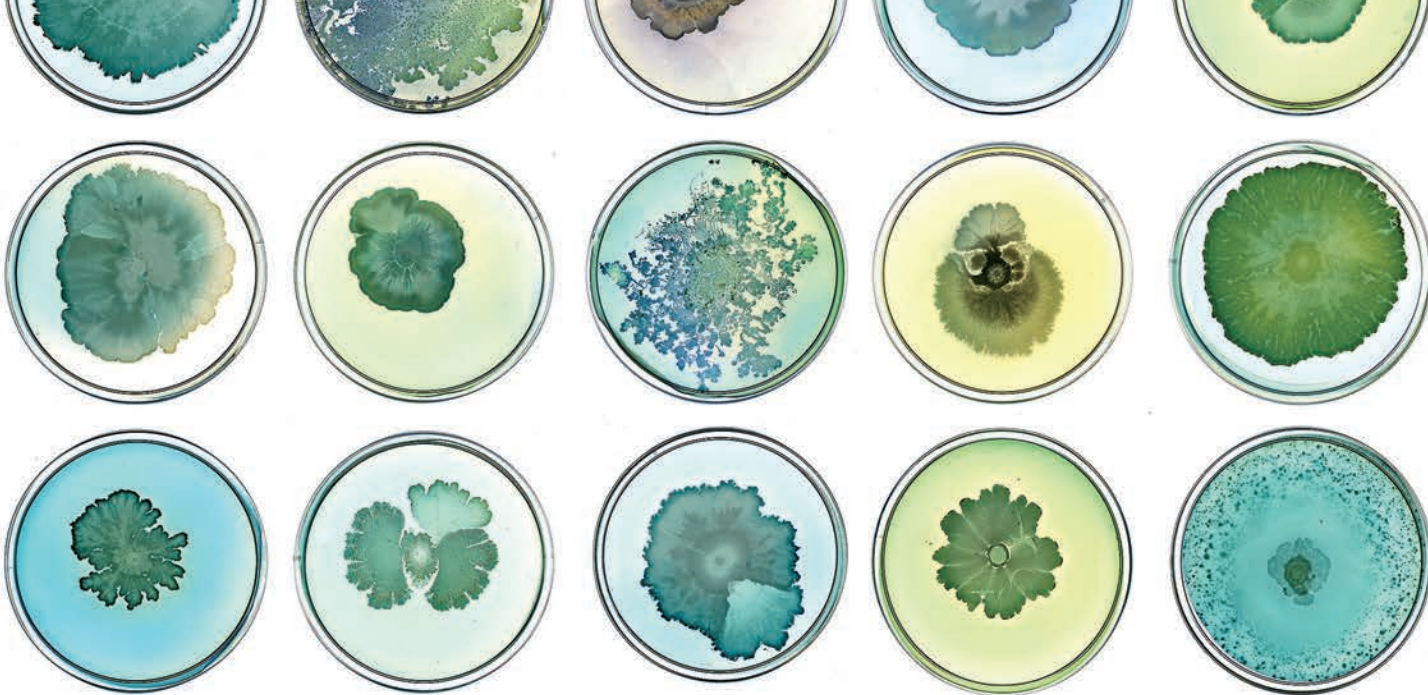
She paused, finishing her coffee.

“But he never taught me the third thing: how to ease the suffering of others I’ve learned the best way to do that is to bear witness to people’s stories. To be with them.”

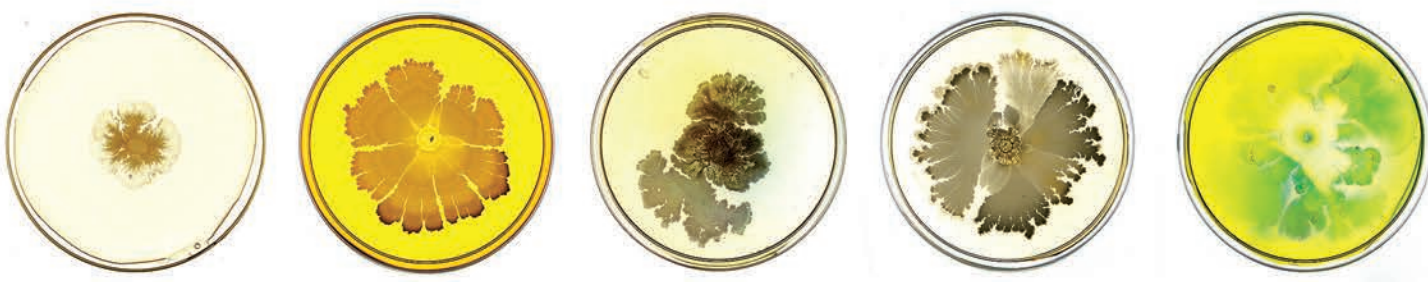
— *Rebecca Kelliher ’13BC*

MICROBIAL



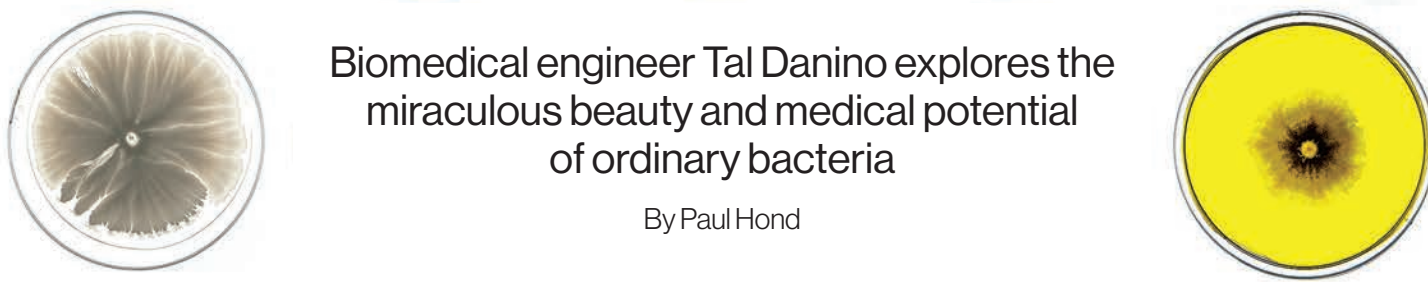


RAINBOWS



Biomedical engineer Tal Danino explores the miraculous beauty and medical potential of ordinary bacteria

By Paul Hond



John James Audubon drew birds, Georgia O’Keeffe ’71HON painted skulls, Damien Hirst pinned butterflies to canvas. But Tal Danino’s art cuts even closer to nature’s core: his palette is alive, his paint made of the oldest, smallest, most abundant creatures on earth.

In a laboratory in the Northwest Corner Building, Danino, an assistant professor of biomedical engineering, is growing bacteria. Danino works on the frontiers of synthetic biology, a young discipline in which biological systems are genetically redesigned to perform useful tasks. Combining the remarkable abilities of bacteria and the power of genetic engineering, Danino is targeting cancer — specifically, he is programming microbes to release medicine inside tumors. But for Danino, bacteria are not just soldiers in a war on illness; they are also singularly beautiful, expressive, and meaningful life forms. As the heroes of his bacterial “paintings,” which have hung in galleries in New York, Beijing, Seoul, and Abu Dhabi, these microbes give new meaning to “still life.”

Danino typically begins his art pieces with a pipette of bacteria and a petri dish coated with agar, a growth medium derived from algae. With the help of researcher Soonhee Moon, he deposits precise droplets, each containing a few thousand bacteria, onto the agar. The bacteria quickly replicate, dividing themselves and spreading out in patterns resembling intense starbursts, delicate blossoms, eyeballs, corals, sprawling continents, and cross sections of agate stone. Using chemical dyes to bring out the intricate motifs formed by the proliferating microbes, Danino takes pointillism to its irreducible limit: images made of millions and millions of microscopic cells.

“I’ve found that the visual component is an extremely powerful way to communicate science,” says Danino. “My overall theme is that the medium — in this case, bacteria — is the message.” That message asks us to consider life and health at the most fundamental level. “We evolved from bacteria,” Danino says. “It’s amazing when you think about it: they are our ancestors, and they also live inside us.”

At Liberty Science Center in Jersey City, Danino’s petri-dish images greet visitors at the *Microbes Rule!* exhibit. “People seeing the work ask, ‘What is that? What is it made of? What is its significance?’” says Danino. “For me, the art is about provoking ques-

tions about what these little things mean and how they connect to our lives.”

Having evolved over billions of years, and having, among other exploits, furnished the planet’s atmosphere with oxygen, these “little things” are a very big deal. Countless and pervasive, bacteria live in forests and deserts, homes and schools, hospitals and restaurants, on the surface of ponds and at the bottom of oceans, in sand and soil, in volcanoes and under ice sheets. Subtle variations in DNA make it impossible to know how many discrete species exist. All told, bacteria are more numerous than the stars in the universe, and in our bodies, where they thrive by the trillions, they perform functions essential to our survival, like making vitamins and coating our guts to prevent illness.

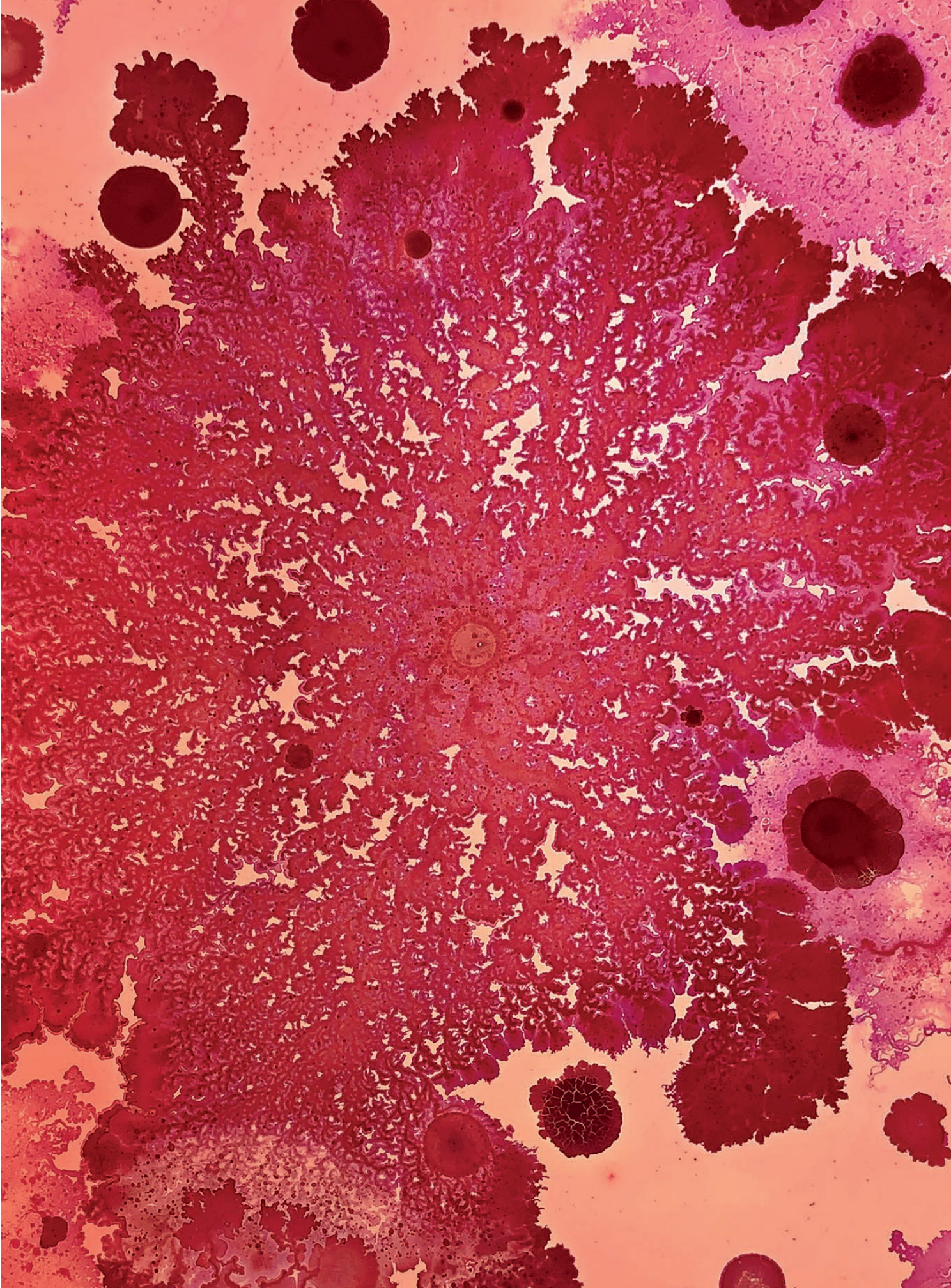
But some microbes can make us sick, a PR problem that has obscured bacteria’s benefits, real and prospective, to human health. Danino, both as an artist and as director of Columbia’s Synthetic Biological Systems Laboratory, is helping to change that. “Though bacteria are single-celled, they are incredibly sophisticated,” he says. “They reproduce asexually, they have tails called flagella that allow them to swim, they mutate to adapt to their environment, and they ‘talk’ to each other through a chemical communication process called ‘quorum sensing,’ in which bacteria reach a certain density and then perform tasks collectively, such as express genes needed for bioluminescence.”

The qualities that make bacteria such dynamic painters — the ability to multiply rapidly and act synchronously — also make them, in Danino’s hands, ideal agents for medicine. This past summer, Danino, with Columbia immunologist Nicholas Arpaia and colleagues at the Massachusetts

Institute of Technology and Massachusetts General Hospital, published a paper in *Nature Medicine* showing that by harnessing the mechanism of quorum sensing, they could program bacteria to shrink tumors in mice.

Their experiments focused on CD47, a protein that is present on the surface of many cells. This protein, a kind of “don’t eat me” signal,







Microuniverse, 2018, at Liberty Science Center, Jersey City.

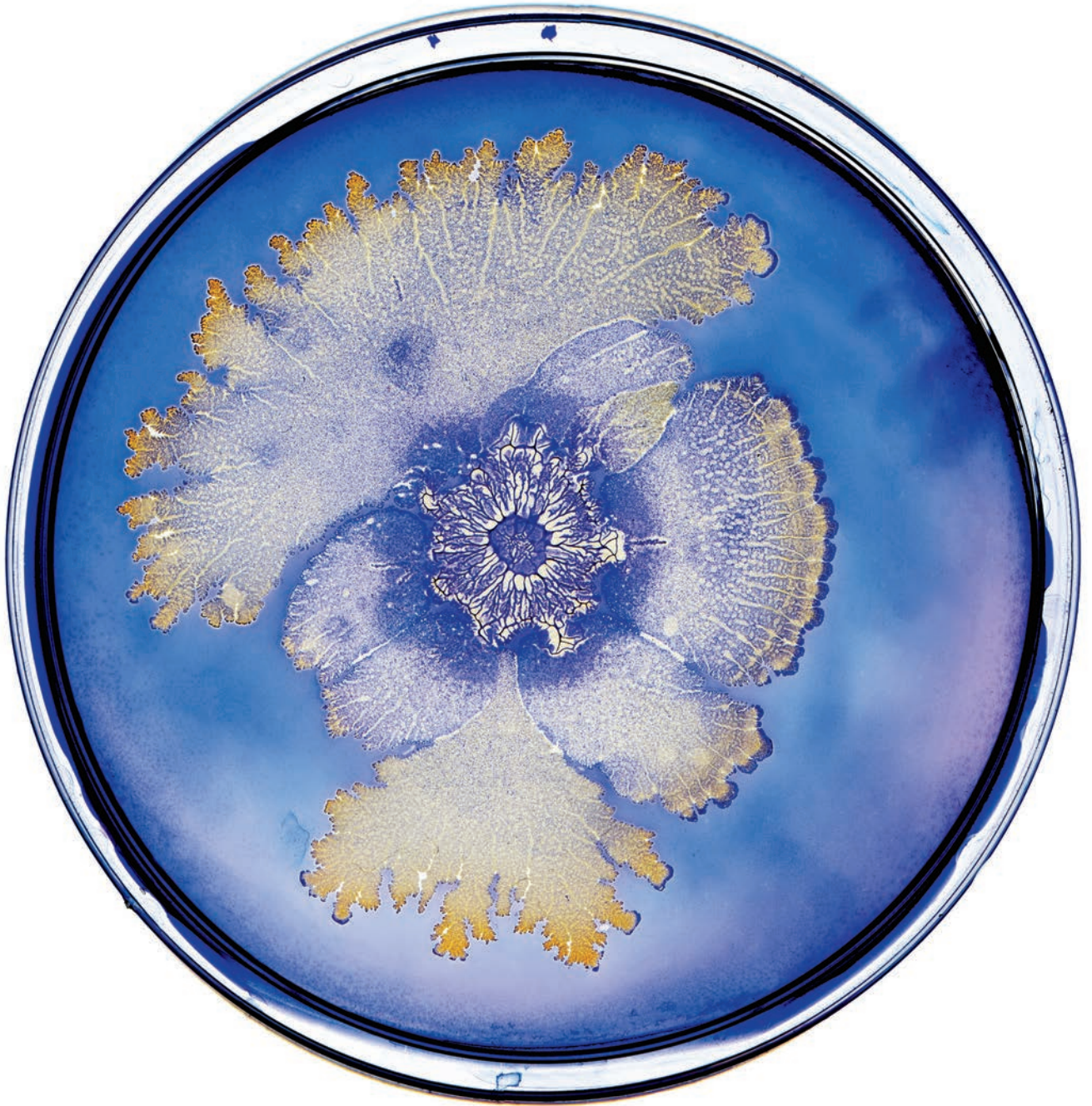


Fossils, 2019, at Zürcher Gallery, New York.



OPPOSITE: JUAN ROQUE

Supernova, 2014, at Koch Institute Public Galleries, Cambridge, Massachusetts.



Microbial Rainbow (detail), 2018–.

tells the immune system that the cell is innocuous, encouraging white blood cells to move along, since no immune-system action is required. As cells age, they lose CD47, allowing the immune system to eliminate failing cells, clearing the way for new ones. But in a cancer cell, CD47 can be erroneously turned on, planting the “don’t eat me” flag and tricking the immune system into ignoring the malignancy.

Danino and his colleagues wanted to find a way to turn off the CD47 signal, while avoiding the side effects of antibody immunotherapy, a form of cancer treatment that rallies the body’s natural defenses. “If you inject the CD47 antibody into the bloodstream, you will see a reduction in red-blood-cell counts or platelet counts,” Danino says. “That’s what causes adverse side effects.” So instead, the team injected genetically reprogrammed bacteria directly into tumors — bacteria built to release, on cue, a payload of CD47 antibodies.

Getting the bacteria to do this required heavy problem-solving. Because bacteria can’t produce complex antibodies, Danino had to direct them to generate simpler antibody-like proteins, called nanobodies, which en masse could stimulate the immune system in the same way. Using DNA customized in his lab, and a non-pathogenic strain of *E. coli* (which lives in our intestines), Danino devised what he calls a “medicinal Trojan horse.” Once introduced into a tumor, the engineered bacteria begin replicating until they reach a minimal threshold (or quorum) of density. This triggers them to burst and discharge the nanobodies. These nanobodies attach to the CD47 proteins in the tumor, hiding the faulty “don’t eat me” signs and permitting the immune system to identify and consume the bad cells. In the recent experiments on mice, the tumors shrank. Danino is working on translating this technology to humans and hopes to begin trials within three years.

Danino grew up in Los Angeles, the son of Israeli immigrants. His father, who had studied electrical engineering, fostered his love of computers, and his mother, an artist, engaged him with art projects — a favorite involved shaving wax crayons onto paper, folding the paper, ironing it until the shavings melted, and then opening the paper to reveal a dazzling snowflake pattern. This presaged his interest in the elaborate figures

made by bacteria and his efforts to mimic and augment these processes in his lab.

“Art inspires a lot of the science that we do,” Danino says. “Artists are really good at exploring, whereas scientists tend to be more conservative. The scientific enterprise is based on coming up with a hypothesis and then rigorously testing it. When you write a grant, it has to be as un-crazy-sounding as possible in order to get funded. Art isn’t like that: it’s more subjective and less methodical, more based on intuition and trying crazy ideas. That mindset allows me to jump into the science and develop the story as I go along.”

Danino undertook his first attempts to program bacteria in grad school at the University of California San Diego, where he merged his interest in computers and math with biology.

He became interested in using microbes to improve human health as a postdoc at MIT,

and began exploring ways to genetically manipulate bacteria to treat

cancer. A few of his collaborative artworks from that era hang in his office. For them, Danino grew cancer cells on a plastic surface, which was then photographed by the Brazilian artist Vik Muniz.

One of these photolithographs, *HeLa Pattern 1*, shows an ornate design made up of the cancer cells of Henrietta Lacks, an

African-American woman who died in 1951, and whose unusually hardy cells were harvested without her consent. HeLa cells represent the most commonly used “immortalized” human cell line, meaning that the cells, due to a mutation, keep dividing indefinitely, making them invaluable to science. “Virtually every lab in the world that works on cancer has HeLa cells,” says Danino. “Billions and billions of cells, alive and used today for research.”

The idea of an eternal organism never fails to fire Danino’s imagination. Like Lacks’s cells, bacteria keep multiplying: a single bacterium can become millions within hours. For Danino, the implications, too, are endless.

“A decaying human body causes more life for microorganisms,” he says. “So there’s an interesting connection there between our life cycle and that of bacteria. Our lifespan is finite, but bacteria just keep dividing. They’re immortal, in a way. It’s a different way to think about life.”

And art. 🍷

“Artists are really good at exploring, whereas scientists tend to be more conservative.”

IN DEFENSE

OF

HUMAN KIND

FRANZ BOAS AT COLUMBIA



Boas reenacts a Kwakiutl ceremonial dance to assist Smithsonian Institution sculptors building a diorama.

A century ago, when people believed that intelligence, empathy, and human potential were determined by race and gender, Franz Boas looked at the data and decided everyone was wrong. In this excerpt from the new book *Gods of the Upper Air*, Charles King profiles the maverick Columbia professor who created the field of cultural anthropology.

After his appointment at Columbia, Boas's connections with the American Museum of Natural History¹ began to fade. He had a habit of making himself more respected than liked. His time at the museum had produced new research and exhibitions but also disappointments, professional disagreements, and hurt feelings among his colleagues, who found him confident to a fault, officious, and given to pique. When he formally resigned his curatorship in 1905, no one begged him to stay.

The move to full-time work at the university gave Boas the opportunity to build his own team of researchers. "Neither Berlin with its five anthropological professorships, nor Paris with its anthropological school, nor Holland with its colonial school, could give a proper training to the observers whom we need," he wrote to a colleague in 1901. He reorganized the department's coursework to include training in linguistics and ethnology, not just the traditional anthropometry.² "With archaeology represented," he told the university's president, Nicholas Murray Butler, "we should be able to train anthropologists in all directions."

Boas had decamped with Marie and the children to a rambling house across the Hudson River in Grantwood, New Jersey. It soon became an informal gathering place for a growing coterie of graduate students. Many were already making names for themselves as well-rounded scholars with knowledge of ethnology, linguistics, archaeology, and physical anthropology, the four distinct fields that Boas had come to see as the foundation of a proper discipline of anthropology. The first of these to complete the doctorate at Columbia, in 1901, was Alfred Kroeber, another member of New York's German immigrant community.

He was soon on his way to California, where he set up the new anthropology department at Berkeley. Robert Lowie, an Austrian émigré and budding expert on the Plains Indians, graduated in 1908 and later joined Kroeber on the West Coast. Edward Sapir, a Jewish immigrant from the Russian Empire, finished his degree under Boas's direction in 1909 with a dissertation on the languages of the Pacific Northwest. He soon moved to Ottawa to head up the Canadian government's geological survey. Alexander Goldenweiser and Paul Radin, Jewish immigrants from Kiev and Łódź, finished in 1910 and 1911, with work on anthropological theory and Native American ethnology. "It is gratifying to note that the demand for graduates of the Anthropological Department of Columbia University has always been such that practically all the young men in anthropological museums and colleges are those who have either graduated here or studied a considerable number of years in this Department," Boas bragged to President Butler.

Within only a few years, however, that early momentum seemed to stall. Butler frowned on teachers' spending so much time on research rather than in the lecture hall. He informed Boas that no increases in appropriations for anthropology would be made. There was no money for teaching materials. There were too few lecturers to cover all the fields of study. Things were in "a pitiable condition," Boas wrote to Kroeber at the beginning of 1908, "and ... for the time being all our former hopes and aspirations have gone to pieces." The only solution was to try to find new sources of income, even "a complete change of interests," he added, which might provide a more stable financial footing for the fieldwork that he hoped to continue.

¹Boas worked at the American Museum of Natural History in New York City from 1896 to 1905. He organized expeditions to document the vanishing tribes of the American West and gathered artifacts such as totem poles and a sixty-three-foot-long canoe, which were displayed in the Northwest Coast Hall, opened in 1899.

²Anthropometry is the study of the measurements and proportions of the human body. The general theory was that physical differences might account for differences across social groups.



³Just as the US Geological Survey investigated the physical wealth of the Western territories, the Bureau of American Ethnology studied the people who lived there. This image from 1916 shows ethnologist Frances Densmore and Mountain Chief, a Blackfoot leader.

⁴Madison Grant, an 1890 graduate of Columbia Law School, expressed concern that immigrants were polluting American stock. He helped craft immigration restrictions and anti-miscegenation laws in the United States and in 1916 wrote *The Passing of the Great Race*, a book Adolf Hitler referred to as “my bible.”

⁵This was a huge sum. It would be worth more than half a million dollars today.

Boas began sending out letters to virtually any source he could think of, proposing grand research projects that might somehow attract new funding. He contacted his old colleagues at the Bureau of American Ethnology³ with the idea of creating a handbook of American Indian languages, which he hoped would provide additional travel money for his students and coworkers. In the 1907–08 academic year, he broadened the course offerings, including a new class on “The Negro Problem.” “I am endeavoring to organize certain scientific work on the Negro race which I believe will be of great practical value in modifying the views of our people in regard to the Negro problem,” he told Booker T. Washington. Aware that more bodies in the classroom meant more reason for President Butler to increase the department’s budget, he also pushed to open classes for undergraduates. Then in the spring of 1908, a special new opportunity came Boas’s way that promised to resolve a host of difficulties at once.

A year earlier the US Congress had established a special commission to study the rise in immigration and its practical effects on the United States. Rumors had circulated that foreign governments were willfully sending over criminals and the infirm as a way of ridding themselves of undesirables and, in the process, weakening American society. Chaired by Senator William P. Dillingham, a Vermont Republican, the commissioners eventually included such luminaries as Henry Cabot Lodge, a Massachusetts Republican and immigration opponent, and LeRoy Percy, a Mississippi Democrat and prominent Delta planter. Decked out in straw boaters and linen suits, this distinguished group of commissioners set out on a steamship journey to Naples, Marseilles, and Hamburg, among other European ports. There they found squalid detention camps full of Italians, Greeks, and Syrians, all willing to pay unscrupulous captains whatever they might charge for passage across the Atlantic. They uncovered no evidence of a conspiracy to dilute the “great race,” as Madison Grant⁴ would soon term it. Still, when they returned, they decided to organize a series of working groups to study the overall problem of immigration, assemble statistical data, and issue detailed recommendations toward creating a more rational policy for dealing with the waves of foreigners now crashing on American shores.

In March 1908 the commission contacted Boas with the idea of preparing a report on “the immigration of different races into this country” and asked what thoughts he might have on how it could be carried out. Boas wasted no time in responding. He proposed to examine physical changes among immigrants who had recently arrived in the United States. After all, if immigration was in fact having an effect on American society, its clearest results were likely to be seen in the bodies of the newest Americans: the immigrants’ children. Were they assimilating to some common American type? Or were the hereditary traits common to the several races of Europe so powerful that they would survive across time and distance, to be passed on to children who were the products of marriage across racial or ethnic lines? Might those conserved traits, the vestiges of ancient races and subraces, throw up natural barriers to what was being called America’s “melting pot” ideal?

“The importance of this question can hardly be overestimated,” Boas wrote to the commission staff, “and the development of modern anthropological methods makes it perfectly feasible to give a definite answer to the problem that presents itself to us.” He proposed a budget of nearly \$20,000,⁵ which would pay for a team of observers to measure heads, take family histories, and compile the gargantuan statistical data set that would be required to answer the questions he had posed. “I believe I can assure you that the practical results of this investigation will be important in so far as they will settle once and for all the question of whether the immigrants from southern Europe and from eastern Europe are and can be assimilated by our people.” The commission balked at the price tag but agreed to fund the preliminary study. That fall the government agreed to expand the work into a full-scale research project.

Boas’s graduate students, Columbia colleagues, and hired assistants soon fanned out across the city. They lugged along many of the same measuring devices Boas had used at the Chicago world’s fair, plus a set of glass marbles specially crafted by a New York optician for comparing eye color. They measured the heads of the students in Jewish schools on the Lower East Side. They distributed questionnaires to Italian families in Chatham Square and Yonkers. They queried Bohemians in their neigh-

borhoods on the East Side, between Third and First Avenues and East 70th and 84th Streets. They chased down Hungarians, Poles, and Slovaks in Brooklyn. They stood on the docks at Ellis Island, calipers and eye-color meters in hand, as people waited for medical inspections. At reform schools and juvenile asylums, at parochial and private schools, at the Young Men's Hebrew Association and the YMCA, some 17,821 people subjected themselves to Boas's scales and measuring tapes. Nothing like it had ever been attempted before, certainly not under the auspices of an official government commission whose charge was to understand precisely how immigrants were affecting the literal body politic of their new country. In the spring of 1910, Boas wrote to colleagues at the Bureau of American Ethnology to tell them

a “Jew,” a “Pole,” or a “Slovak,” if one judged by the bodies of the children of first-generation immigrants. The conditions of life, from diet to environment, were having a quick and measurable effect on head forms that were thought to be fixed, inheritable, and indicative of one's essential type.

Races were unstable, Boas concluded. And if they didn't exist as physical realities in our present moment, then neither could they have existed in the past — which meant in turn that any history of humanity that presented itself as a battle royale of races was essentially false. If there was no physical permanence to the concept of race, at least as it had been popularly defined, then there could be no clustering of other traits around it, such as intelligence, physical ability, collective fitness, or aptitude

ANY HISTORY OF HUMANITY THAT PRESENTED ITSELF AS A BATTLE ROYALE OF RACES WAS ESSENTIALLY FALSE.

that his work was producing “entirely unexpected results, and [makes] the whole problem appear in an entirely new light.”

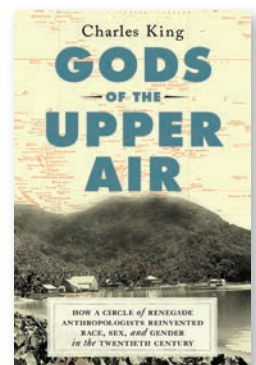
After countless hours of data collection, analysis, and write-up, the conclusions were finally published in 1911 as *Changes in Bodily Form of Descendants of Immigrants*, part of the Dillingham Commission's official record. Boas expressed his main conclusion in a simple sentence on the second page: “The adaptability of the immigrant seems to be very much greater than we had a right to suppose before our investigations were instituted.” Children born in the United States had more in common with other US-born children than with the national group — or race, as Grant would have termed it — represented by their parents. Round-headed Jews became long-headed ones. The long heads of Sicilians compressed into shorter heads. The wide faces of Neapolitans narrowed to match those of the immigrants by whom they were surrounded, not those of their racial brethren in the old country. There was, in other words, no such thing — in purely physical terms — as

for civilizational advancement. “These results are so definite that, while heretofore we had the right to assume that human types are stable,” he wrote, “all the evidence is now in favor of a great plasticity of human types, and the permanence of types in new surroundings appears rather as the exception than as the rule.”

Boas had been working up to this conclusion since his days on Baffin Island,⁶ but he now had more than simple intuition to back up his claims. He had data, masses of it, all pointing toward a revolutionary — and to many, discomfiting — conclusion: that the “peoples” he had been helping to document in museums and exhibitions since his own immigration to the United States were not natural varieties of humankind. There was no reason to believe that a person of one racial or national category was more of a drain on society, more prone to criminality, or more difficult to assimilate than any other. What people *did*, rather than who they *were*, ought to be the starting point for a legitimate science of society and, by extension, the basis for government policy on immigration. 📖



⁶ Boas sailed to Baffin Island in 1883. He had become fascinated by the Inuits' capacity to move across vast distances, survive in a difficult environment, and make sense of a landscape that could appear, to outsiders, bleak and formless.



From the book *Gods of the Upper Air*, by Charles King, published by Doubleday Books, an imprint of the Knopf Doubleday Publishing Group, a division of Penguin Random House LLC. © 2019 by Charles King.

A World of Difference

These five ambitious alumnae are using their ingenuity and goodwill to make meaningful change around the globe

By Julia Joy



MOUNTAIN RESILIENCY PROJECT

Tsechu Dolma

Helping mountain communities adapt to climate change

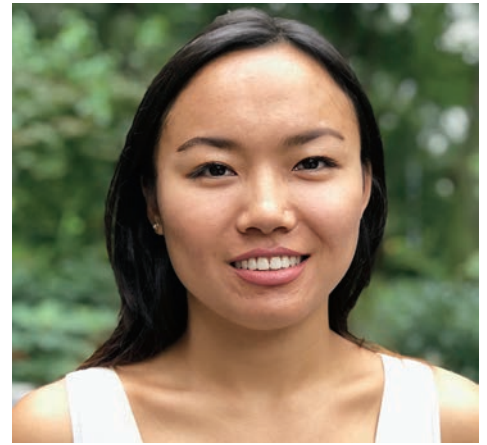
High in the Himalayas along the border between Nepal and China, thousands of Tibetan refugees, most of them stateless and without legal documentation, live in struggling farming communities. Isolated physically, economically, and politically, many families go hungry. Literacy rates are low, and human trafficking is on the rise. And now those farmers have another significant challenge to add to their list: climate change.

“Temperatures in the Himalayas are warming at approximately twice the global rate,” says Tsechu Dolma ’14BC, ’15SIPA, who is helping Tibetans in Nepal improve their livelihoods through her nonprofit, the Mountain Resiliency Project (MRP). “Glaciers are melting, and weather patterns are erratic. Farmers face flash floods, shortened growing seasons, and unreliable access to water.”

MRP, an economic- and community-development organization, works with refugee farmers in the Himalayas to grow, harvest, and sell crops, such as mushrooms, that thrive in greenhouses regardless of changing weather conditions, and to produce honey from native bees. “We’re strengthening the food security in the region so that agriculture will continue to be a huge percentage of the local GDP,” says Dolma. MRP also runs educational workshops for local women on topics including sexual health and financial empowerment.

For Dolma, the problems in the mountains are deeply personal. She spent the first ten years of her life in a refugee settlement in Nepal before her family found political asylum in the United States.

Tsechu Dolma surveys a group of Tibetan refugees.



They ended up in Queens and lived in public housing. “Growing up, I didn’t think about college,” says Dolma, whose parents have no formal education. “But eventually I learned about a school called Columbia that was just a subway ride away.” She got a full scholarship to Barnard and, while still an undergraduate student, began a master’s program at Columbia’s School of International and Public Affairs. A grant from the University enabled Dolma to launch MRP in 2012 as part of her thesis project. “I never thought it would lead to a thriving startup with a full-time staff of fifteen,” she says.

Since then, MRP has partnered with aid organizations such as the US State Department’s Bureau of Population, Refugees, and Migration to help fifteen thousand Tibetan farmers, many of them women, become economically self-sufficient. The nonprofit has also improved infrastructure in the mountains: after a devastating earthquake hit Nepal in 2015, MRP helped construct two hundred new homes.

Dolma is now taking a one-year hiatus from running the organization to pursue an MBA at the University of Oxford as a Skoll Scholar (a program for social entrepreneurs). After years of doing fieldwork, she says she wants to become a better international businesswoman and broaden her humanitarian outreach beyond the Himalayas. “To really make systemic change we have to think big, and thinking big means stepping out of Nepal,” says Dolma. “My dream, my family’s dream, my community’s dream, is to build a global network of climate-vulnerable refugees who can support each other by starting their own sustainable business ventures.”



TOP: LEN SMALL; BOTTOM: MOUNTAIN RESILIENCY PROJECT



Atti Worku

Educating the next generation of Ethiopians

Growing up in Adama, Ethiopia, Atti Worku '14GS understood that she was different from other kids. Her mother and father were educated and middle-class; other families could barely afford food. Worku had access to books and was sent to private school, not the overcrowded public schools that were short on teachers and resources. And while Worku finished high school, most of the poorer kids in Adama dropped out — to work or simply because they couldn't afford uniforms and school supplies. "I always wanted to do something about the problems I saw, but I didn't know how," Worku says.

Two decades later, Worku is developing her own solution to the social inequalities she witnessed as a kid. As the founder and CEO of Seeds of Africa, an education and economic-development nonprofit, she operates a free, high-quality K-12 school in Adama for children whose parents earn less than the equivalent of around \$1.50 a day. The school provides nutritious meals, health-care services, uniforms, and school supplies for all students. "When children have challenges at home, education on its own is not going to make a difference," says Worku. "So we provide the things that allow them to stay in school, graduate, and have a better life."

Worku had an unconventional route to entrepreneurship. She studied computer science in Addis Ababa and briefly worked as a network engineer before leaving college to pursue modeling. She moved to South Africa, competed in beauty pageants throughout the continent, and in 2005 represented Ethiopia at the Miss Universe competition in Bangkok, where she advocated for expanding access to technology in her home country.

After Miss Universe, Worku moved to the United States and settled in New York City. Though she continued to model, her sights were

set on humanitarian work. "I realized I had to use my influence for something impactful," she says. She came up with the idea for Seeds of Africa and collaborated with her family and professional contacts to open the school. "The beauty of working in fashion is I met a lot of philanthropic people, and they believed in me," says Worku. A few years after starting the organization, Worku got a degree in sustainability management from Columbia's School of General Studies. "My classes helped me make connections between Ethiopia's problems and global issues surrounding poverty, climate change, and women's and children's rights," she says.

Along with improving education, Worku wants to advocate for socioeconomic reform in Ethiopia. Seeds of Africa recently launched a microfinancing program that has helped more than two hundred local Adama women — many of them single mothers — open bread shops, farm stands, hair-braiding salons, and other businesses. "We see at least a 50 percent increase in



household income," Worku says. "That means a family could potentially have three meals a day instead of two." Loan sizes average around three hundred US dollars, and more than 96 percent are paid back within a year.

Worku stresses the importance of truly understanding a community's needs before trying to intervene. "Part of the reason so many aid endeavors have failed in Africa is that a lot of well-intentioned people haven't addressed the deep-rooted problems, just the symptoms," she says. "We take a holistic approach, working with entire communities to ensure that more children and women benefit from the type of support system that I've been lucky to have."

Aline Sara

Connecting foreign-language students with refugee tutors



Aline Sara '14SIPA, a former journalist who spent several years in Beirut covering the Arab Spring, was applying for humanitarian jobs in the Middle East and trying to brush up on her Arabic when she had the “aha” moment that would lead to an ambitious business venture. “What if there were a startup that helped you learn Arabic, and your tutor was a Syrian refugee who really needed income?” she asked herself.

The year was 2014, and more than a million Syrian refugees had migrated to Lebanon to flee the civil war and ISIS. Denied work visas by the Lebanese government, most had no way of earning a living. “When refugees cross borders, the vast majority, especially the educated middle class — the doctors, lawyers, journalists, teachers — have a very slim chance of finding work,” Sara explains. “Just imagine: you’ve watched your country crumble, you’ve likely lived through trauma — loss, incarceration, near-death experiences — and then you escape to a place where you can’t restart your life.”

TOP: VINCENT COLINI; BOTTOM: NATAKALLAM

Sara, who was born in New York City to Lebanese immigrants and grew up speaking English and French, decided to do something to help. She teamed up with her Columbia peer Reza Rahnema '14SIPA and launched NaTakallam (Arabic for “we speak”), an online language-learning and cultural-exchange program that hires refugees as freelance contractors. Sara runs the for-profit company from the Columbia Startup Lab in New York City, while Rahnema, the COO, heads operations from a Paris office.

NaTakallam connects language students with refugees from the Middle East, Latin America, and Francophone Africa for conversation practice over Skype. For fifteen dollars an hour, anyone can sign up for a session in Arabic, Persian, Spanish, or French, though the company gets most of its business through organizations. More than twenty universities — including Columbia and Yale — have partnered with NaTakallam to incorporate conversation practice into their foreign-language programs, and NaTakallam has helped more than two hundred K–12 schools to bring refugees into their classrooms (also through Skype) as virtual guest speakers. A social-studies class, for example, can invite a migrant from Venezuela to talk to students about the human impact of the country’s economic collapse.

NaTakallam, which also offers translation and transcription services, strives to pay contractors at least the minimum wage in their host countries. Sara says that the company has distributed some \$600,000 to 150 displaced individuals. But the impact goes beyond financial. In facilitating face-to-face interaction, NaTakallam promotes empathy for refugees and combats negative stereotypes. “We try to bring awareness to the fact that there are all kinds of people in refugee populations, because the media tends to give a very negative image,” says Sara, who adds that some of NaTakallam’s tutors have found more work and even opportunities for resettlement through their students.

“Being a refugee is isolating,” Sara says. “A lot of social enterprises will hire displaced people to do artisan work or data entry behind a computer. Those jobs are important because they generate income, but they’re still isolating. Human connection and warmth have ripple effects, and what we’re doing is creating new, empathy-filled virtual networks.”

An Iraq-based Syrian refugee speaks at a NaTakallam event.





Sylvana Q. Sinha

Improving health care in Bangladesh

Sylvana Q. Sinha '04LAW, an international lawyer and foreign-policy expert, never planned on becoming a health-care executive. But in 2010, after her mother suffered from serious complications after an appendectomy at one of Bangladesh's top hospitals, Sinha set her ambitions on improving the medical-care options in her parents' home country.

"Every day, thousands of middle-class Bangladeshis — people who can barely afford to travel — go to India for medical treatment," says Sinha, who grew up in Virginia but developed a strong personal connection to Bangladesh and its culture. "People have lost trust in the health-care system. I have some family members who have been falsely diagnosed with cancer, or they had cancer but it wasn't diagnosed."

Sinha founded Praava Health in 2014 to help the country's growing middle class access high-quality, affordable treatment close to home. Its ten-story outpatient clinic in Dhaka, Bangladesh's capital and largest city, offers a wide range of family-health

and diagnostic services, and since opening in 2017 has served twenty-five thousand people. The average doctor visit in Bangladesh lasts forty-eight seconds, but Praava's patients are guaranteed fifteen minutes, says Sinha, who relocated from New York City to Dhaka in 2015. "If you invest in doctor-patient relationships, you get better health outcomes."

The for-profit company, which charges significantly less than other private facilities, has the nation's first molecular-diagnostics lab to detect cancer, and its most sophisticated hospital information system. "This is a country where people carry around their medical records in bags," says Sinha. "We store everything electronically in one place. Patients can access their records and book appointments online." Counterfeit drugs are ubiquitous in Bangladesh, so Praava also has an in-house pharmacy that sources all medications directly from manufacturers.

Before she became an entrepreneur, Sinha, who studied law at Columbia and international development at Harvard, worked as a policy adviser to then senator Barack Obama '83CC. In 2008 she moved to Afghanistan, where she worked on development and legal-reform projects. Though Sinha originally planned a government career in foreign policy after returning to the United States, she saw more opportunity for social impact in the private sector. "I wanted to make people's lives better, and I felt like participating in politics wouldn't allow me to do that in the way I craved," she says.

The health-care industry presented an attractive challenge. "I think what's exciting about health care is that nobody has really figured it out," says Sinha. Her goals for Praava are ambitious, but with ten new facilities scheduled to open in the next three years, she's making progress. "We're building the best health-care company in Bangladesh," she says. "There are 170 million people in the country, so we have big dreams, and we hope to serve a broader segment of the population over time. We're planning to launch a nonprofit that will reduce financial barriers for patients, improve skills for care providers, and support research. We're just getting started!"



A Praava nurse tests a patient's blood during a home visit.

TOP: RITTA CHANG; AFTER GLOBAL; BOTTOM: PRAAVA HEALTH

Sabrina Natasha Habib

Expanding access to quality childcare in Kenya



In 2011, Sabrina Natasha Habib '16SIPA was in Kenya completing a fellowship in maternal and child health when she stumbled — literally — upon what she calls East Africa’s “childcare crisis.” As Habib recalls, she walked into a day-care center in a Nairobi slum and almost tripped over an infant. “The room was dark and crowded, and I couldn’t even see where I was walking,” says Habib, now the cofounder and CEO of Kidogo, a network of high-quality day-care centers in Nairobi. Struck by the unsafe, unsanitary conditions, Habib began to look deeper into the problem of childcare in East Africa’s low-income urban communities.

“In Nairobi alone, there are approximately three thousand informal day cares, many in corrugated-metal shacks,” says Habib, who was born and raised in Toronto but whose parents are from Tanzania. “There’s little stimulation. They’re just awful for a child’s development.”

Mothers here, most of whom earn money through informal jobs — washing clothes or selling produce on the street, for example — are forced to return to work directly after giving birth, explains Habib: “There’s no such thing as maternity leave for these women. Parents have few choices. They leave their babies home alone, sometimes tied to furniture, or with an older sibling — usually a girl — who has been pulled out of school, or, if they can scrape together the cost, in some type of day care.”

Habib, who lives in Nairobi with her husband and Kidogo cofounder, Afzal, started the nonprofit in 2014 to provide families with safe, stimulating, and affordable places to leave their kids. For less than one dollar a day — a comparable price to other day cares — parents can drop off



their infants and toddlers at a Kidogo center, where skilled caretakers lead structured play and learning activities. “You enter one of our centers after walking through the slums, past awful smells and poor infrastructure, and it’s like an oasis of happy, playful children,” says Habib, who adds that Kidogo also provides healthy meals and works closely with parents to teach them about nutrition and hygiene.

In addition to its own centers, the organization also runs a training program that helps owners of local day cares overhaul their businesses and brand them as Kidogo franchises. “They’re able to attract more clients and improve their profits,” says Habib. The owners, whom the organization calls “mamapreneurs,” are also taught financial literacy and how to make the most of limited resources. “We show them how to create toys from locally available recycled materials, like toilet-paper rolls and cartons,” Habib explains.

Between Kidogo’s three flagship centers and seventy-six locations run by mamapreneurs, the nonprofit serves almost two thousand children. Habib, who has collaborated with Columbia’s Tamer Center for Social Enterprise since earning her MPA at the School of International and Public Affairs, hopes to expand the organization throughout Kenya by 2021 and eventually to neighboring countries. “Our vision is to be the leading network of high-quality, affordable childcare centers in East Africa,” she says.

The farthest-reaching impacts of Kidogo’s work will materialize in years to come. “With childcare, you often don’t see the fruits of your labor until the kids are teenagers and adults, when they have better high-school completion rates and are more likely to go to college,” says Habib. “We’ll see the true benefits decades from now, when our Kidogo kids are contributing members of society and doing incredible things.”

It's a sunny afternoon in Durham, North Carolina,

and at a picnic table outside a bar downtown, Mac McCaughan '90CC is nursing a lager and fondly reminiscing about the Butthole Surfers, the legendarily anarchic Texas band. A half dozen of McCaughan's employees, all twentysomethings, lean in and listen with amusement. But McCaughan isn't just another boss buying a round after work. At the next table over, a middle-aged customer recognizes him and points him out to a buddy: "Well, looks like we have a bona fide rock star in our midst."

McCaughan, a slight, energetic fifty-two-year-old, *is* a rock star in the eyes of many. The singer, guitarist, and leader of the band Superchunk, which has released eleven albums since the late 1980s, McCaughan pioneered a brand of smart, heartfelt, and melodic punk-inspired music that has become a beloved part of the American indie scene.

But his influence extends far beyond Superchunk. Merge Records, which McCaughan cofounded with his bandmate Laura Ballance in 1989, is one of the longest-running success stories in the American independent-music industry: a small business with an outsize cultural impact. The label's roster reads like a who's who of indie rock: Arcade Fire, the Magnetic Fields, Neutral Milk Hotel, Wye Oak, Spoon, Bob Mould, She & Him, the Mountain Goats, and Waxahatchee, as well as a slew of other great bands.

As music writer Steven Hyden once put it, "You can't talk about the history of American indie rock without mentioning the name Mac McCaughan."

"The better-known Merge artists represent the most accomplished songwriters of their generation," says Jonathan Poneman, cofounder of Seattle's Sub Pop label, a contemporary of Merge's.

"This is a grandiose comparison," Poneman continues, "but think of combining the

talents of Bruce Springsteen with those of his original A&R person, the legendary John Hammond, and you'd have something approximating Mac's gifts. He's an exuberant performer and accomplished tunesmith who has a knack for being able to discern greatness in its raw form."

Merge is headquartered not in some sleek, anonymous office park but in a two-story yellow-brick storefront sandwiched between a furniture store and a hair salon that serves wine. Thanks to successful albums by the Magnetic Fields and Neutral Milk Hotel, McCaughan and Ballance were able to buy the building in 2001. Back then, Durham wasn't the "it" town it is today. Now, hip restaurants, boutique hotels, and galleries are crammed into its three-quarter-square-mile downtown, and the employees of tech companies and startups occupy luxury lofts installed in the former tobacco warehouses nearby.

McCaughan's office is packed with knickknacks and memorabilia from his thirty-year career. Sunlight flits through the trees just outside the second-story window; framed posters, show fliers, and album art cover the walls, and piles of vinyl records cover much of the floor.

"It happened so gradually that I don't think there was any one moment where it was like, oh, now we have a record label," McCaughan says. "We're just doing a slightly more professional version of what we've always been doing"

As a kid growing up in the seventies, McCaughan was into the popular hard rock of the time — bands like Van Halen, the Who, and AC/DC. But in 1981, when he was thirteen, his family moved from

ILLUSTRATION BY LENA SMALL ORIGINAL IMAGE BY JASIN MOORE ZUMAPRESS.COM



MAJESTIC SHRED

Merge Records cofounder Mac McCaughan '90CC has spent thirty years putting out the best of American indie rock

By Michael Azerrad '83CC

Fort Lauderdale, Florida, to Durham after his father got a job as an attorney for Duke University. When McCaughan saw a couple of hardcore-punk bands at the Duke Coffeehouse, a light went on: it was much more fun to see music up close than in vast arenas, music that was made not by otherworldly rock stars but by people who were pretty much like him.

When it came time for college, McCaughan applied to Columbia at the urging of a family friend; he remembers being eager to get to New York, a music mecca. During his freshman year, in 1985, he met Nashville transplant Laura Cantrell '89CC. "He was this wiry-looking punk-rock kid with shaggy hair," Cantrell recalls. "And he had more records in his room than anybody else in his dorm. He was already kind of a standout by the time I met him."

McCaughan and Cantrell started a folk-country duo called Potter's Field that played the old Ferris Booth Hall café, the Furnald Folk Fest, and the Postcrypt Coffeehouse, in the basement of St. Paul's Chapel. But McCaughan was a punk rocker at heart and soon tracked down other punk fans at school. Students from cities like Boston or Washington often let their friends' bands sleep on their dorm-room floors when they played gigs in New York, and through them, McCaughan was soon connected to the exploding mid-eighties indie underground.

McCaughan majored in history, a subject he still loves, and he says his education imparted a key lesson: "I learned how to think critically at Columbia," he says. "I use that every day." As an undergraduate, McCaughan also studied studio art with Nicholas Sperakis, an experience that had a different kind of influence on his career — McCaughan's woodcuts have since adorned several Superchunk album covers, from its self-titled 1990 debut to its most recent release.

After taking a year off to play in bands in Chapel Hill, the college town a few miles down the road from Durham, McCaughan returned to Columbia in 1988 for his junior year and formed a



Superchunk circa 2001: Jim Wilbur, Jon Wurster, Mac McCaughan, and Laura Ballance.

band called Bricks with Cantrell and his friends Andrew Webster '90CC and Josh Phillips '91CC. Because they rehearsed in McCaughan's apartment on West 108th Street, playing a drum set was out of the question, so for percussion they used suitcases, cardboard boxes, and plastic containers filled with rice. McCaughan set some ambitious goals for Bricks: release a seven-inch single and a cassette-only album and play CB's Gallery downtown — all of which they achieved.

"He wanted to have his own band," says Cantrell. "It wasn't a question of whether he could or not — he'd already decided: *I'm going to do this.*" It was a key inspiration for Cantrell, who was just beginning to realize her own identity as a musician. "He just made it seem possible," she says. Sure enough, Cantrell would become an outstanding country singer-songwriter (Bob Dylan and Elvis Costello are fans), with five albums to her credit (see *Columbia Magazine's* profile of Cantrell in the Fall 2012 issue).

Back in Chapel Hill the summer before his senior year, McCaughan started a band called Chunk. He convinced his then girlfriend Laura Ballance to play bass, though she was shy and reluctant to perform onstage. "He can persuade you to do things that you might not want to do. Some people would call that manip-

ulative," Ballance says with a laugh, "but with him, it's sort of liberating."

Thanks to a \$300 loan from a friend of McCaughan's, Chunk recorded its first single the same summer; it came out that December on the newly minted Merge Records. "It just seemed easy, so we figured why not?" says McCaughan, who knew some of the mechanics of manufacturing and distribution from working at the beloved store Schoolkids Records in Chapel Hill. "We certainly weren't thinking it would be our job." Soon they were releasing singles by their friends' bands, too.

Back at Columbia for his senior year, McCaughan would take the PATH train to Hoboken to drop off Merge releases at the famous record store Pier Platters. Ballance, in her spare room in Chapel Hill, quietly did the accounting, stored the inventory, and packaged up records to be shipped, all while studying at the University of North Carolina and holding down two jobs. When they found out another band already had the name Chunk, McCaughan's mom suggested a new name: Superchunk.

McCaughan graduated in May 1990, around the time Merge released Superchunk's single "Slack Motherfucker," which quickly became one of the defining anthems of nineties indie rock. It's a joyous shout-along featuring perhaps the

worst cuss word available — “I’m working / But I’m not working for you / Slack motherfucker” — but it’s also a stirring declaration of one of the indie community’s most defining qualities: diligence. “At the time it was just a declaration of annoyance with people you’re working with at Kinko’s,” McCaughan says. “But it takes on larger meaning as you go along.” The song still regularly closes out Superchunk shows.

Superchunk released its debut album in September 1990. Merge didn’t yet have the ability to properly promote, publicize, market, and distribute a twelve-inch album, so they released it through the fledgling Matador Records, soon to be an indie powerhouse itself. Raves from the internationally influential British music press and dogged touring of its galvanic live show soon made Superchunk a big favorite of the indie-rock community. By 1993, Chapel Hill’s alternative-rock scene had exploded. *Entertainment Weekly* speculated that Chapel Hill might be “the next Seattle.” *Rolling Stone* suggested that Superchunk could be “the next Nirvana.” But the band resisted the inevitable offers from major labels, opting for artistic freedom and sustainability, a philosophy both Superchunk and Merge have embraced ever since.

While touring with Superchunk, McCaughan met other bands and started to put out their albums as well. In the mid-nineties, Merge released the Magnetic Fields’ *The Charm of the Highway Strip* and Neutral Milk Hotel’s classic debut album *On Avery Island*, as well as several other indie favorites, firmly establishing it as an artist-friendly label. McCaughan talent-scouted for the label using his encyclopedically deep social network. In 1992, his Columbia friend Jonathan Marx ’90CC told him about a sprawling, motley Nashville band that he played clarinet with. The band was Lambchop, which has since recorded fifteen highly acclaimed albums, all with Merge. Fourteen years later, an old friend and Superchunk fan named Howard Bilterman told McCaughan about a Montreal band he was playing drums in. That band was Arcade Fire, which became a massive global success and

provided a financial and critical windfall for Merge, especially after the band’s third album, *The Suburbs*, debuted at number one on the *Billboard* charts and went on to win three Grammy Awards.

McCaughan still keeps his ear to the ground. He buys lots of records — he discovered the London-based Afro-dance-pop band Ibibio Sound Machine because he liked their album cover. He listens to the radio (his favorite stations are Duke’s WXDU and the University of North Carolina at Chapel Hill’s WXYC). And he trawls the Web. But by now, the music world is also beating a path to Merge’s door. “There are a lot of different ways to find out about music, to the point that it’s a little bit overwhelming,” says McCaughan. “But frankly a lot of it is just talking to people who work here or friends you see out at a show.”

The label’s quality-control process is simple: “When people ask, ‘How do you decide which artists you want to work with?’ the answer has always been: artists that we like,” McCaughan says. “There are no criteria beyond that.”

Thanks to McCaughan’s good instincts and Ballance’s conscientious business stewardship (not to mention a little luck), the label’s reputation is so strong that fans buy records simply because they’re from Merge. Lately, though, streaming has cut into the music industry’s bottom line, and Merge is not completely immune. “Our budgets are smaller,” McCaughan acknowledges. “You look for ways to save money everywhere you can. But we’ve always been pretty good at that anyway.”

As we spoke, McCaughan was preparing to hit the road with Superchunk on the occasion of its new acoustic reworking of 1994’s *Foolish* album. Even after all these years, McCaughan, now married and a father of two kids (ages twelve and sixteen), is still up for the adventure of touring. And onstage, Superchunk plays at — or at least astonishingly near — the same high energy level it did when it started. “We’re playing a twenty-five-year-old’s music as fifty-one-year-olds — is that ridiculous?” says McCaughan. “But you

A Merge Records Listening Party

Superchunk

Tossing Seeds (Singles 89–91)

(1992) Merge’s very first CD release contained McCaughan’s Gen-X anthem “Slack Motherfucker.”



The Magnetic Fields

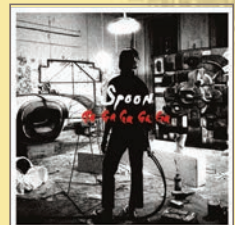
69 Love Songs (1999)

Stephin Merritt wrote this three-volume set of tunes as his interpretation of the American songbook.

Spoon

Ga Ga Ga Ga Ga (2007)

With this album, indie-rock legend Spoon finally broke into the mainstream while holding on to its experimental minimalistic pop.



Arcade Fire

The Suburbs (2010)

The Canadian-American group’s ode to the suburbs became Merge Records’ first number-one album on the *Billboard* charts.

She & Him

Volume Two (2010)

The duo of M. Ward and actress Zooey Deschanel banked another top-ten hit for Merge with this album, a favorite of baristas everywhere.





“It wasn’t a question of whether he could or not — he’d already decided: I’m going to do this.”

see people who are able to do that in a way that still feels vital.”

In recent years, Superchunk has also been galvanized with new energy, particularly after the 2016 presidential election, which prompted McCaughan to dash off a batch of furious but catchy songs. They appear on the band’s latest album, the raging, politically charged *What a Time to Be Alive*, recorded just weeks after the inauguration. Superchunk had never made such political music before, but “in the aftermath of a would-be fascist dictator becoming president, it would be weird to write a record about anything else — for me, anyway,” says McCaughan. *What a Time to Be Alive* has its share of invective, but the album also addresses ways to cope with political anger. “Break the Glass,” McCaughan has said, “is a song about realizing you are in an emergency situation and trying to not lose your shit so

you can respond to the ongoing disaster in a productive way.” One productive way the band responded was to send proceeds from various singles to Planned Parenthood South Atlantic, the environmental nonprofit 350.org, and the Southern Poverty Law Center.

McCaughan’s political music is part of a general philosophy about his responsibilities as an artist and a businessperson. “As cool as it is having a record label and being in a band, sometimes you think, *but what are we really adding here to make things better?*” says McCaughan. “Part of what we try to do is be part of the community.” And so Merge has cosponsored Durham’s Full Frame Documentary Film Festival, and McCaughan has served as a board member at Duke University’s Nasher Museum of Art. In the late 2000s, he and Ballance bought and renovated another building a few doors down from Merge to improve the

block, and they’ve invested in local businesses. Whether it’s his community activities, his business, or his diverse musical projects, there’s one thing that unites all of McCaughan’s pursuits, according to his old friend Laura Cantrell.

“There’s this basic core spirit of ‘I do this because I enjoy it,’” she says. “It’s an enthusiasm and a love for music and a curiosity that I still recognize from the guy who had all the records and the crazy hair.”

Still taking his cue from those everyman hardcore bands back at the Duke Coffeehouse, McCaughan says that, whether he’s playing it or packaging it, he sees music as a job to be done diligently, unlike the self-indulgent, preening arena rockers of yore. Rock music, he says, is “something you work hard at, as opposed to something you do to get famous.” And that is Mac McCaughan: a rock star, maybe, but really just a guy who works hard at what he loves.



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Rethinking Globalization

A Nobel laureate explains the hidden weaknesses of the American economy and why the US-China trade war is unwise and unwinnable

Joseph E. Stiglitz, a University Professor at Columbia, former chief economist of the World Bank, and recipient of the 2001 Nobel Prize in economics, spoke to *Columbia Magazine* about the ideas in his latest book, *People, Power, and Profits: Progressive Capitalism for an Age of Discontent*.

Q In *People, Power, and Profits*, you say that America is at war with itself over globalization.

What do you mean by that?

It is clear that people have very polarized views about globalization. Some see it as part of America's strength. They attribute to globalization much of the country's increase in standards of living and its global economic dominance in recent decades. Others blame globalization for many of America's problems, particularly because it has exposed domestic workers to increased foreign competition. So while the first group searches for ever wider new

trade deals, the second seeks to renegotiate existing ones more in America's favor.

There is a grain of truth in some of the criticisms of globalization. The deals were largely shaped by corporate interests, the potential gains were exaggerated, and insufficient attention was paid to the impact on America's growing inequality. The response, however, should not be the kind of trade wars that Donald Trump is waging — there are likely to be no winners from those — but a better-managed globalization, including a better management of the economic and social consequences. Some countries have done a much better job than the US at helping their citizens transition to a more globally integrated economy. Sweden and Norway, for example, have instituted industrial policies that ensure that new jobs get created when old jobs disappear, and they've invested heavily in retraining programs for workers.

Yet most economists still argue that globalization, with its promotion of free trade and the easy movement of goods, money, and information, is the key to growth and prosperity.

It's true that international trade can contribute to economic growth by allowing greater efficiencies. But the real keys to growth and prosperity are education, scientific breakthroughs, and advances in our understanding of how to organize large groups of people so that they might cooperate better. Economies that are guided by the rule of law and democracies based on the separation of powers are examples of profound achievements in social organization. The main reason standards of living are so much higher today than they were, say, 250 years ago is that we have built stable institutions that promote human creativity and enable people to live up to their potential. The real threat of our current political moment in the United States is the attack against truth and our truth-assessing



institutions, against our universities, and against science more broadly.

You write that the US government should spend more on education, scientific research, and infrastructure.

One of the fundamental issues I raise in *People, Power, and Profits* is that we've lost the balance between the private sector, the public sector, and institutions that include not-for-profits, cooperatives, foundations, civil society, and universities. Scientific and technological advances are at the heart of economic success, and underlying these advances is basic research, almost all of which is supported by the government. We've underinvested in basic research as well as in education and infrastructure. All of this undermines future standards of living and American competitiveness.

We've seen a resurgence of economic nationalism lately, with President Trump and other world leaders enacting

tariffs and other restrictive trade policies. What is at the root of this trend?

There are a number of factors involved, but surely one powerful force is that large segments of the populations of many advanced countries, including the US, have not done very well recently. While citizens at the top have seen their incomes soar, those in the middle have largely seen stagnation, and those at the bottom have fared even worse. A middle-class life seems to be growing out of reach for many families. Of course, we shouldn't allow our vision to be clouded by nostalgia. It is easy to look back on a glossy version of the past, skipping over the realities of widespread racial and gender discrimination. Besides, the arrow of time moves in one direction: we can't go back to the decades after World War II.

Do you think tariffs have any role in today's global economy?

Closing ourselves off from others through tariffs and other trade barriers will not

provide the solutions that discontented people are looking for. It will not restore manufacturing jobs or coal-mining jobs. The trade war with China won't even bring manufacturing back to the US: if tariffs placed on Chinese goods make them significantly more expensive here, corporations will simply move their factories to other developing countries. To the extent that any "onshoring" occurs, production may largely be robotized. The jobs created will require different skills than those possessed by the workers who have lost their jobs, and they will be located in different regions of the US. Countries that shut themselves off from trade also close themselves off to new ideas and resulting innovations.

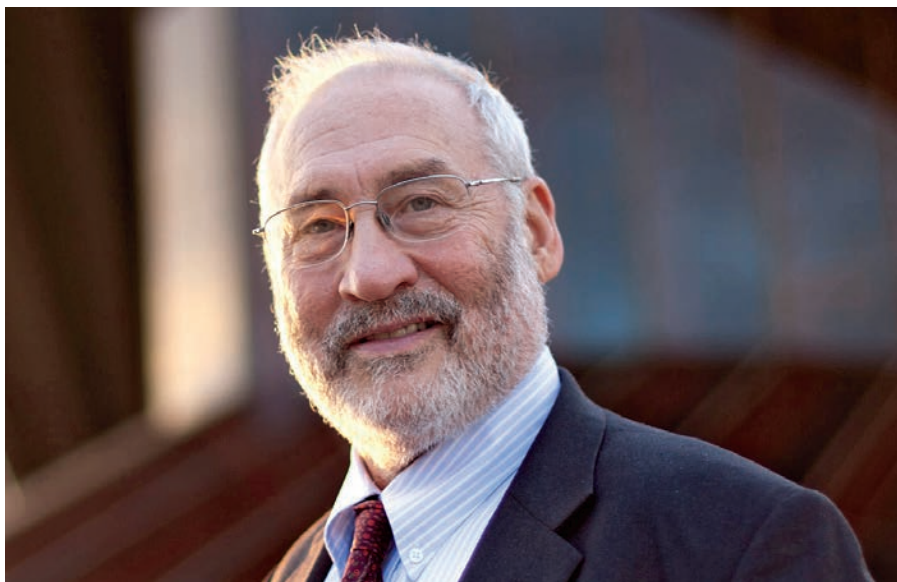
The US-China tariff war will soon enter its third year. Can you put this dispute in context — why is it so thorny?

At the end of the Cold War, there was a hope that all countries would converge to be liberal democracies with free-market

economies, and that in doing so everyone would prosper. Those hopes have now been dashed. Growth in many democracies has slowed, and the increase in wealth has been mainly at the top. Meanwhile, China's economy — a complex system combining markets with strong state intervention — has done very well. Some 750 million Chinese people have moved out of poverty, and incomes have risen more than tenfold since our engagement with China began, some fifty years ago. Back then, no one could have imagined that this country with a per capita annual income of around \$150 would by 2015 have a larger GDP than that of the US when measured in the standard way economists make such comparisons, by considering the two populations' purchasing power in local contexts. American firms could not have conceived of Chinese firms as rivals. China was viewed as a gold mine — a vast market for American goods and a place where our firms could make large investments and get large returns. But in the intervening years, Chinese companies have increased in strength, wages have risen, and regulations have been tightened. So even many of the corporations that served as China's cheerleaders in the US have lost their enthusiasm.

Though it is wrong to view the world through a zero-sum lens, in which increased prosperity for China comes at the expense of the US, this is the lens through which Trump and many economic nationalists see our relations.

Of course, there are some things that China does that are contrary to our interests, just as there are some things we do that are contrary to China's. But some of the accusations thrown around have little merit. For instance, China has been accused of manipulating its currency, keeping its value low in order to export goods more easily, even though it has not been doing this for years. China has also been criticized for requiring foreign firms that invest there to enter joint ventures, and often to share their intellectual property, with local companies. But many economists think that this is a good developmental policy, because



Joseph E. Stiglitz

it helps a country like China close the gap in knowledge between it and more advanced countries.

The question facing both the US and China is how to find a way to reap some of the gains from trade while recognizing that, for the foreseeable future, there will remain large differences in our economic and political systems. We will pay a high price if we try to de-link our economies.

There seems to be a growing feeling within this administration that the US should handle trade disputes with other nations directly, rather than working through the World Trade Organization. Has the WTO lost its teeth? Or is the US guilty of self-aggrandizement?

The US played a pivotal role in creating the WTO, and now it is the principal country trying to undermine it. Just as the rule of law must underlie a well-functioning domestic economy, so too must it underlie commerce across borders. Any international trade system has to have a mechanism for adjudicating disputes, and the WTO appellate body has shown itself to be effective and fair. (The dean of Columbia's School of International and Public Affairs, Merit Janow '88LAW, has served as a WTO appellate judge.)

The Trump administration is attempting to erode the international rules-based trade regime by refusing to support the appointment of new WTO judges, by engaging in trade wars rather than turning to the WTO to resolve disputes, by focusing on bilateral agreements, and by refusing in its bilateral discussions to promise not to engage in discriminatory practices. When combined with the unilateral abrogation of the Iran nuclear agreement, the betrayal of long-term allies in Syria, and other such actions taken by the Trump administration, the US is looking even to many of its friends like a rogue country.

You write that the US economy is essentially broken. Some observers might find that assessment overly harsh, given America's relatively high GDP and strong stock market. What would they be missing?

There are many aspects of the US economy that are truly impressive. Over the years, it has given rise to many important innovations — from the transistor to the laser to the Internet — that benefit not only Americans but people around the world. But America's economic model today is not sustainable economically, socially, or environmentally. Large segments of our society have not been doing well. Our life expectancy is on the

decline — remarkable for a country that is at the forefront of medical research. Our carbon emissions per capita are among the highest in the world. The US economy experienced a “sugar high” after the tax cuts of December 2017 and the corporate-expenditure increases of January 2018, but that was short-lived. Most forecasts see growth in 2020 at well below 2 percent — even though we are likely to be running a \$1 trillion deficit.

Would government regulation solve any of these problems?

We need to have more regulation to prevent another financial crisis of the kind we had in 2008, to stave off climate change’s devastating effects, and to ensure that our economy remains dynamic and that our corporations don’t exploit people — think of the opioid crisis, the epidemic of childhood obesity and diabetes, and Volkswagen’s “dieselgate.” Large parts of the US economy are now dominated by just a

few firms, so government regulation is required to ensure that corporations act ethically and that capitalism works as intended and competition thrives.

You’ve railed against laissez-faire economics as overly simplistic and short-sighted. Why do so many Americans still consider low taxes and unregulated markets essential for economic growth?

We’ve had four decades of propaganda saying as much. But the promises of supply-side economics were never realized. Inequality grew, growth slowed, large parts of the country faced stagnation or worse, and life expectancy, as I observed earlier, is now in decline. I wrote my new book partly to disabuse people of this persistent myth. We’ve had four decades of this experiment in country after country, and in country after country it has failed. It’s time to recognize this and to look for another economic model.

You advocate for “progressive capitalism.” What does that mean?

I use the term first to emphasize the importance of progress — to say that change *is* possible, that we can have higher standards of living and a more enlightened society, with, for example, greater equality and respect for human rights. But we need a new social contract, one that achieves a better balance between the market and government. I say “capitalism” to remind us that the market — better regulated and better governed — will have to be an important part of this new social contract.



People have called you an idealist. Has your optimism been shaken?

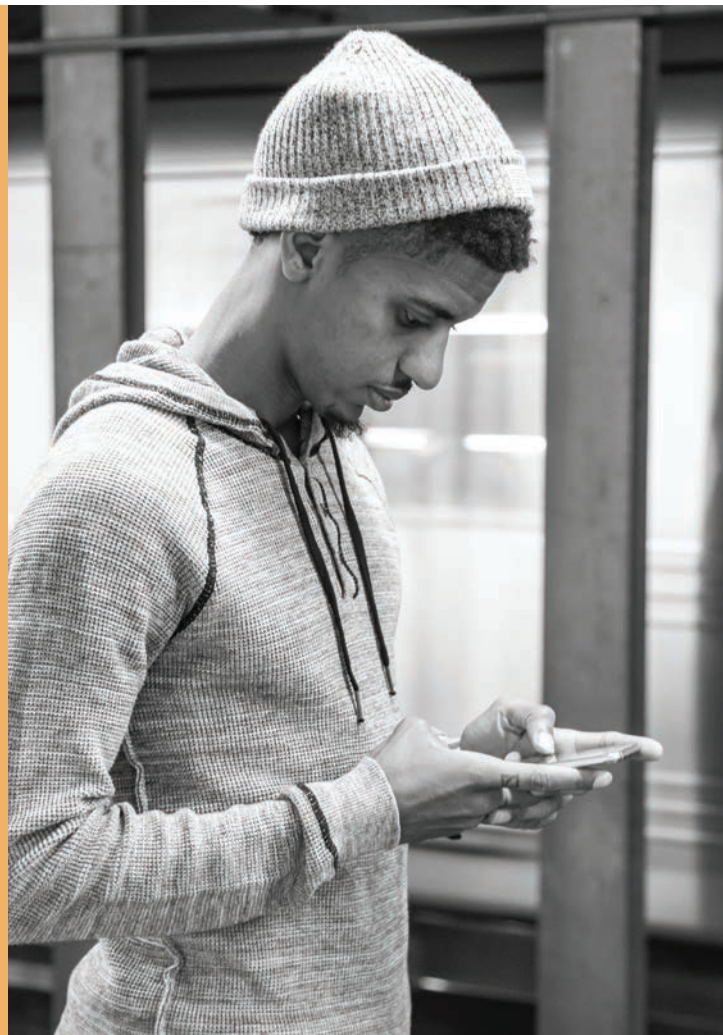
What’s happened in the last couple of years is enough to shake anyone’s optimism. Still, I am constantly heartened by the grassroots movements across the country, and especially by our students, who know that another world is possible and who seem determined to fight for it.

— David J. Craig

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EXPLORATIONS

FRONTIERS OF
RESEARCH AND
DISCOVERY



It's snowing ... plastic!

Microscopic shards of plastic from degraded water bottles, shopping bags, synthetic clothing, and other waste are floating in the atmosphere and falling back to earth in raindrops and snowflakes, say recent studies.

In an effort to determine the levels of microplastics in New York State's precipitation, a group of researchers led by Marco Tedesco, a climate scientist at Columbia's Lamont-Doherty Earth Observatory, is soliciting the help of ordinary citizens. This winter, Tedesco's team is recruiting dozens of New York residents to collect fresh snow samples, remove any tiny bits of plastic from the snow using special filtering kits, and then mail the extracted materials to Columbia for chemical analysis.

"We want to know exactly what kinds of plastic are prevalent in snowfall in different parts of the state," says Tedesco. "Then we'll look for clues to where the plastic originates."

The effort, which is scheduled to begin in mid-January, is part of a larger citizen-science project that Tedesco launched in 2018 called X-Snow. For an earlier phase of the project, scores of New Yorkers volunteered to regularly measure the depth of snow near where they live and to evaluate its other physical qualities, such as relative fluffiness or slushiness. This information will help scientists improve the remote-sensing techniques they use to estimate the depth of snow around the world and the rate at which it's melting.

Tedesco says that the new initiative, called PlastiX-Snow, was inspired by a number of studies that over the past few years have detected plastic in precipitation in such disparate locations as Denver, Paris, Tehran, and Dongguan, China. Last spring, scientists found plastic fragments in snowfall in the Arctic — evidence that the fragments are capable of traveling vast distances on wind currents.

"We are not sure how these plastic fragments are getting into the air," says Tedesco. "Are they blown off the surface of water bodies? Or are they being lifted off the ground by wind at landfills or industrial sites? If so, which ones? By assessing the types of plastic that are deposited by snowstorms at particular times and locations, we aim to learn more."

And then there are the health ramifications. Scientists have for years warned that microplastics could eventually find their way into our food and water supply. By assessing the concentration of microplastics in precipitation across New York, PlastiX-Snow may help public-health officials identify areas where crops, reservoirs, and aquifers should be tested for polymers.

The Columbia team will also be investigating whether plastic pollution affects the speed at which snow melts. This is an important question, Tedesco says, because snow reflects a tremendous amount of sunlight back into the atmosphere and thus plays a critical role in regulating the earth's climate.

To learn more, visit plastiXsnow.com.

Our amazing bones

Research suggests we have underrated the skeleton's role in maintaining good health

Over the past decade and a half, researchers in the laboratory of Gerard Karsenty, the chair of the genetics and development department at Columbia's Vagelos College of Physicians and Surgeons, have discovered that bones play a surprisingly active role in our physiology and health.

"Until a few years ago, even biologists regarded bones as largely inert," says Karsenty. "But we now know that they're constantly communicating with organs and tissues throughout the body."

The most influential studies to come out of Karsenty's research have focused on a bone-generated protein called osteocalcin, which turns calcium into bone mass. Karsenty and his colleagues have shown that osteocalcin has a wide variety of biological functions that were previously unrecognized.

ACUTE STRESS RESPONSE

Karsenty's most recent breakthrough, published this year in the journal *Cell Metabolism*, shows that the so-called fight-or-flight response is kick-started not by the hormone adrenaline, as scientists have long thought, but by osteocalcin.

BRAIN DEVELOPMENT

Karsenty and his team have shown that when female mice are genetically altered to produce low levels of osteocalcin, they give birth to offspring with abnormally small brains.

MEMORY

Older mice that exhibit signs of mental decline have been shown to reclaim their youthful cognitive abilities after receiving infusions of osteocalcin, a finding that could have implications for treating age-related memory loss in humans.

METABOLISM

Osteocalcin tells the pancreas when to increase production of insulin, a hormone that is responsible for converting blood sugars into energy. Karsenty's research is informing the development of experimental new drugs for type 2 diabetes.

SEXUALITY

A healthy male libido is dependent on bones, since osteocalcin helps to stimulate the production of testosterone.



An alternative currency created by Columbia professor Frances Negrón-Muntaner is exchanged in Humacao, Puerto Rico.

A new type of social currency

“What do you value the most?” reads the prompt on the screen. “My family,” says a middle-aged Puerto Rican man, speaking into a video recorder that’s attached to a special ATM in the lobby of El Museo del Barrio in East Harlem. After answering a few questions about what he thinks could be done to improve his community, he receives a handful of colorful bills that are accepted at select local establishments, including cafés, theaters, and museums.

This refurbished ATM, and the alternative currency it dispenses, is part of an interactive art project called Valor y Cambio (Value and Change) that Frances Negrón-Muntaner, a Columbia professor of English and comparative literature, launched in Puerto Rico in February 2019. Negrón-Muntaner, who is best known as a cultural critic and documentary filmmaker, has hauled her uniquely inquisitive three-hundred-pound cash machine to more than twenty locations on the island and around New York City, distributing “pesos of Puerto Rico” to nearly three thousand people in exchange for their stories and views.

“The goal is to get people talking about what they value in their communities, about what changes they’d like to see occur, and about how they might contribute to those changes,” says Negrón-Muntaner, who was born and raised in San Juan.

The bills are certainly conversation starters. Designed by the artist Sarabel Santos-Negrón in collaboration with Negrón-Muntaner (the two are not related), they feature portraits of Puerto Rican historical figures known for promoting social justice — like abolitionist physician Ramón Emeterio Betances and feminist labor organizer Luisa Capetillo.

“Businesses have been eager to participate,” says Negrón-Muntaner. Convincing people to spend the pesos is another matter. “Many people seem to value them too much as art objects, or for what they consider to be their cultural or political significance, to part with them.”

Valor y Cambio was inspired, Negrón-Muntaner says, by the ingenuity of people in many impoverished parts of the world who, having little access to official currencies, create their own

bills to be exchanged for food, child care, and other essentials. She hopes that by demonstrating how alternative currencies can work, Valor y Cambio will cause people to see the untapped potential of the sharing economy in their own communities.

“This is especially important right now in Puerto Rico, where people are suddenly demanding more of their government and social institutions,” says Negrón-Muntaner. Puerto Ricans’ heightened sense of political awareness is exemplified, she says, by the mass protests that forced the resignation of former governor Ricardo Rosselló.

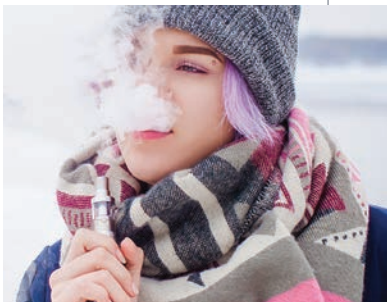
To amplify the voices of those who have participated in Valor y Cambio, Negrón-Muntaner plans to showcase the ATM testimonials in a series of art exhibitions in San Juan and New York City, in an academic report, and in a documentary film.

“There are so many stories that people have shared with us about their values and their visions for the future, and we want to tell as many of them as we can,” she says.

To see video, visit magazine.columbia.edu/valorycambio.

The latest on vaping risks

As public-health officials across the US struggle to determine why hundreds of people have become seriously ill after using e-cigarettes, a team of researchers led by Markus Hilpert and Norman Kleiman of Columbia's Mailman School of Public Health are investigating whether potentially toxic metals found in e-cigarettes' component parts — including the heating coils that turn vaping oils into an aerosol — might be contributing to reported lung injuries.



The team's preliminary findings indicate that dangerous amounts of nickel and chromium break loose from the heating coils and enter the vapors that users inhale. "We suspect that these metals could be interacting in dangerous ways with various chemicals found in the e-liquids," says Kleiman.

In experiments on mice, the researchers have also found that inhaled particles of nickel and chromium can become lodged in the brain. They say that this poses long-term health risks, especially for young people.



Our immortal partners

Columbia neuroscientists have access to some of the most advanced technology in the world, but sometimes they learn from the simplest creatures. The hydra, a half-inch-long relative of the jellyfish, belongs to a group of aquatic organisms that first appeared some 750 million years ago, in the earliest stages of life's

evolution. Possessing one of the oldest and most rudimentary nervous systems, it provides a valuable window into the fundamental mechanisms of the brain.

Researchers in the laboratory of Rafael Yuste are studying the hydra to learn how neural circuits store and communicate information. But the hydra has another claim to fame: it is said to be immortal, because its body is constantly renewing itself with fresh stem cells. "The hydra's regenerative powers are so incredible that if you break it up into individual cells and collect the cells in a test tube, they will reconfigure themselves into a proper animal within a few days," says Jonathan Lovas, a graduate student in Yuste's lab who is currently conducting experiments on the organism. "By observing how its nervous system reassembles itself, we hope to achieve new insights into the growth and development of nervous systems in more complex organisms, including mammals."

Why economists downplay climate risks

An international group of climate scientists, policy experts, and economists have issued a report warning that world leaders are being misled about the long-term economic costs of climate change.

The report's authors, who include Columbia faculty Ruth deFries, Alex Halliday, Geoffrey Heal, Michael Puma '98SEAS, '99SIPA, Alexander Ruane, and Marco Tedesco, say that top policymakers and business leaders have for years been receiving economic assessments "omitting or grossly underestimating" some of the biggest risks. They say that

because many of the threats posed by climate change are so novel, economists have yet to devise reliable methods of studying them and therefore tend to be conservative when predicting their disruptive potential.

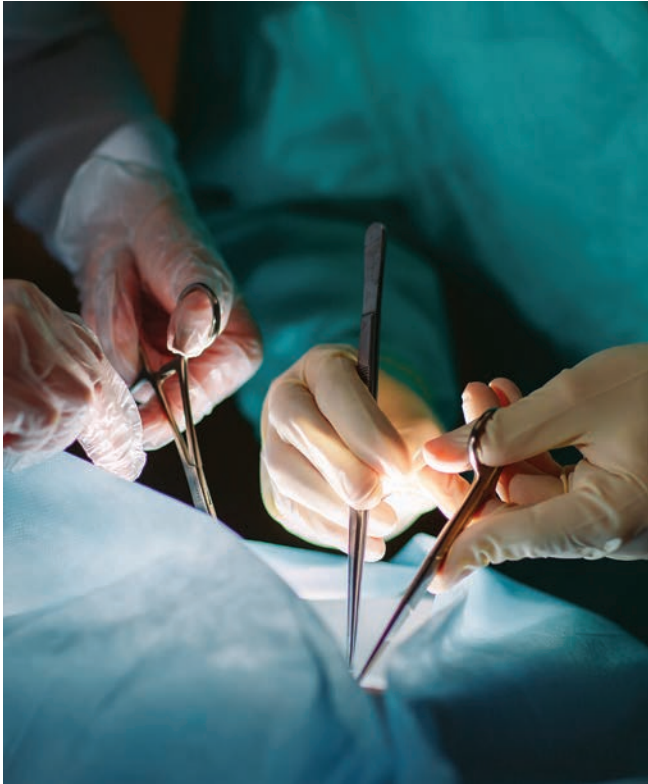
Among the clear threats to industry that are routinely downplayed by economists are rising sea levels, extreme

heat and humidity, intense floods and droughts, and loss of biodiversity.

"The lack of firm quantifications is not a reason to ignore these risks," the researchers write. "When the missing risks are taken into account, the case for strong and urgent action to reduce greenhouse gas emissions becomes even more compelling."



Does the US transplant system waste too many kidneys?



Every year, thousands of Americans die while awaiting a kidney transplant — a fate that’s usually blamed on a shortage of donated organs. But a new study by Columbia researchers reveals that many patients with chronic renal disease miss out on getting a donated kidney because transplant centers demand organs of unnecessarily high quality.

The study, led by Sumit Mohan, an associate professor of medicine and epidemiology at Columbia University Irving Medical Center, examined the histories of

approximately twenty-six thousand patients who died while awaiting a kidney transplant between 2008 and 2015. It found that the vast majority of these patients had multiple opportunities to receive a transplant but that the available organs were declined by their transplant teams — typically without the patients’ knowledge — and subsequently given to people with less-critical needs. On average, the study found, each deceased patient’s team was offered sixteen kidneys that were deemed unsuitable.

“In 93 percent of these instances, the transplant teams cited concerns about

‘organ or donor quality’ in declining the offers,” says Mohan, who notes that few organs were rejected for being bad immunological matches. “Yet ultimately the kidneys were accepted for transplant in other patients.” (While Mohan and his coauthors were not able to track the outcomes of those subsequent transplants, they note that past research has shown that the number of times a kidney is declined does not affect a transplant’s chance of success.)

Mohan and his coauthors say part of the problem is that the US Centers for Medicare and Medicaid Services, which evaluates and publicly rates kidney-transplant centers, places too much emphasis on the fraction of transplants that each center executes successfully and too little on the number of patients served. Transplant centers are therefore rewarded for performing operations that they know will go smoothly and avoiding slightly riskier operations that, if performed more frequently, would save lives.

According to Mohan, whose paper appears in the online journal *JAMA Network Open*, the apparent risk aversion helps to explain why the US discards nearly 20 percent of all donated kidneys — a much higher rate than other countries.

To make the US transplant system more efficient, Mohan and his colleagues

recommend that the Centers for Medicare and Medicaid Services update its evaluation and rating system. They also suggest that better communication between patients and transplant centers is needed. Currently, Mohan says, transplant centers don’t ask patients how selective they want their physicians to be when scrutinizing available kidneys, nor do they typically disclose to patients when organs are declined, or why.

“Physicians must act quickly when deciding whether to accept particular organs, so they cannot consult with patients in real time,” he says. “However, there’s no reason doctors can’t discuss in advance how cautious or aggressive patients want their transplant team to be in making these decisions. Does a patient want to accept the next available kidney? Or does she prefer to hold out for an organ from a young, healthy donor? A patient should have a say in that.”

Giving patients the option of instructing doctors to use a more liberal standard in accepting kidneys poses few risks, Mohan insists, because all donated kidneys taken into the nation’s organ-allocation system are of relatively high quality.

“The bottom line is that it’s often better to get a less-than-perfect kidney sooner than to wait for the perfect kidney to come along,” he says.



An elevator to the moon

Long before rocket ships were invented, stargazers dreamed of building a tower to the heavens. In 1895, the Russian scientist Konstantin Tsiolkovsky went so far as to draft plans for a forty-thousand-kilometer-high “celestial castle” inspired by the Eiffel Tower.

Now Zephyr Penoyre and Emily Sandford, two Columbia astronomy PhD candidates, have proposed a modern twist on the idea. In a paper posted in the online research repository arXiv, they suggest that a cable made of an ultra-strong material like graphene or Kevlar could be strung between the earth and the moon, forming the backbone of a “space elevator” that would ferry travelers and supplies back and forth. The cable, anchored to the moon’s surface and dangling just above the earth’s atmosphere, would be held taut by our planet’s gravitational pull. Space travelers would ride a rocket up to a loading dock at the base of the elevator and from there take a solar-powered vehicle to the moon.

“The two-hundred-thousand-mile voyage would take a few weeks to a few months,” says Penoyre.

Other research groups have proposed various types of cable-based aerial lifts to the moon before, but Penoyre and Sandford present an unusually detailed analysis of the concept’s technical and financial feasibility. They say that their system, which they call the Spaceline, could be built for a few billion dollars using current technology and that it would lower the cost of moon voyages by reducing the need for gas-guzzling rockets. Penoyre and Sandford say that this could facilitate more frequent scientific expeditions to the moon and possibly even industrial ventures, such as the mining of rare minerals that are abundant on the lunar surface.

“The Spaceline would become a piece of infrastructure, much like an early railroad, allowing for the easy movement of people and supplies in outer space,” says Penoyre.

STUDY HALL RESEARCH BRIEFS

Breathing easy in the Empire State

A sharp reduction in air pollution in New York State has prevented thousands of premature deaths since 2002, according

to a study led by Xiaomeng Jin, a PhD student in atmospheric chemistry at Columbia’s Lamont-Doherty Earth Observatory. The cleaner air is largely the result of stricter limits on vehicle and power-plant emissions.

Left in the coal dust Coal consumption in America is likely to drop by 25 percent over the next decade, jeopardizing the economies of dozens of counties that are almost wholly dependent on coal mining, according to researchers at SIPA’s Center on Global Energy Policy.

A new take on addiction Gay women are four times as likely as straight women to use marijuana on a daily basis, and for bisexual women the factor rises to seven, according to a study by Morgan M. Philbin, Pia M. Mauro, Emily R. Greene ’17PH, and Silvia S. Martins of Columbia’s Mailman School of Public Health. The researchers suspect that many gay and bisexual women are self-medicating to ease the stigma of being in a sexual minority.

Mealtime for mutants A team of evolutionary biologists led by Columbia professor Peter Andolfatto have determined that the monarch butterfly evolved to be able to eat milkweed, which is deadly to most insects, by accumulating a suite of genetic mutations in a precise order. The scientists demonstrated this by painstakingly introducing the same mutations, one by one, in fruit flies, enabling them to eat milkweed too.

Starlight, not so bright A star in the constellation Cygnus known as Tabby’s Star has long baffled scientists by periodically dimming for days or weeks at a time. Now Columbia astronomers Brian D. Metzger, Miguel A. S. Martinez ’19CC, and Nicholas C. Stone have proposed an explanation: they hypothesize that an exomoon is orbiting the star and slowly breaking apart, causing an ever-expanding cloud of debris to obscure the star’s light.

Born to sing Sarah M. N. Woolley, a neuroscientist at Columbia’s Zuckerman Institute, along with postdoctoral researcher Jordan Moore, has successfully mapped the neural circuits that enable young songbirds to learn the complex patterns of trills, peeps, and warbles sung by their parents. According to Woolley, the study offers insights into children’s ability to acquire language.

Epilepsy relief in a laser? Columbia engineer P. James Schuck has developed a microscopic laser — whose width is just one thousandth that of a human hair — intended to be implanted in the brain and used to treat neurological disorders such as epilepsy.

NETWORK

YOUR ALUMNI
CONNECTION



Time to Talk about Tampons

When Jordana Kier '14BUS first decided to launch Lola, a line of organic feminine-care products, she didn't know much about what went into making a tampon. And, she realized, neither did anyone else. The FDA does not require manufacturers of tampons to disclose product ingredients, which means, she says, that "many women are putting synthetic fabrics, dyes, and fragrances into their bodies every month without even knowing it.

"There was basically no transparency around an incredibly intimate product. I knew that we could do better. And when I did start to give it some thought, it felt like the entire business model was antiquated."

Kier, a classically trained pianist and undergraduate music major, never imagined that she would end up working in women's health. She spent her post-college years in arts administration and began her MBA with

the assumption that she would return to that field. But while at Columbia Business School, Kier became interested in entrepreneurship and started thinking about areas where she, as a consumer, was dissatisfied. Feminine-hygiene products were at the top of her list.

Kier teamed up with a friend, Alexandra Friedman, and together they started Lola, which offers three distinct solutions to problems Kier identified in the feminine-care industry. First, Lola tampons, pads, and liners are all made from organic cotton, with no synthetic additives. Second, Lola works on a subscription model, which allows people to customize their orders by product, number, and frequency according to their specific needs. As Kier says, "Everyone's period is different, and when you're buying a generic box from the drugstore, you're not necessarily getting what works best for you." And, third, Lola helps destigmatize the issue of menstruation and gets women talking about their

own experiences by holding community events and educational forums.

“When we started the company, in 2014, we discovered how much misinformation there was out there,” Kier says. “We were often pitching to groups of men who didn’t even understand why tampons came in different sizes. The conversation is not where we want it to be yet, but we’re making strides.”

Despite some uncomfortable pitches, Lola raised over \$35 million in funding, and the company recently expanded its line of products to include Cramp Care — an essential-oil blend and daily multivitamin designed to reduce period pain — and a first-period kit. Lola also offers a line of sexual-wellness products, such as condoms, lubricant, and cleansing wipes. “We really want to be with our customers from their first period through their first hot flash,” says Kier.

Kier says that when she started Lola, she became attuned to the fact that millions of American women lack access to feminine-care

products. “I was shocked to learn that you can’t use food stamps to buy these extremely necessary products,” she says. Lola donates a portion of its profits to a variety of women’s health charities and also works with the nonprofit organization I Support the Girls to supply Lola products to women in need.

In June, Lola also teamed up with the advocacy organization Period Equity to launch a national campaign to end sales tax on menstrual products, often called the tampon tax. “Half of the population has a period, yet thirty-three states still tax these products as luxury items,” Kier says. The campaign will include educational efforts to make people aware of the problem and, eventually, legal action against states that have not repealed the tax.

“The tampon tax is not just a financial issue; it’s discrimination,” Kier says. “We see Lola as part of a bigger fight about gender equity and about not marginalizing women’s health.”

— Rebecca Shapiro

3 Podcasts for History Lovers



The Secret History of the Future

Seth Stevenson '11JRN (Knight-Bagehot Fellow), cohost and cowriter
A joint production of Slate and the Economist, where hosts Seth Stevenson and Tom

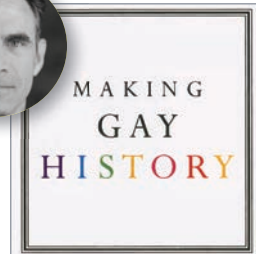
Standage work respectively, the podcast explores how the past is prologue when it comes to modern technology. Episodes seek answers to such intriguing questions as “What can Victorian-era polar exploration teach us about space travel?” and “Could we go back to wind-powered ships?”



The Bowery Boys

Tom Meyers '97CC, cohost
This biweekly podcast from history buffs Tom Meyers and Greg Young delves into the little-known lore of New York City. Recent episodes explore the

Tombs, Manhattan’s legendary prison; explain how the bagel became New York’s iconic food; and introduce us to Steve Brodie, a nineteenth-century daredevil who claimed to have jumped off the Brooklyn Bridge and lived to tell the tale.



Making Gay History

Eric Marcus '84JRN, '03GSAPP, founder and host
Author Eric Marcus (known for cowriting Olympic diving champion Greg Louganis’s best-selling memoir) has

spent the last several decades conducting interviews for a comprehensive oral history of the LGBTQ civil-rights movement. In his podcast, he shares some of this extensive audio archive, which, as he puts it, “brings our history to life through the voices of the people who lived it.”

— Gary Shapiro '93LAW



CENTER RIGHT: BENJAMIN STONE PHOTOGRAPHY; BOTTOM RIGHT: JORDAN MATTER

ASK AN ALUM: SO YOU THINK YOU CAN WRITE A MEMOIR?

Lilly Dancyger '12JRN edits personal essays and memoirs for two online publications and a literary press, and she teaches classes on memoir writing. She is the editor of *Burn It Down*, a new anthology of essays on women's anger, and is working on her own memoir, *Negative Space*.

Tell us a little about your writing classes.

I teach classes for writers from different backgrounds and at all levels. One of my favorites is a class for writers with a book project already underway. We dig into how to shape personal experience into narrative, and the ways in which a story can start to take on its own life.

So what makes a great memoir?

It's all about that alchemy of transforming the raw material of experience into something special. It's important to have a good story to tell, but there has to be more to it than merely recounting the events of your life. A big part of my job is telling people that the worst or most powerful thing that ever happened to them sounds boring. I don't say it to be mean! But I often find myself explaining that just having an experience — no matter how shocking or unusual — is not enough. A great memoir articulates something about being human and it will resonate with readers regardless of whether their lives look anything like the writer's.

You don't have to be famous to write a memoir, right?

No! Memoir used to be almost exclusively written by famous, influential people

as a way to cement their legacies. That's not true anymore, though celebrity memoirs still hold strong on the bestseller lists — Michelle Obama's *Becoming* has sold more than ten million copies so far. But if you're not a celebrity, you have to rely on artistry to drum up the interest that's inherent in stories of famous people's exploits. The non-celebrity literary memoir is as much about exceptional storytelling and craft as it is about having an interesting life.

Can you name recent memoirs that exemplify the best of the genre?

There are so many to choose from. Tara Westover's *Educated*, about being raised by survivalists and not setting foot in a classroom until the age of seventeen; Terese Marie Mailhot's *Heart Berries*, about growing up on a reservation; Stephanie Land's *Maid*, about her time working as a house cleaner and struggling to provide for her daughter; and Kiese Laymon's *Heavy*, about a Black boy growing up in the South and grappling with weight, trauma, and societal failings, are a few that come to mind.

Why do these stories resonate with readers?

Because the writers use their personal experiences



to elucidate something universal. Westover describes a childhood most readers can't relate to directly. She's kept out of school for her entire childhood, burying guns and canned peaches to prepare for the apocalypse. But while the circumstances she describes — in vivid, gripping detail — may be foreign, the feelings at the core of the story are universal: her desire to believe the best of her parents; her ambition to escape her circumstances; her loyalty to family that she often puts ahead of her own well-being. In *Maid*, Land's struggle to make the smallest amount of progress toward a more stable life is more common than many realize. It resonated with readers who saw their experience, or their mothers' experience, reflected in literature for the first time.

Trauma seems to be a recurring feature in literary memoirs.

Yes — the hardest stories are often the most gripping, because the stakes are higher.

We want to know how memoir writers — including all of the ones I listed above — made it out OK. Writing about traumatic experiences can also be deeply healing for a writer, but there's more to it than that. As an editor I see a lot of personal essays that seem entirely motivated by the writer's need to document and share their pain. The writer revels in the catharsis of writing but hasn't taken the necessary next steps of processing that experience and turning it into something universal. When writers come to me with their raw personal experiences, I understand the weight of the trust they're putting in me, and I push them hard to shape those experiences into essays that transcend the events they're based on. I remind them that "what happened" is a lump of clay for them to sculpt, and it's up to them to shape it into something beautiful. As an editor and a writer, I'm always pushing for the bigger story buried under the surface of personal experience.

Your Last-Minute Gift Guide

Buy alumni, for alumni



Farfalle earrings cast in resin with natural pearls from Chefanie, founded by Stephanie Nass '13CC. \$185. chefanie.com



CBD-infused honey, salt, or olive oil from Alto Essentials, cofounded by Jonah Reider '16CC. \$19 for a box of ten single servings. altoessentials.com



Rib-knit scarf from Grete, founded by Paulina Dougherty '18BUS. \$40. grete.com



Home gardening kit from Urban Leaf, cofounded by Nate Littlewood '17BUS and Rob Elliott '15SEAS. \$22. geturbanleaf.com



Cooking-class gift card from CocuSocial, founded by Billy Guan '15SEAS. cocusocial.com



Monogrammed bathrobe from Weezie, cofounded by Lindsey Johnson '18BUS. \$190. weezietowels.com

Jerky-of-the-month subscription from SlantShack, founded by Josh Kace '07SEAS. Starting at \$34.99 a month. slantshack.com



Ann Arbor Blues Festival vinyl albums, co-produced by Parker Fishel '10CC. Audio preservation done at Columbia's WKCR-FM by Fishel and Ben Young '92CC. \$60 for volumes 1 and 2. thirdmanstore.com



Moisturizing stubble cream and oil from Fur, cofounded by Laura Schubert '11BUS and Lillian Tung '11BUS. Bundle pack: \$61. furyou.com



Watermelon Glow Sleeping Mask from Glow Recipe skin care, cofounded by Christine Chang '10GSAS. \$22–45. glowrecipe.com

Suitcase from Away, founded by Steph Korey '15BUS. Carry-on size: \$225. awaytravel.com



Nail polish from Sundays, founded by Amy Ling Lin '16BUS. Wellness Gift Box: \$55. dearsundays.com

Advocate for Accessibility

Dennitah Ghati '04SW smiles as she steers her wheelchair along the sidewalk, across Broadway, and up a ramp that leads to the entrance of the Columbia Alumni Center. When she hits the button that makes the two front doors swing open, she breaks out into a wide grin.

“New Yorkers may take these little things for granted,” she says. “But where I come from, this is exactly the kind of access we’re striving for.”

Ghati comes from Nairobi, where she is serving her second term as a member of

parliament. One of Kenya’s few lawmakers with a disability, she advocates for greater accessibility in buildings and on sidewalks, inclusivity in schools and workplaces, and increased cultural acceptance for the disabled.

“In Kenya, having a disability is stigmatized. People see it as a curse on the family,” she says. “It’s deeply ingrained, but I believe we can change that.”

Ghati always knew that she wanted to go into public service. Born able-bodied in Kenya’s rural Migori County, near Lake Victoria, she spent most of her early career working for



Dennitah Ghati speaks to constituents in Kenya.

equal rights for women and girls. She studied social work at Columbia, and after graduating in 2004 she returned to Kenya and founded an NGO that helps victims of domestic and gender-based violence.

In 2013, Ghati became the first woman ever elected to parliament from Migori County. But just a year later, she was riding in a car heading back to Nairobi from her home district when a tire burst. The car flipped over, and Ghati damaged her spinal cord. For the last five years, she has used a wheelchair.

“Of course, people have empathy, but I think until you or a family member are disabled, it’s impossible to really understand the needs of that community,” she says.

When Kenya ratified a new constitution in 2010, the country adopted UN standards that establish equal rights for people with disabilities, and Ghati spends much of her time ensuring that the country is compliant. She travels widely to learn how other countries address the needs of the

disabled. In addition, she is spearheading a campaign to make sure that people with disabilities are included in Kenya’s next census, which will be taken in 2020.

“Traditionally, families would hide disabled people during the census, because they are ashamed,” she says. “But if we don’t know how many people need resources and where they are, it’s impossible to meet those needs.”

Ghati is particularly committed to advocating on behalf of women and girls with disabilities, a group that she views as Kenya’s most vulnerable population. In Kenya, women with disabilities are far more likely to be victims of violent crime and of brutal practices like female genital mutilation, Ghati says.

“I’m continuing the work that I did before the accident, but for a segment of the population that needs me the most,” she says. “The accident might have taken away my ability to walk, but it didn’t take away my drive to move forward.”

— Rebecca Shapiro

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The Borscht Identity

Food plays a starring role in almost every part of Jewish culture. There would be no Passover without matzo-ball soup, no Rosh Hashanah without apples and honey, and no visit to a Jewish mother without a meal — or three.

But which foods and recipes best represent “the rhythms of the Jewish calendar and the contingencies of the Jewish experience”?

That is “highly debatable,”

says Alana Newhouse '00BC, '02JRN, the founder and editor in chief of *Tablet*, an online magazine of Jewish news and ideas. Still, in her new book, *The 100 Most Jewish Foods*,

she summons a cadre

of voices to create a fun

list of everything you might

find on Bubbe's table, from the traditional

(bials, chopped liver, brisket) to the slightly more

unconventional (Sweet'N Low packets, Bazooka bubble

gum) to the downright irreverent (bacon). For Hanukkah,



with its emphasis on fried foods,

Newhouse shares legendary Jewish-

cookbook author Joan Nathan's

recipe for *sufganiyot* — jelly-stuffed

doughnuts (find the recipe online

at magazine.columbia.edu/donuts).

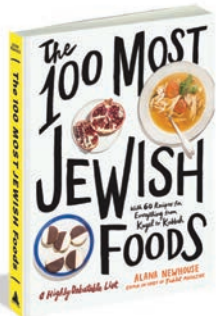
And to mark Christmas in the best

Jewish way, turn to the entry on

Chinese food — writer Marc Tracy

'07CC argues that a holiday Peking

duck is “a prayer you can eat.”



Isn't it ironic, don't you think?



Jagged Little Pill, a new Broadway musical directed by Diane Paulus '97SOA, recently opened at the Broadhurst Theatre. The show, based on the 1995 Alanis Morissette album of the same name, features arrangements by music supervisor Tom Kitt '96CC.

NEWSMAKERS

● Two Columbia alumni and one professor were recipients of 2019 MacArthur Fellowships, also known as “genius grants.” Writer **Valeria Luiselli '15GSAS** was honored for “challenging conventional notions of authorship in fiction, essays, and inventive hybrids of the two.” (See our review of her recent novel *Lost Children Archive* in the Winter 2018–19 issue of *Columbia Magazine*.) Urban designer **Emmanuel Pratt '03GSAPP** won for his work transforming abandoned buildings and vacant lots on Chicago's South Side into sustainable farms through the Sweet Water Foundation. And Columbia professor **Saidiya Hartman**, a member of the Department of English and Comparative Literature, won for her work tracing the aftermath of slavery in modern American society.

● **Claudia López '03SIPA** was elected mayor of Bogotá, Colombia. She will be the first female mayor of Bogotá and the first lesbian to lead any Latin American city. Many are hailing her victory as a step forward in a country where the LGBTQ community still faces significant persecution.

● Supreme Court associate justice **Ruth Bader Ginsburg '59LAW** won the prestigious Berggruen Prize, given annually to a thinker whose ideas “have profoundly shaped human self-understanding and advancement in a rapidly changing world.” Ginsburg is the first justice to receive the \$1 million prize; all previous winners have been philosophers.

● Three Columbians received a 2019 Carnegie Medal of Philanthropy, which recognizes people who have dedicated their private wealth to public good. **Henry R. Kravis '69BUS** and his wife, Marie-Josée Kravis, won for their work supporting education, community development, and the arts; **Robert F. Smith '94BUS** was honored for supporting underrepresented minorities in higher education and the workforce, as well as working to preserve and share stories of the African-American experience; and **Leonard Tow '60GSAS, '87BUS** won for the work that his foundation does in education, medicine, and criminal-justice reform.

● Columbia professor **Haruo Shirane '74CC, '83GSAS** was selected as the inaugural recipient of the International Prize in Japanese Studies from Japan's National Institutes for the Humanities (NIHU). NIHU is a consortium of six research institutes related to Japanese language, history, and culture.



AMY HUNGERFORD TO LEAD ARTS AND SCIENCES

Amy Hungerford, a longtime Yale professor and academic administrator, has been appointed executive vice president for Arts and Sciences and dean of the Faculty of Arts and Sciences. Her appointment begins January 1.

A scholar of twentieth- and twenty-first-century American literature, Hungerford comes to Columbia after leading Yale's humanities division since 2016. In that role, she oversaw a major capital project to create a central hub for humanities on Yale's campus and efforts to increase cross-school collaborations.

As head of Columbia's Faculty of Arts and Sciences, Hungerford will oversee the twenty-eight departments whose members teach students at Columbia College, the School of General Studies, the School of the Arts, the

School of Professional Studies, and the Graduate School of Arts and Sciences.

"Amy's career has combined notable scholarship and tireless mentoring with a wealth of experience in administering core academic programs," said President Lee C. Bollinger. "Her oversight of twenty-three humanities departments and programs at Yale has demonstrated a talent for effective stewardship of resources and for the recruitment, hiring, and advancement of the highest-caliber faculty."

Hungerford succeeds Maya Tolstoy, a marine geophysicist who has served as interim executive vice president for Arts and Sciences since September 2018, when statistics professor David Madigan stepped down after five years in the position.



POWER OF THREE

The women's cross-country team claimed its third straight Ivy title this fall, with seniors Katie Wasserman, Emily Acker, and Bianca Alonzo, junior Allie Hays, and sophomore Sofia Camacho all achieving top-twenty finishes in the league championship race. On the men's side, senior Kenny Vasbinder won the individual title for Columbia.



BUSINESS SCHOOL'S NEW HOME TAKES SHAPE

This past fall, Columbia administrators and faculty members joined construction workers at a “topping out” ceremony to mark the completion of the steel superstructure of the Ronald O. Perelman Center for Business Innovation. Together with the Henry R. Kravis Building, which topped out over the summer, this will become Columbia Business School’s new home in Manhattanville. The school’s two new buildings will open in 2022, providing the school nearly twice as much space as it currently occupies in Uris Hall and several satellite locations. “We are creating a new future,” said Dean Costis Maglaras. “We can now pursue our ambitions. We can provide a better education.”

MUHTAR KENT DONATES \$6M FOR CONFLICT-RESOLUTION PROGRAM

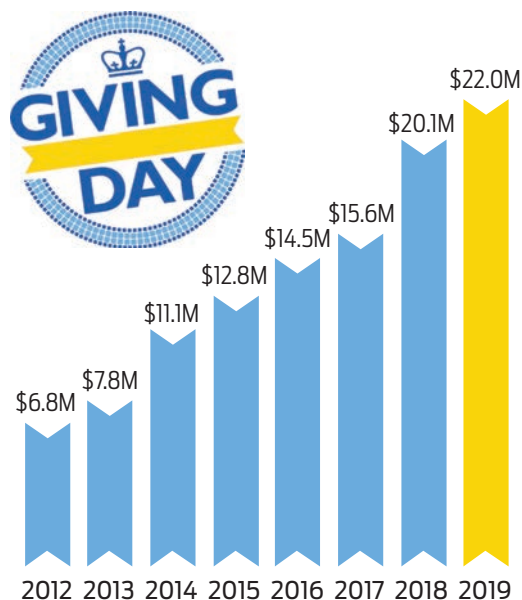


The former chairman and CEO of the Coca-Cola Company, Muhtar Kent, has donated \$6 million to the School of International and Public Affairs to establish a new conflict-resolution program.

The centerpiece of the Kent Global Leadership Program on Conflict Resolution will be an intensive weeklong training course for professionals from governments and intergovernmental institutions to be held annually in New York City beginning next summer. The Kent Global Leadership Program will also fund research at SIPA, an annual visiting professorship, fellowships for outstanding graduate students, and campus events.

Edward C. Luck ’72SIPA, ’01GSAS, the Arnold A. Saltzman Professor of Professional Practice in International and Public Affairs, will serve as the program’s inaugural director. Luck also directs SIPA’s international conflict-resolution program.

Kent, who stepped down as Coca-Cola’s chairman this past April after four decades with the company, received SIPA’s Global Leadership Award in 2019 in recognition of his contributions to the public good.



GIVING DAY BREAKS RECORDS

Columbia Giving Day, an annual twenty-four-hour fundraising initiative that brings together alumni, parents, faculty, staff, students, and friends from across the University, raised a record-breaking \$22 million this year. Donors around the world contributed a total of 18,622 gifts in support of Columbia’s global mission of research, teaching, patient care, and partnerships that address the pressing challenges of our time.

BULLETIN

PLATO'S GOT COMPANY —AND MAYBE COMPETITION

A group of Columbia and Barnard students, working with Columbia University Libraries, created a banner bearing the names of eight women authors that hung on the façade of Butler Library for the fall semester. The authors — Maya Angelou '03HON, Gloria E. Anzaldúa, Diana Chang '49BC, Zora Neale Hurston '28BC, Toni Morrison, A. Revathi, Ntozake Shange '70BC, and Leslie Marmon Silko — were also the focus of an exhibition inside the library. Among the artifacts on display was a similar banner that Laura Hotchkiss Brown '89GS attempted to unfurl during the 1989 University Commencement, only to be thwarted by security. (Brown's banner ultimately hung on the Butler façade for two months that fall, with the support of the libraries and the Institute for Research on Women and Gender.)



The eight names on the new banner were selected by a student committee, based partly on the results of an undergraduate survey. In a mission statement, the committee says its intent was to emphasize the need for diverse perspectives on campus. “[These women] come

from every walk of life and write about topics ranging from queer theory to black motherhood. Women, especially those from marginalized identities, are often left out of the Western canon, along with the complex and important themes they write about.”

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COLUMBIA WORLD PROJECTS TO LAUNCH INITIATIVES IN GHANA, UGANDA

Columbia World Projects, an initiative that helps academics connect with outside organizations to solve real-world problems, has announced two new programs aimed at improving public health and energy access in Africa. The first, led by Columbia public-health professor Darby Jack in collaboration with researchers from the University of California at Santa Barbara and the government of Ghana, will promote the use of clean-burning stoves in parts of Ghana where most people still cook over polluting open fires. The second, led by Columbia engineering professor Vijay Modi and colleagues



Ghanaians install a low-emissions stove.

from the School of International and Public Affairs, will design new data-driven methods of mapping energy demand in Uganda. The team's research will guide UN efforts to expand access to sustainable energy throughout the country.

TOP: EILEEN BARROSO; BOTTOM: COURTESY OF DARBY JACK

HOUSING GETS A BOOST

The Graduate School of Architecture, Planning, and Preservation has launched the Columbia GSAPP Housing Lab, a new interdisciplinary research initiative to encourage the design and development of innovative, sustainable, and affordable housing around the world.



The initiative is supported by a donation of more than \$2 million from the IDC Foundation, which grew out of the now-closed Institute of Design and Construction, in Brooklyn. The gift will also fund a new endowed professorship — the IDC Foundation Professorship of Housing Design — and financial-aid and student-research programs.

The Housing Lab will be led by GSAPP dean Amale Andraos.

Hilary Sample, an architect who has helped oversee GSAPP's housing-design curriculum since 2011, will be the inaugural recipient of the endowed professorship.



HOMECOMING TRIUMPH

The Columbia Lions notched their largest homecoming victory ever this past fall, trouncing the Penn Quakers 44–6 at Robert K. Kraft Field on October 19. Led by sophomore quarterback Ty Lenhart, who threw for 158 yards and rushed for ninety-five more, the Lions were dominant from the start, scoring forty-four unanswered points before the Quakers finally put a touchdown on the board in the fourth quarter. “We picked a good time to play our best football of the year,” said Columbia head coach Al Bagnoli. “I’m happy for our players, happy for the program ... We’ll use this as a springboard to just keep pushing it forward and keep improving.”

NEW CENTER FOR QUANTUM PHYSICS LAUNCHED

Columbia University has joined forces with New York City’s Flatiron Institute and Germany’s Max Planck Society to establish a new center for research in quantum physics, or the study of nature at the atomic and subatomic scales.

The Center for Nonequilibrium Quantum Phenomena aims to understand and control the properties of chemical elements and elementary particles for a wide range of practical applications. Specifically, researchers at the center hope to create new materials for

use in next-generation computing, sensing, and cryptography technologies.

The center will draw on Columbia scientists’ expertise in designing and conducting laboratory experiments and their colleagues’ theoretical and computational skills.

“We are all working on a common theme using complementary methods,” says Dmitri Basov, a Columbia physics professor who helped organize the center. “The idea of combining forces seemed so natural, given the substance of our research projects.”

The Illness Lesson

By Clare Beams '06SOA (Doubleday)

Midway through *The Illness Lesson*, the haunting new novel from Clare Beams '06SOA, a group of young women at a boarding school fall sick. Their ailments are measurable and visible — fevers, seizures, and raised red rashes. Nonetheless, the girls are ignored and their complaints dismissed.

Their elders conclude that if there is anything wrong with them, it is mental; they diagnose the girls not as sick but as “hysterical.” Seeking relief from their fevers and attention from those with power, they leave their beds in the middle of the night to stand in a snowstorm. In desperation, one cries out, “Do you think we’re *choosing* this?”

The novel takes place in 1871, and there is much about the horrifying treatment of women in it that is specific to that time period.

But the practice of gaslighting women and denying their physical pain is age-old, little-discussed, and sadly still relevant today.

Beams sets her story on a farm in rural Massachusetts — the site of a failed transcendentalist community founded by a once-famous philosopher named Samuel Hood. Samuel still lives with his twenty-eight-year-old unmarried daughter, the brilliant and complicated Caroline. When Caroline was a young girl, the community was visited by an ominous flock of blood-red birds. Shortly thereafter, her epileptic mother, Anna, died suddenly, and the community fell apart.

Now, over twenty years later, the birds have returned. But rather than seeing them as a harbinger of doom, Samuel takes them as a sign that he should launch his next project: a school for young women. The idea, and particularly the curriculum, is progressive for

the time — which feels important to Beams’s message. The misdeeds of the well-intentioned, she seems to be saying, are often worse than any others.

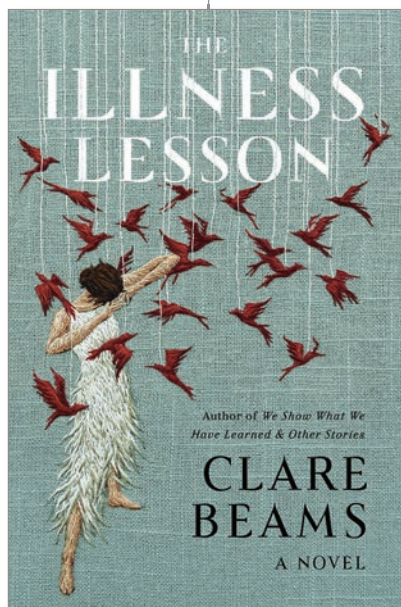
Overseen by Samuel and a young disciple named David, the school promises to teach classical languages and natural sciences, rather than societally appropriate subjects for women, like sewing and etiquette. Still, Caroline, who was home-schooled by her father, is relegated to teaching English literature: “Though Caroline was meant to be a walking embodiment of the school’s aims, that didn’t mean her feminine fingers belonged in its meatier pies.”

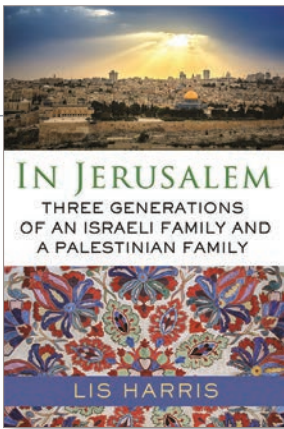
Soon it appears that the birds (which Caroline’s late mother had dramatically called “trilling hearts”) have again brought bad news. A controversial student — the daughter of a former member of Samuel’s failed community — joins the school, dredging up secrets from the past. Sexual tension crackles between Caroline and David, though he also turns out to be duplicitous. And then, one by one, the girls’ bodies begin to betray them: “They all said, I can’t control it. I’m not doing it. I don’t know how to make it stop.”

Eventually Samuel, desperate to curb the epidemic, summons an old friend, a physician, who confirms Samuel’s diagnosis of hysteria and proceeds to administer a ghastly “treatment” to the girls — which, sickeningly, is based on a real procedure. And then Samuel must watch again as a community born from his ideas begins to crumble.

The Illness Lesson is Beams’s second book. Her first, a story collection called *We Show What We Have Learned*, was lauded for its rich imagination and use of the surreal. Like her classmate Karen Russell '06SOA, Beams has proved adept at conjuring a macabre, slightly off-kilter world. Those elements are on display in this book, too, but it is unsettling to realize that the most troubling details are rooted not in fiction but historical facts. Beams deals with them unflinchingly, creating a feminist parable that, while often difficult to read, is deeply worthwhile.

— Rebecca Shapiro





In Jerusalem

By Lis Harris (Beacon Press)

Columbia professor Lis Harris grew up in a secular Jewish family in the United States fully alert, she says, “to the wrongs done to the beleaguered Jews across the ocean,” but with little sense of the “wrongs done to the Palestinian people.” In her latest work, the former *New Yorker* staff writer and the next chair of the School of the Arts’ writing program challenges that common myopia — what she calls the “reflexively uncritical, loyalty-born view” of Israel — and asks us to look at the Israeli–Palestinian conflict through a new lens.

In Jerusalem grounds the history of the State of Israel, its wars and politics, in the personal stories of two families on either side of the conflict. In West Jerusalem, Harris spends time with Israeli musicologist Ruth HaCohen. Across the border wall in East Jerusalem, she gets to know Palestinian speech pathologist Niveen Abuleil. Harris, who spent more than ten years gathering research and interviews for the book, also introduces us to the women’s extended families.

Ruth and Niveen are accomplished women. Along with their family members, who include lawyers, doctors, and educators, they want peace and a fair solution to

the conflict. The highlights of *In Jerusalem* are to be found in our encounters with these individuals and their collective memories, which Harris shares in careful, generous prose. The memory of the Palestinian village Lifta, which was destroyed in the 1948 war, serves as a touchstone for Niveen’s family’s sense of loss; the promise of a homeland free of oppression and based on righteous Jewish ethics pervades Ruth’s primarily leftist family’s dreams. We meet Israeli and Palestinian family members from three

generations and find them all to be profoundly sympathetic, loving, fearful, traumatized, and hopeful. Two aunts best embody polarizing perspectives on the conflict. Hannah Urbach, Ruth’s father’s sister, escaped Nazi Germany, and her family found asylum in Mandatory Palestine. Hannah’s father had been sent to Buchenwald, and she remembers the trauma of going to the Gestapo headquarters, “with its notorious cells and basement torture rooms,” to try to secure his

release. Her memory of the Holocaust and her view of Israel as a refuge from violence is juxtaposed with the experience of Niveen’s aunt. At twenty-one, Rasmia Odeh was accused of terrorism, illegally tortured, and served ten years at the Ramla prison before being released in a prisoner-exchange program. Rasmia’s story is shocking, but the chapter devoted to it is one of the book’s best.

The implicit premise of *In Jerusalem* is that standard top-down histories fail in their distance from people’s every-

day lives. Harris works from the ground up. She engages deeply with both families and does all she can to understand their views and represent them honestly. Recognizing the difficulty of that task, she will sometimes allow her subjects (most notably Ruth’s right-leaning and religiously conservative son, Yotam) to speak for themselves. Harris understands that the rhetoric behind hard-line views can be problematic. As she quotes from a letter written by Ruth and her husband, “We do not

enjoy the comforts of emotional coherence and moral clarity.” Still, Harris is clear-sighted and firm in her own view that the Israeli government is more oppressor than victim. She does not condemn the Palestinian people fighting to live in their occupied home of East Jerusalem (but neither will she excuse the violence of Hamas).

In Jerusalem has been published at a critical time in Israeli politics. Harris was able to comment on President Trump’s rash recognition of Jerusalem as the capital of



Niveen Abuleil’s family (left) and Ruth HaCohen’s family.

generations and find them all to be profoundly sympathetic, loving, fearful, traumatized, and hopeful.

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Israel but not on Prime Minister Benjamin Netanyahu’s faltering power and new allegations of corruption. Perhaps the subject will always be timely, though. The conflict seems intractable, and the suggestion that we might find peace and reconciliation if we just look beyond the stereotypes strains belief. Yet somehow, through the people she comes to know in Israel and Palestine, Lis Harris sees hope, and this brave book ultimately helps us see it too.

— Henry Gifford ’19GSAS

Broke

By Jodie Adams Kirshner '02JRN, '06LAW (St. Martin's)

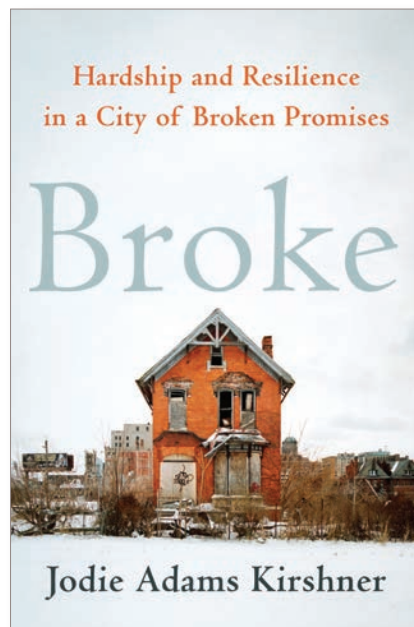
Outside of immigration, few political or social issues engender as much heated debate as income inequality. For decades, the gap between the haves and have-nots has been growing, and today millions of Americans face a daily struggle to maintain financial solvency and stable housing.

Countless newspaper and magazine articles, academic studies, and popular books — a notable recent example of the last category being Matthew Desmond's Pulitzer Prize-winning *Evicted* — have explored these issues. While most of these texts aim to investigate the systemic problems that contribute to cyclical poverty, *Broke*, from Jodie Adams Kirshner '02JRN, '06LAW, stands apart from the rest by focusing on one misguided policy response and the resulting devastating consequences. She focuses solely on the city of Detroit — most significantly, on its uphill battle back from bankruptcy and how that has affected tens of thousands of its most vulnerable citizens.

Kirshner claims that “bankruptcy and the austerity it represents have become a common ‘solution’ for struggling American cities” — and Detroit, which filed for Chapter 9 bankruptcy in July 2013, is the largest American municipality ever to do so. As a well-regarded expert in bankruptcy law, Kirshner, who is currently a fellow at Columbia Law School's Center for Contract and Economic Organization, is admirably equipped to examine the often misunderstood concept of an entire city going broke, and she proves herself an adept guide to this complex situation.

But what does bankruptcy — and the ensuing spending cuts — mean for the residents of a city already deeply plagued by economic decline? Kirshner provides plenty of statistics, which demonstrate with acuity the

interconnectedness of income and housing inequality, urban fiscal policy, population decline, and tax-base erosion. But the heart of this book is her powerful human-interest stories, which are likely to have the most significant impact on readers.



Drawing on more than two hundred interviews, Kirshner brings us an unforgettable cast of characters, including Miles, a Black construction worker in his mid-forties fighting to stay afloat as mistakes from his past threaten to derail his future; Robin, a white developer in her late forties seeking fortune by flipping properties in Detroit's dilapidated and vacant neighborhoods; and Lola, a twenty-something, college-educated Black single mother looking for whatever work she can find.

In telling these stories, Kirshner is clear about her desire to expose the myth of the American dream: the idea that all people, no matter their circum-

stances, can pull themselves up by their bootstraps and succeed. Nearly all of Kirshner's subjects demonstrate the falseness of the classic Horatio Alger narrative, and a theme of the book is that hard work is not nearly enough to counter decades of poor — and often racist — fiscal and social policies. Consider that in the 1950s, Detroit offered federally insured mortgages for whites only, a policy that was in place for decades in many areas of the US; or that, because of predatory banking practices and opportunistic developers, “between 2005 and 2015, mortgage foreclosure turned 100,000 Detroit homeowners into renters, eliminating wealth from local families and from the city”; or that “between 2000 and 2012 the number of employed Detroiters fell by nearly 55 percent.” According to Kirshner, all of these factors combine to create an atmosphere in which it's nearly impossible to succeed and thousands of law-abiding, hard-working citizens are getting left behind.

Unfortunately, notes Kirshner, these circumstances are not unique to Detroit. Similar situations plague cities throughout the country, and failing to address these problems at their root leads to further economic and social degradation.

While bankruptcy protection might seem like a simple solution for economically depressed cities, Kirshner is clear in her belief that this is not the answer. While Detroit has exhibited signs of resilience, and flashy headlines and trendy social-media posts paint a rosy picture of its “comeback,” Kirshner's portrait shows that the city and its residents are still struggling. “The ingredients needed to produce successful cities,” she writes, “are simply more complex than those needed to produce successful businesses.”

— Eric Liebetrau

READING LIST

New and noteworthy releases

THE SECOND FOUNDING

By Eric Foner '63CC, '69GSAS

In the wake of the Civil War, Congress passed the Thirteenth, Fourteenth, and Fifteenth Amendments to the US Constitution. Known as the Reconstruction amendments, they abolished slavery, provided for birth-right citizenship, guaranteed equal protection under the law, and established suffrage for Black men. In his fascinating new book, Eric Foner — Columbia's DeWitt Clinton Professor Emeritus of History — delves into the story of these groundbreaking amendments, the subsequent Supreme Court battles that essentially nullified them for many decades, and their enduring yet fragile legacy.

LITTLE WEIRDS

By Jenny Slate '04CC

Actress, comedian, and former *Saturday Night Live* cast member Jenny Slate first demonstrated the power of her unfiltered imagination in the children's Web series and bestselling book *Marcel the Shell with Shoes On* (both written with Dean Fleischer-Camp). In her new essay collection, she applies her trademark goofy wit to more-adult topics, including love, divorce, and depression. But while there may be depth and gravity to her subjects, the book is still pure Jenny Slate — quirky, a little bit wild, and endlessly fun.



AMERICA IS IMMIGRANTS

By Sara Novic '14SOA

America is a nation of immigrants, and in her timely new book, Sara Novic helps us to understand exactly where we'd be without them. The book is a collection of short biographies, all written by Novic (the author of the award-winning novel *Girl at War*) and illustrated by Alison Kolesar. Many of the names will be familiar — Madeleine Albright '68SIPA, '76GSAS, '95HON, Alfred Hitchcock '72HON, Rihanna — but Novic also includes lesser-known figures, such as the brilliant Bangladeshi engineer behind Chicago's Sears Tower and the groundbreaking scientists — many of them refugees from Nazi-occupied Europe — who worked on the Manhattan Project.

A REPUBLIC, IF YOU CAN KEEP IT

By Neil Gorsuch '89CC

At the Constitutional Convention of 1787, Benjamin Franklin famously said that he and his fellow Founding Fathers had built “a

republic, if you can keep it.”

As a lawyer and judge for more than thirty years, and now as an associate justice of the US Supreme Court, Neil Gorsuch writes that he is committed to preserving this vision — in other words, with keeping it. His latest book is a memoir of his time in public office and the experiences that have shaped his successful career. In it he reflects on some of his core values — particularly how he sees the role of a judge in today's society, the importance of civic education and civil discourse, and why he believes strongly in an originalist interpretation of the Constitution.

TRANSACTION MAN

By Nicholas Lemann

America has undergone significant cultural change over the past generation, but rather than looking to the usual suspects to explain “the rise of the deal and the decline of the American dream,” Columbia Journalism School dean emeritus Nicholas Lemann digs

deeper. In his latest book, he creates portraits of three lesser-known Americans whose lives and work help illustrate the country's shift from “an institution-oriented to a transaction-oriented society” and give human context to the seemingly inexorable financialization of our culture.

SHE SAID

By Jodi Kantor '96CC and Megan Twohey

When journalists Jodi Kantor and Megan Twohey broke the story of Harvey Weinstein's decades of sexual harassment and abuse in the *New York Times*, they never could have predicted what would happen next. In the months that followed, hundreds of women would come forward to share their own stories of mistreatment, fueling outrage, activism, and the #MeToo movement. Now, in their new book, the Pulitzer Prize-winning team offers a riveting behind-the-scenes look at the perils, process, and payoff of this extraordinary feat of investigative journalism.

Stopping Cancer in Its Tracks

Azra Raza, the Chan Soon-Shiong Professor of Medicine at the Columbia University Irving Medical Center and the director of its Myelodysplastic Syndrome Center, argues in her new book, *The First Cell*, that we need to radically rethink the “war on cancer”



Columbia Magazine: In *The First Cell*, you call for a fundamental shift in the way we approach cancer research and treatment. Can you explain this?

Azra Raza: For decades, our strategy has been to try to kill every last cancer cell, and in pursuit of that goal we have witnessed cycle after cycle of excitement, anticipation, a new magic bullet just around the corner, followed by crushing disappointment. I’m proposing that instead of fighting the disease at its most malignant, malevolent end stage, we catch it early. I’m not saying we will literally find the very first cell, but the idea is to identify problem cells at the earliest point possible. By detecting the footprints of the disease — its biomarkers — we can eradicate these cells before they have a chance to organize into an incurable disease. To be clear, I’m not calling for all current research to stop; patients with active disease need to be treated. But the status quo is unsustainable and financially ruinous for individuals, institutions, and the nation’s health-care system. Also, we must look at all this through the prism of patient anguish.

CM: Your book accomplishes that last goal beautifully, thanks to the powerful stories you share about your patients, including your late husband. His ordeal was particularly eye-opening.

AR: It was. As I say in the book, “I’d been treating cancer for two decades, yet until I shared a bed with a cancer patient, I had no idea how unbearably painful a disease it could be.”

CM: You specialize in acute myeloid leukemia (AML), one of the deadliest blood cancers. How do you make peace with the fact that so many of your patients die?

AR: Basically, as the philosopher Antonio Gramsci says, we must have pessimism of the intellect matched by optimism of the will. That is, we understand a situation’s gravity in all its profundity, yet we address it with positivity. My patients have taught me that there is no definitive despair *or* hope. When a blood count is good, we high-five and dance in the corridors. Two weeks later, the counts fall and we’re in despair. The despair heightens the beauty of the happier moments. I am deeply moved by the nobility of my patients’ endurance — the way they and their families rise to the challenges. I am so fortunate to see the best side of humanity on a daily basis.

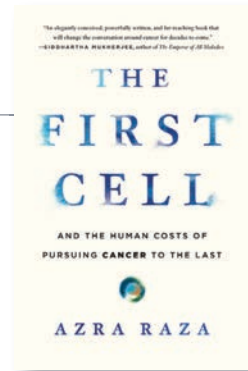
CM: Since 1984, you have been building a one-of-a-kind repository of more than sixty thousand blood and bone-marrow cells donated by your patients with myelodysplastic syndrome (MDS), a blood disorder that leads to acute leukemia in about a third of cases. How can this repository aid in early cancer detection?

AR: I believe the tissues languishing in its freezers may hold the answer to finding the first cell. Examining these samples, we can identify the cells that are harbingers of cancer. The key question is why some people get MDS. If we sequence the DNA in the patients’ *normal* cells, we can determine the genetic quirk, if any, that made them susceptible to MDS and subsequently to AML. (This is similar to the BRCA mutations that put some women at high risk for breast or ovarian cancer.) Then we can go to the DNA banks and compare my patients’ DNA with that of healthy individuals. Eventually, a barcode of inherited mutations will be used to pinpoint people with a genetic susceptibility to certain cancers and allow targeted screenings. The future of early cancer detection is a constant screening of the human body as if it were a machine.

CM: How will we fund these new technologies?

AR: I generally don’t say a lot in favor of capitalism, but it is very effective at providing incentives. We spent more than a billion dollars to sequence the first human genome; within fifteen years, the cost fell to a few hundred bucks, thanks to capitalism and competition. Friends worry that my book will provoke a backlash from pharmaceutical companies making huge profits from cancer drugs. But right now those companies have perhaps ten million cancer patients and survivors to treat. If they pursue the monitoring of healthy people for the first signs of disease, they’ll have three hundred million subjects.

— Lorraine Glennon



PROFESSIONAL SERVICES

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REAL ESTATE

GLEN RIDGE, NJ:

Center-hall colonial for sale in historic community. 4BR, 2BA, backyard with flowers and apple trees. \$572,000. Contact: janetska@gmail.com, zillow.com/homedetails/6-Hathaway-Pl-Glen-Ridge-NJ-07028/38655835_zpid.

NAPLES, FL condo. Mint condition. 3BR, 2.5BA. 1,700 square feet. Ask price \$275,000. Close to beach, shopping, and dining. Call or text broker/owner: 239-273-0666.

PANORAMIC BLUFF: Top vistas of Lake Pepin/Mississippi River from charming home. Historic barn/stable, fenced pastures. 50 miles from Minneapolis. sothebysrealty.com/eng/sales/detail/180-l-722-wdnq9j/w4457-120th-avenue-maiden-rock-wi-54750.

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CLASSIFIEDS

PARIS: Lovely studio apartment in Saint-Germain-des-Prés. lefanion.com/paris.html, 212-463-8760.

ROME: Spacious, stylish, renovated apartment near St. John Lateran and Metro. 2 bedrooms, 2 baths, Wi-Fi, elevator, aircon, \$950/week. lm603@columbia.edu, 212-867-0489. 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 imagesoftuscany.com.

VERMONT RENTAL close to Stratton/Bromley, shopping. Views, 3BR, 2.5BA, 2 living rooms. Monthly/seasonal. vinespinot@gmail.com.

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RARE FINDS

WHAT IS IT?

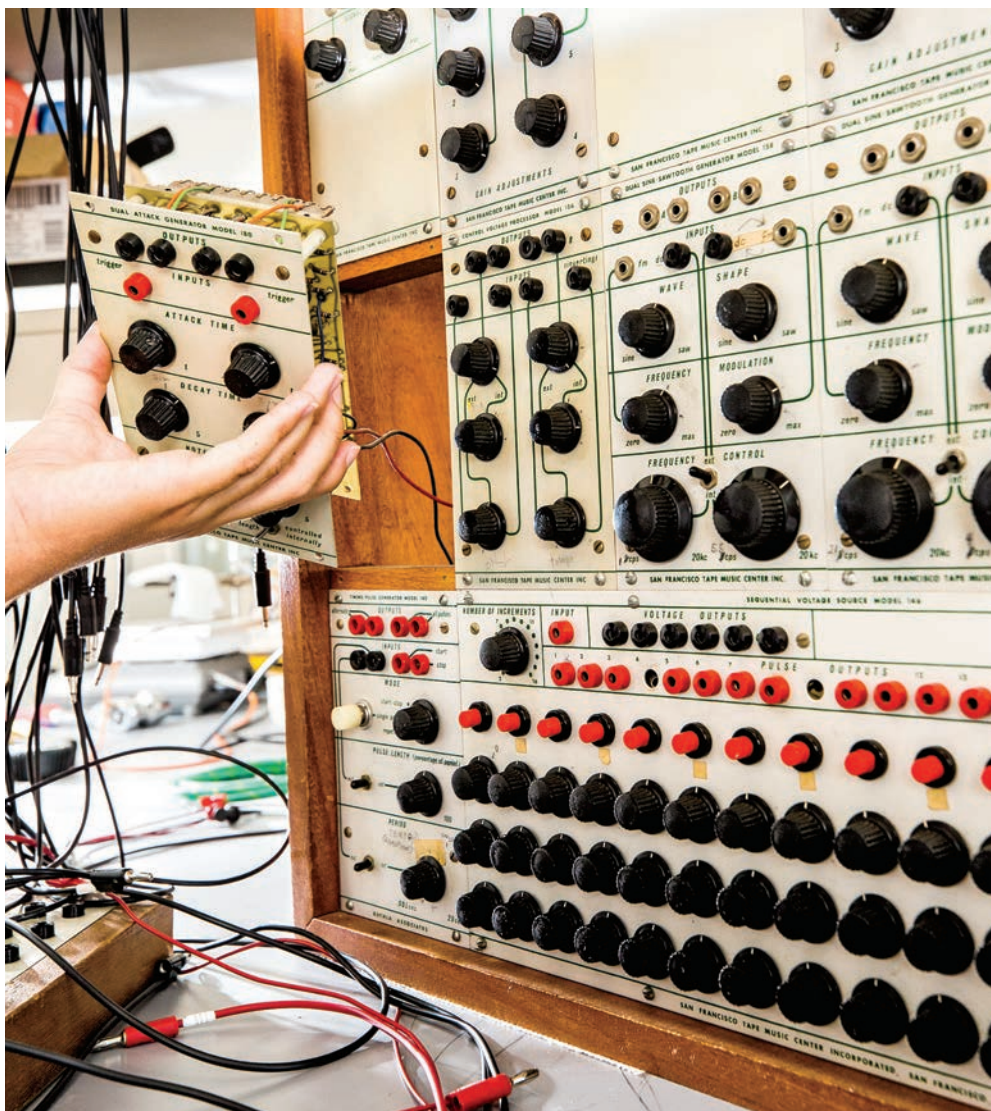
Restored vintage Buchla 100 series synthesizer, 100 series

WHEN WAS IT MADE?

Mid-1960s

WHERE CAN I FIND IT?

Columbia's Computer Music Center



Rewired for Sound

In 1964, in upstate New York, Robert Moog '57SEAS unveiled the first modern synthesizer — or one of the first. Around the same time, an audio engineer in California, Don Buchla, produced the Buchla 100, which had no keyboard and resembled a Mission Control switch panel. While Moog's instrument entered rock arenas, Buchla's became the sonic wellspring for composers of electronic music. Musicians twiddled its knobs and dials to produce an almost infinite soundscape of blips, beeps, buzzes, warbles, wheezes, and whirs.

"Buchla wanted the performer and the composer to revel in the electronic nature of the sound and break free from not only Western instruments but also the scale, and even the ideas of melody and harmony,"

says David Vallancourt '81SEAS, a senior lecturer in Columbia's electrical-engineering department.

Columbia acquired three Buchla 100s in the late 1960s. Two are gone; the other fell into disrepair. Last year, Vallancourt and Brad Garton, director of Columbia's Computer Music Center, invited a group of student engineers and musicians to fix the machine's corroded circuitry. The team painstakingly restored the old Buchla to its former chirruping glory.

One of the students, William Mauro '19SEAS, did a thorough investigation of the period components. "He tracked down every indicator, every original jack," says Vallancourt. "There's virtually no way to tell that this Buchla has been rebuilt." 🎛

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